



Investigating the Role of Social Media in Supporting Parents and
Teachers of Students with Down's Syndrome: Focus on Early
Intervention Services in the Kingdom of Saudi Arabia

By

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Declaration

I, **Awatif Habeeb ALShamare**, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature

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25 January 2019

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Abstract

This study aimed to identify the role of social media in supporting parents and teachers working with children with Down's Syndrome (DS) in the Kingdom of Saudi Arabia (KSA), especially during the provision of early intervention services (EIS). A qualitative approach was adopted for data collection: semi-structured interviews were conducted with 12 participants (6 mothers and 6 teachers) who had experience in the use of social media. These face-to-face interviews were carried out in a daycare centre providing early intervention services in Riyadh. Thematic Analysis which is a flexible method that allows themes to emerge from the data was chosen to analyse the interviews. The findings highlighted the significance of social media in supporting parents and teachers in the provision of early intervention services for children with DS. The various platforms fulfilled the following functions: (1) provision of a realistic and unrestricted communication environment; (2) access and globalisation; (3) setting up of the family unit as a model for early intervention services; (4) influence on the traditional roles in Saudi society; (5) role activation of counselling, teamwork and volunteer work; (6) communication tool with the government; (7) increase in the level of awareness of Saudi society; (8) provision of a database on early intervention; (9) a tool for creativity and innovation; (10) an alternative to the lack of early intervention services in KSA. Furthermore, the study revealed the most important challenges and problems faced by parents and teachers when using social media. These can be divided into the following categories: religion and culture, family and health, politics and technical issues. Based on the findings, a framework was created to explain the role of social media in supporting parents and teachers in providing early EIS for DS children in the Saudi context. The general outcome of this study emphasises that social media is a reliable alternative solution to support the role of mothers and teachers in working with children with DS. It is also the most prominent, most widely accepted and preferred tool for learning and acquiring information about EIS. Finally, based on the results of this study, recommendations are put forward for the future "Vision 2030" Saudi government policies which plan to turn social media into one of the effective tools to provide EIS for children with DS and other disabilities.

Impact Statement

The main objective of this study was to investigate the role of social media in supporting parents and teachers working with children with DS, particularly during the provision of early intervention services in KSA. This qualitative research project was undertaken through the semi-structured interviews of 12 participants in order to explore their opinions, experiences and feelings. It was deemed important to give a voice to the parents and teachers who are direct stakeholders in the training and care of children with DS. To-date, the topic of social media and Early Intervention had not been addressed. Also, the qualitative approach adopted in this study has rarely been used in research on special education in Saudi society. Therefore, this study aimed to fill the knowledge gap and contribute to the understanding of the use of qualitative research in the special education domain. This study also provides a database for future researchers interested in the field of special education, enabling them to perform multiple studies on the most important topics that emerged from the current findings. By building on the literature, the current study findings could enhance our understanding of the role of social media in the field of special education. In addition, one of the important contributions of this study, through its findings, is to provide a realistic picture of parents and teachers in KSA, based on the views and experiences of the participants. The opinions focused on the ways to activate and use social media in the provision of EIS for children at home in a cost-effective, effort and time-efficient manner. It is clear that the parents and teachers use social media to make up for the lack of centres for EI. It offers them an effective and quick alternative and also serves as a documented tool in the process of delivering and sharing information inside and outside KSA. This research has shown how consultation and collective action can extend beyond the local community. Through social media, parents are empowered and know that they do not have to rely on service providers: the family acts as a provider of EIS for their children and they are the reason for the success of the intervention. Finally, this study presents an important recommendation addressed to Saudi government: the importance of focusing on social media as a means and a successful alternative to provide EIS in all regions of KSA, thus contributing to solve many of the current problems due to the lack of centres in KSA or the lack of availability of specialists in the area of EI. Therefore, I hope that decision makers in Saudi government including the official ministries of Media and Education will unite their efforts and work together to establish an official body specialised in the establishment and follow-up of social media sites. Such a trusted and officially recognised body could be supervised by these ministries and provide comprehensive scientific content on EI services. This will achieve the aspirations of Saudi Government and its "2030 Vision", which emphasises the role of community members in helping the government to provide the best services to their children, whether in education or private care. When such specialised associations are provided, families will have a major role in their utilisation within Saudi society and they will feel empowered, in that they have an official association to plan, implement and evaluate the effectiveness of these media in the field of special education.

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List of Abbreviations in this study

BBS.....	Bulletin Board System
BERA.....	British Association for Educational Research
BSL.....	British Sign Language
DS.....	Down's Syndrome
EI.....	Early Intervention
EIES.....	Electronic Information Exchange System
EIS.....	Early Intervention Services
FAPE.....	Free Appropriate Public Education
GDP.....	Gross Domestic Product
GSSE.....	General Secretariat of Special Education
IDEA.....	Individuals with Disabilities Education Act
IEP.....	Individual Educational Programs
IFSP.....	Individualized Family Service Plan
KSA.....	Kingdom of Saudi Arabia
OPEC.....	Organization of Petroleum Exporting Countries
RRSEP.....	Rules and Regulations of Special Education Programs
TA.....	Thematic Analysis
UAE.....	United Arab Emirates
UNESCO.....	The United Nations Educational, Scientific and Cultural Organization
USA.....	United States of America
WDSD.....	World Down's Syndrome Day

Chapter One: Introduction

1.1 Introduction

This chapter provides an overview of the background for this research. It discusses the current importance of social media and its impact on facilitating communication and rendering it more useful in different areas of life. The research context is used to explain the knowledge gap that this study seeks to bridge and my personal motivation to address such research in the field of specialisation. Also, the importance of this research in the Saudi context is examined in terms of; (1) cognitive enrichment and bridging the scientific gap in the field of special education; (2) the development of special education policies in the Kingdom of Saudi Arabia (KSA); (3) service to parents and specialists in the field of special education and (4) the future aspirations of the researcher in the professional field. This chapter also explains the general objective of the study and the most important research questions addressed that are directly related to this objective. The definition of the terminology adopted in the study is also clarified. The chapter ends with an outline of the thesis.

1.2 Research Background

The emergence and spread of the Internet have led to the advent of a new kind of media called social media. As Wasike (2013) explains, social media has two different aspects: the communicative and the social. Media refers to instruments of communication such as radio, television, and print. It may be deduced, therefore, that social media refers to tools of communication, but with a social aspect to them. Social media not only provides information, but also presents a forum for individuals to interact with each other. As a result, social media has opened up a whole new world of communication with the user at the centre. Today, people in developed countries where there is no censorship can communicate with each other instantaneously. Tess (2013) states that “the growth of social media and other Web 2.0 technologies is unprecedented. Social media technology has become an essential part of personal life as users generate content, share photos, choose to ‘like’, or interact in a game” (p. 60). Scarpino and Alshif (2013) also point out that

Social networking, smartphones, and social media applications are becoming increasingly popular and are used by millions of people for many reasons. Social networking allows users to be connected with their families and friends, and provides them with several functionalities such as sharing photos, videos, news, daily status updates, and other (p. 72).

In recent years, the Kingdom of Saudi Arabia has availed itself of most forms of social media. The Saudi government has allowed these new technologies to be used by all members of society, thus revolutionising the openness to new media. The emergence of the Internet and its rapid spread in Saudi regions is one of the significant factors contributing to the increased use of social media. The Internet has the ability to adapt to, and overcome, censorship techniques and social and political constraints prevalent in Saudi society (Al-Qahtani, 2011; Dulaimi, 2011;

Simsim,2011; Social Networking Sites in Saudi Arabia, 2015). The technological development and the ready availability of smartphone devices have made access to social media easy in Saudi society, especially among young people who make up 60% of the nation (ibid.). According to Social Networking Sites in Saudi Arabia (2015), the Kingdom of Saudi Arabia is ranked tenth globally in its social media uptake, immediately after the United Arab Emirates (UAE). One hundred and ninety million YouTube daily views have been recorded in KSA (ibid.). This is the highest number of YouTube views in the world per internet user. In fact, the average internet user in KSA watches three times as many YouTube videos per day as the average user in United States of America (USA) (The Arab News, 2012). The Kingdom of Saudi Arabia also leads the Arab region with the most playbacks per clip, followed by Egypt, Morocco, and the UAE. Kuppuswamy and Nithya (2015) argue that

[The] Saudi Government has increased its efforts to open its domestic progress to the international community via social media networks, such as Facebook, YouTube Twitter, Google and the WhatsApp application. These social media networks create mutual understanding between the Kingdom and the other nations of the world which can be achieved. (p. 30)

This technological development has increased interest in the study of social media in various scientific fields in KSA, for example administrative, economic, social and medical fields. Education is one of the most important areas, because of the close relationship between technological and cognitive development. Researchers in the area of education have therefore endeavoured to devote their efforts to study the importance and benefits of social media in the lives of students, families, and employees in the educational process. Moreover, they have begun to identify the most significant advantages and disadvantages of the use of social media in the development of the public and higher education sectors (e.g., Aifan, 2015; Alsanie, 2015; Alwagait, Shahzad & Alim, 2015).

Special Education is no different from the other educational fields that have become interested in the field use and applications of social media. This has been further facilitated by the emergence of legislation and international, regional, and local laws, which emphasise the importance of understanding human disabilities in terms of normal human rights, duties and standards and underlying legislation about the rights of people with special needs. It is now recognised that people with disabilities need every opportunity to take advantage of educational services. According to the Prince Salman Center for Disability Research (2004), 'System Care for People with Special Needs' was established in 2000 which stresses the need for co-operation between all government ministries, such as the ministries of Media, Health and Education to support people with disabilities. Also, in 2007, the United Nations ratified the Convention on the Rights of Persons with Disabilities and this law was implemented in 2008 (Association Public, 2011).

The Convention was signed by 13 Arab countries, including KSA. This Convention aims to promote, protect, and ensure the equality and human rights of people with disabilities. Reported in the Convention are items supporting access for people with disabilities to technologies and systems of new information and communication, including the Internet (ibid.).

Researchers in the field of special education sought to study the relationship between social media and special education in Riyadh in 2015. They presented papers in the seminar called 'Social Media and Service for Persons with Disabilities,' which was the first seminar to be held in KSA to discuss the subject of social media in special education. Participants in the seminar reviewed a selection of local, Arab, and international social media experiments and outlined research undertaken on the use of social media with people with disabilities and the challenges they faced, as well as experiences from other countries with regard to the use of social media. In addition, the researchers attending this seminar highlighted the importance of identifying the role of social media to serve people with disabilities and to help them resolve any problems they might face in the future (Disabled Children's Association, 2015).

The number of social media users amongst special education teachers and parents of children with disability is increasing annually. Merza (2013) points out that there has been a rise in the number of families with disabled members using social media sites and platforms to pressure the government for an expansion of EIS. Al-Haj (2012) stressed that people with disabilities were able to interact and share both their needs and abilities with the community via social media without any of the issues, restrictions or barriers faced when using traditional media.

However, Alkhamis and Asalawi (2007) argue that there is a paucity of in-depth studies on the effectiveness of social media that meet the needs of people with disabilities and their families. Indeed, to-date, there are no qualitative studies which testify to the true nature of the interaction between teachers and parents when using social media, nor the role of social media in supporting and assisting parents and teachers when using these forms of communication for special education. Current studies on social media in KSA are limited and do not go beyond working papers, such as AlMagushi (2007), Al Khamis and Asalawi (2007). Fadil (2007) focuses on the relevance of social media to serve people with visual and hearing impairments, but disregards the role of parents, teachers, and professionals working in support services; all of these people are vital for planning and working with people with disability in educational services.

Therefore, the proposed research investigation is an attempt to fill this gap as it is the first study that focuses on the role of social media in the field of special education in KSA. Thus, this study aims to identify the role of social media in helping parents and teachers of students with DS, a special focus on EIS in KSA.

1.3 Personal Motivation

I have embarked on this research project for several reasons. First, I have a scientific background in the area of education. I work as a lecturer at King Saud University in the Department of Special Education. I have over 13 years of work experience in the academic sector, as well as field work gained through direct communication with female graduates in the department, special needs teachers and mothers of children with DS, learning disabilities, autism, multiple disabilities in KSA. I actively keep up-to-date with developments in the field of special education in KSA and the changing challenges and difficulties experienced by practitioners in this area. In addition, I have worked as a supervisor at one of the special education online forums in KSA, thus integrating the use of technology with the field of special education. Engagement at this level has shown me the importance of social media in the life of those involved in special education, such as parents, teachers and other specialists. However, as mentioned above, the role of social media in the sphere of special education has not been properly addressed. There have been many studies dealing with the topic of special education in areas such as psychology, medicine, sociology, art and childhood but not in the field of social media. In other words, there are few studies with objective results that assess the importance of social media for the families of children with special needs and specialists in the domain.

It was clear to me, therefore, that there was a need for research in this area. More specifically, in the Saudi context, the opinions and feelings of those interested in and working with individuals with special needs have not been taken into consideration. This is important because, with the rapid technological development, I have noticed that there has been a significant increase in the use of online platforms by mothers, teachers, specialists and people with disabilities. However, in KSA, there have been no studies to identify the type of use, reasons, or the most important challenges facing social media users, amongst either families of children with disabilities or specialists in the field. Therefore, I chose to conduct research in this area and investigate the role of social media in helping mothers and teachers to serve children with DS, especially in EIS.

I have decided to focus on early intervention services because my country (KSA) is unlike the Western world which has been developing the field of EI for decades. In KSA there is a significant delay in the development of EIS, which is still in its early stages compared with special education services such as integration that received more attention than EI. Early Intervention is an important step to the success of integration programmes and children's independence, provides urgent solutions and interventions for children at risk and minimises the expected difficulties due to delayed treatment and education. Several studies in KSA have highlighted the delays in developing EI and claimed that its current status is unsatisfactory (Al-Aoufi, 2011; Almalki, 2013; Merza, 2002; Merza, 2013; Omar, 2014; AL-Zaalah, AL-Asmari, AL-Malki, AL-Shehri & AL-Moalwi, 2015).

I have observed that the lack of intervention services is not due to the lack of government financial support or the absence of domestic and international laws and regulations that define the rights of children to access services in their early stages. Rather, it is due to the fragmentation of the work of the ministries, such as the Ministry of Health, the Ministry of Education and the Ministry of Social Affairs, concerned with the organisation, planning, implementation and evaluation of early intervention services in KSA. This absence of coordination between the different ministries has resulted in the delayed opening of early intervention centres in all regions of KSA, as well as lack of support for human resources providing EIS.

The current reality of EI depends on the individual efforts of parents, teachers and the private sector, which is trying to open some private centres, especially in the main cities in KSA, such as Riyadh and Jeddah. However, other regions in KSA still have a shortage of government centres. In brief, therefore, I see this research as addressing a highly topical issue. I also think that this research has practical applications in the fields of special education and media. In this context, I provide recommendations in Chapter Seven based on the findings.

1.4 Significance of the Study

This study will enhance our understanding of the role of social media in supporting parents and teachers of students with DS, with an emphasis on the provision of early intervention services in KSA. I hope that the scientific knowledge of this study will contribute to a number of aspects: knowledge enrichment and bridging the scientific gap in the field of special education, development of practical knowledge of high significance to Saudi society and its individuals and finally, my future professional aspirations.

1.4.1 Cognitive enrichment and bridging the scientific gap in the field of special education

In the Kingdom of Saudi Arabia, there is a lack of information and resources on special education and the use of social media. Aifan (2015) stressed that there was a lack of educational studies on social media, especially in the Middle East. Therefore, this study will contribute to bridging the knowledge gap and increasing the academic literature for educational studies in Saudi and Arab society. This study is the first in KSA, especially in the field of special education, which expands our understanding of the actual role of social media, based on the views of parents and teachers in this area. Accordingly, I have ensured that all available resources have been checked and verified, whether in print or electronic, to ensure that no previous authoritative research focuses on this subject. For example, a review of the King Fahd Library where references are kept for all areas of academic studies was undertaken (see Appendix A).

Furthermore, the methodology used in this study, which is the "qualitative approach", is rarely used in special education research in KSA. This has been confirmed by Al-Hano (2016), who sought to identify the importance of qualitative research in the field of special education. He analysed the research published in 10 Arab refereed journals over a ten-year period from 2005 to 2014. The qualitative research methodology was used in only three studies, while the quantitative research methodology was adopted in 322 studies. Al-Hano also confirmed that the qualitative research approach was rarely used by Arab researchers in special education, despite its relevance to special education issues. Also, Al-Kahtani (2015) underlined that qualitative studies were exceedingly rare in the Saudi context. Therefore, the current study makes a significant methodological contribution to the field of special education. Other researchers could also build on the methodological approach adopted in this study in order to further investigate the needs of disabled children, assess the views of their family and their teachers, and provide guidelines and recommendations regarding the services and support required.

1.4.2 Development of special education policies in the Kingdom of Saudi Arabia

I envisage that the results of this study will have important applications in that they can help to develop special education policies in KSA. This is likely to provide a theoretical and practical base for the establishment of appropriate and effective programmes between the ministries of media and special education in particular. In addition, it is hoped that by identifying the views and requirements of parents and teachers in the area of special education, this study will raise governmental awareness, demonstrating the need to develop its services for children with disabilities. Social media is currently one of the most important channels of communication between government and community members. This will be reflected positively by helping families with children with special needs, especially those living in rural areas who lack specialised early intervention centres.

1.4.3 Services to parents and specialists in the field of special education

The knowledge gained from this study will help parents by making them more aware of the role of social media in providing them with the EI information and expertise most needed to help their children in early life. Social media plays a major role in the communication and exchange of knowledge between parents and specialists in the field of special education and in compensating for the lack of early intervention services in KSA. The results discussed in this thesis are based on the experiences of parents and teachers and provide a realistic picture of how they benefit from social media and how they employ the different platforms to support their children. It is hoped that Saudi parents of children with DS and other disabilities will be encouraged to use social media for the acquisition and exchange of knowledge and for mutual support in the interest of the children.

Furthermore, the results of this study will be useful for those working in the field of special education. The opinions and experiences of field teachers discussed in this study could be a source of motivation for other professionals to focus on the role of social media, enabling them to improve education offered to children with DS, especially in terms of EI. This study offers a qualitative database which can be built upon for further research in the field.

1.4.4 Future aspirations of the researcher in the professional field

As the researcher, this project will contribute to develop my cognitive skills, and to enrich my knowledge; specifically, by publishing scientific papers and research in a number of academic journals and scientific conferences. In the future, I plan to create a research Chair, designed to promote the integration of the field of special education and social media, which currently does not exist in Saudi Universities. This post would enable collaboration between researchers inside and outside KSA, contribute to increasing the number of scientific studies in this field and provide effective services to the community, especially to parents of children with special needs and to all professionals in this field.

1.5 Aim of the Study

This study aims to identify the role of social media in supporting parents and teachers working with children with DS, especially during the provision of early intervention services in KSA. The present study is expected to provide answers to a number of related questions.

1.6 Research Questions

The study will be guided by the key research question: What is the role of social media in supporting parents and teachers of students with Down's syndrome in early intervention services in the Kingdom of Saudi Arabia?

The following sub-questions have been formulated to assist in achieving the objectives of the study:

- 1- What is the current praxis of social media and how does it vary amongst parents and teachers?
- 2- What are parents' and teachers' perceptions of the benefits, challenges and/or potential problems of using social media within an early intervention context?
- 3- Is there an emerging overarching framework of effective practice in employing social media in this context?

1.7 Definition of Terms

Within the context of the current study, the following terms are defined as follows:

Social Media. Refers to types of social media platforms which are mentioned, used and preferred by the participants in this study: Twitter, Instagram, WhatsApp Snapchat, YouTube, Forums, Pinterest and Facebook. Wernz (2014) emphasises that “social media is a means of helping people create their own content and providing them with the opportunity to interact and exchange ideas and information through a variety of sites and platforms” (p. 2).

Parents. Refers to mothers, who are generally the primary caregivers for children with DS. They are mainly responsible for educating and caring for their children in KSA, whereas the father’s primary focus tends to be on the family’s financial matters. Merza (2002) confirms that mothers in KSA look after their children with special needs more than fathers, especially in early childhood. She explains that because of their greater responsibility to care for their young children, the mothers are subjected to more psychological pressures and moral stress than the fathers.

Teachers. Refers to female teachers in special education who have a Bachelor's Degree in the education of children with learning disabilities. They work in special education centres in Riyadh. The selection of female teachers in this study is due to the fact that in KSA female teachers are directly responsible for the education of children with DS, especially in early daycare centres.

Early Intervention Services. According to IDEA (1997), early intervention services means “developmental services that are designed to meet the developmental needs of an infant or toddler with a disability and the needs of the family to assist appropriately in the infant’s or toddler’s development. The following areas are addressed: physical development; cognitive development; communication development; social or emotional development; adaptive development” (p. 57).

Students with Down's syndrome. Refers to children with DS who have a genetic disorder caused by the presence of a whole or partial copy of chromosome 21. Children with DS have mild to moderate learning disabilities and can currently study in special education centres in Riyadh.

1.8 Thesis Structure

This thesis is divided into seven chapters. This first chapter has provided a general background to the research, discussed the personal motivation behind this work, and explained the significance, aim and research questions of the study. Also, the most common terms used in this study have been clarified.

Chapter Two provides a brief overview of the Saudi context in terms of its location, economy religion, culture, and educational situation. Also, outlined are the domain of special education in KSA in terms of a survey of the beginnings of special education, current services and the most important laws and legislation for people with special needs as well as the early intervention in KSA and the most important challenges in this area. This chapter also provides information about the media in KSA since its inception, as well as the rapid changes that have swept Saudi society since the emergence of the Internet, which clearly contributed to the spread of social media.

Chapter Three reviews the most important literature relevant to this study, including studies on Down's syndrome, the need for early intervention services and social media.

Chapter Four examines the different research methodologies and justifies the use of the qualitative approach for this study. The chapter also provides detailed information about the data collection methods, the participants and the data analysis procedures. Finally, the concepts of reliability and validity in research and ethical issues are discussed.

Chapters Five provides an overview of the participants, their backgrounds and their views on the subject study.

Chapter Six presents the data according to themes which have led to the emergence of many codes relevant to the research questions.

Chapter Seven discusses the results of the study based on the research questions and the relevant literature. It also assesses the most important limitations of the research and outlines recommendations for future and the research recommendations for Saudi policy officials in the light of the data and results of this study. Finally, this chapter shows my personal reflections on the Ph.D. journey.

Chapter Two: The Study's Setting

2.1 Introduction

This chapter provides a brief overview of the most important issues related to KSA, i.e., the study's context. This includes a general outline of the geographical, economic, religious, and social contexts and the educational situation of people with special needs in KSA. This background is important in understanding the responses of the participants in this study who represent a sample of parents and teachers of children with DS. This chapter begins by describing the location and political history of the country. It then discusses the economic situation and the future direction of the country as described in "Vision 2030", which is an ambitious project devised by Saudi leaders to develop the country as a centre of socio-economic excellence. It also presents an outline of the religious and social background and its impact on the ways Saudi society thinks. Next, the chapter includes a review of the educational system in KSA, from its inception until the present time and discusses in detail the field of special education in the country from a historical perspective. The most important legislation that serves the rights of people with disabilities and their families and the current reality of services provided in the community are examined. An overview of key research topics in terms of identifying the prevalence and causes of DS is provided. Next, the chapter describes the provision of early intervention services for DS and the main challenges in providing or failing to provide these services. The chapter ends with a brief examination of media generally, and social media specifically, in KSA.

2.2 An Overview of the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia is the largest country in the Middle East, located specifically in the south-west of Asia. It makes up the bulk of the Arabian Peninsula (2,200,000 km²) (Alrashed & Alunizan, 2012). According to General Authority for Statistics (2017), the population of Saudi Arabia in 2017 was approximately 32,552,336, with more males (57.44%) than females (42.56%). The population of non-Saudis reached 12.2 million, representing 37% of the total population. Standard Arabic is the official language of KSA, although Saudi citizens speak more than 20 different local dialects. Also, English is widely used, especially in the fields of education, medicine and industry, in order to communicate between citizens and non-Arab residents (Alrashed & Alunizan, 2012; ur Rahman & Alhaisoni, 2013). The Kingdom of Saudi Arabia consists of thirteen administrative regions, each region includes a number of governorates. In turn, the governorate is divided into several administrative centres that are administratively linked to it, such as villages, Bedouin communities and rural areas. There are 134 governorates in the Kingdom. Riyadh has the largest number of governorates (twenty). The main cities in KSA are Riyadh (the nation's capital), Makkah and Madinah (the two holy Islamic cities), the Eastern province (the largest area in KSA and the region with the greatest amount of oil in the world), Jeddah (the port and the second largest Saudi city after Riyadh) (General Authority for Statistics, 2017).

Most of the population is concentrated in the major regions of the Kingdom such as Riyadh, Makkah, Jeddah and the Eastern province (ibid.). In terms of the Kingdom's borders with its neighbours, Iraq and Jordan are found in the north of the country, whilst Kuwait borders the northeast; the east is neighboured by Qatar and the United Arab Emirates and Bahrain, which is connected to KSA by the King Fahd Causeway located on the Arabian Gulf. The south is bordered by Yemen, and Oman to the south-east, with the Red Sea bordering to the west (Al-Nashwan, 2004), as shown in Figure 2.1.



Figure 2.1 Map of KSA

Source: https://upload.wikimedia.org/wikipedia/commons/archive/c/cc/20110210021249%21Saudi_map.jpg

Uthaymeen (2014) explains that KSA has experienced a number of important historical stages: before the introduction of Islam, post-Islam, the consolidation of power by the Arab tribes and the establishment of the monarchy by the Saud family. The Saudi state, founded by Mohammed bin Saud in 1744, ended in 1818; the second Saudi state lasted until 1891. The third Saudi state was formed by King Abdul Aziz Al Saud in 1902, who tried to unify all the Arabian tribes into a single entity known as The Kingdom of Saudi Arabia on the 23rd September 1932. In addition to the above, KSA is based on the monarchy in its political system. The reigning power is composed of the sons and grandsons of the founding king AbdulAziz al-Saud. The Crown Prince assumes the powers of the King upon his death until the new King is chosen. The King, who is the acting Prime Minister, governs with the assistance of "The Council of Ministers" and is the final authority for internal and external affairs. He commands control over twenty-two ministries and "The Shura Council", which consists of 150 members (120 males and 30 females) whose duty is to propose new laws and modify existing ones. (Bin Baz, 2015; The Shura Council, 2016). The legislation in KSA derives from the Qur'an and the Sunnah of the Prophet Muhammad. Also, it is based on justice, shura and equality according to Islamic law (ibid.). Figure 2.2 shows in detail the legislative authorities in KSA.

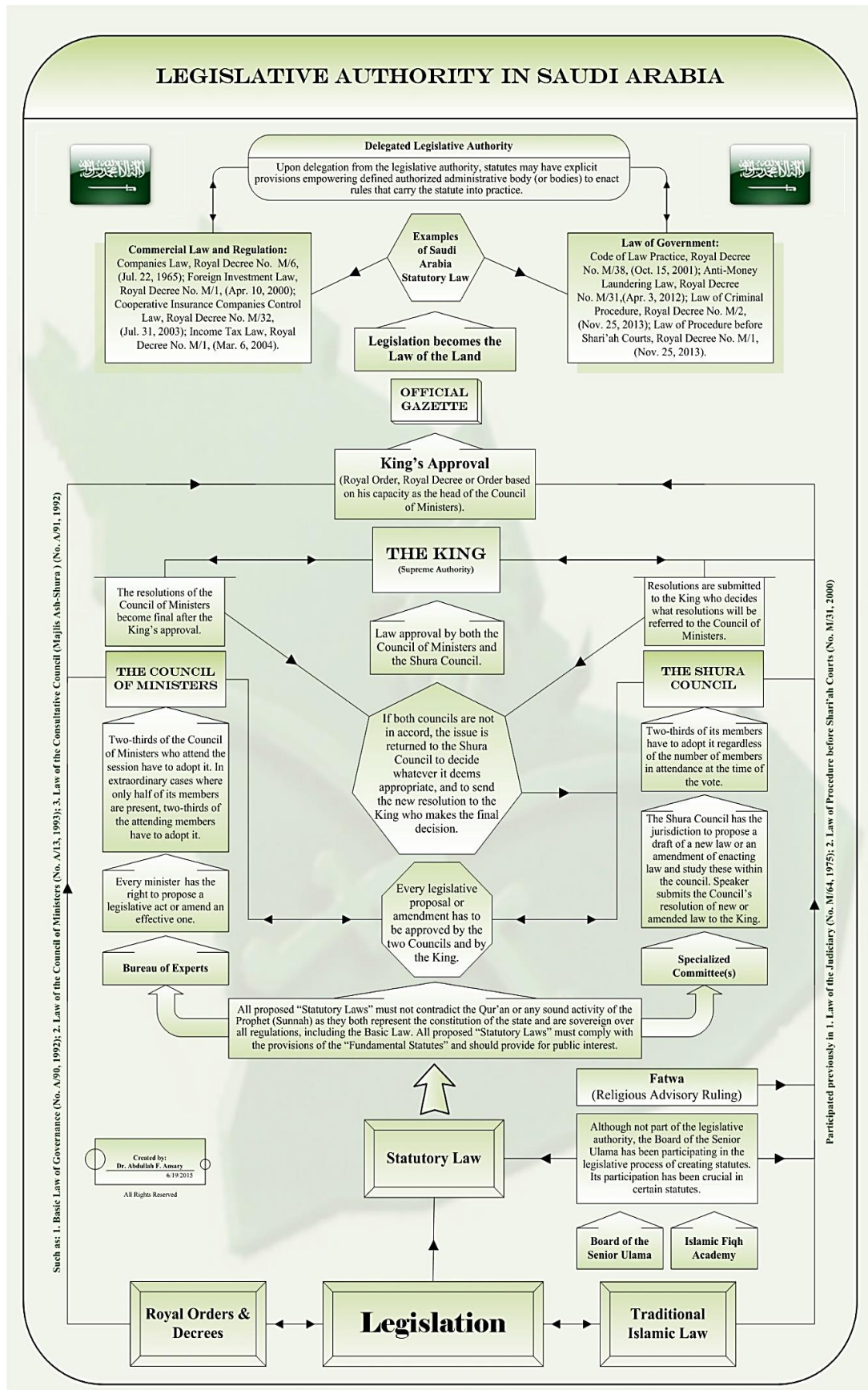


Figure 2.2 Legislative Authorities in KSA

Source: http://www.nyulawglobal.org/globalex/Saudi_Arabia1.html

2.3 Economic situation in the Kingdom of Saudi Arabia

According to Gate of the Two Holy Mosques (2017), KSA has influential global power both politically and economically. It also holds an important religious position as Muslims from across the world visit the Grand Mosque in Makkah and the Prophet's Mosque in Madinah; they are the most important sacred sites for Muslims. Approximately 12 million Muslims visit annually. Also, KSA has considerable economic wealth, due to its having the second largest oil reserves and the sixth largest gas reserves (British Petroleum, 2014). International Monetary Fund (2017) shows that the largest crude oil exporter in the world is KSA (90% of exports); its economy is ranked ninth in the world. It is also the fifth biggest contributor to the World Bank and has the right to overturn a veto of 3% in the International Monetary Fund. Additionally, Saudi Arabia's economy is the biggest free market in the Middle East and North Africa, where KSA retains a 25% share of the Gross Domestic Product (GDP) of those countries combined. The current account surplus is ranked third globally (after China and Germany) reaching \$132 billion (Saudi Arabian General Investment Authority, 2017). The Kingdom of Saudi Arabia is part of the Cooperation Council for the Arab Gulf States, the Organization of Islamic Cooperation, the World Trade Organization, the Organization of Petroleum Exporting Countries (OPEC) and many other international institutions (Ministry of Foreign Affairs in Saudi Arabia, 2017). On the 25th April 2016, KSA introduced a future plan called "Vision Saudi Arabia in 2030" (Vision 2030) and the government began the planning and implementation of this long-term vision, which is based on developing three aspects: the vital community, the booming economy and the ambitious nation. Vision 2030 aims to create a society that is not dependent solely on income from oil exports but relies on other sources in the country (e.g. human resources). Vision 2030 aims to make KSA a country of excellence (ibid.), as shown in Figure 2.3.

The economic development witnessed by KSA has contributed to making it a highly respected country in the world. It is associated with the other countries in a number of international Conventions and laws that serve humanity in various fields of life. Saudi economic impact and progress were positively reflected in the increase of the annual budget provided by the government to a number of sectors, e.g., the commercial, financial, banking, industrial, military, health and educational sectors. The sectors which received the highest percentage of the state budget were as follows: the educational sector, then the military and health sectors (ALdakhi, 2011). The fact that the education sector received the greatest proportion of the budget shows the importance that the Saudi government places on educating its people, as explained in the following section.

رؤية
VISION
2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

Here are some of the initiatives launched by the Saudi government to ensure the actualization of its ambitious Vision 2030:

 <p>Saudi Aramco Strategic Transformation program: "We believe that Saudi Aramco has the ability to lead the world in other sectors besides oil, and it has worked on a sweeping transformative program that will position it as a leader in more than one sector"</p>	 <p>Public Investment Fund Restructuring program: "Having worked on restructuring the fund, we are now refining its investment capabilities and enabling the fund to manage a broader portfolio of current and new assets"</p>
 <p>Human Capital program: "This program will measure, assess and analyze the efficiency of our civil service. It will also support our government agencies with staff, studies, consultations, and strategic partnerships related to human capital"</p>	 <p>National Transformation program: "We are identifying opportunities for partnering with the private sector, as well as innovative administrative and funding approaches. We are detailing specific initiatives that have clear performance indicators"</p>
 <p>Strategic Partnerships program: "We are working with our economic partners around the world to build new strategic partnerships for the twenty-first century, in harmony with our national Vision, so that we can be a trade hub connecting three continents and enhance our exports"</p>	 <p>Privatization program: "Our goal is to create a comprehensive privatization program that will make use of international best practices, transfer knowledge and achieve our goals in a balanced and scientific manner"</p>

Figure 2.3 Vision 2030 in KSA

2.4 Religion in the Kingdom of Saudi Arabia

Islam is the official religion in KSA, where members of Saudi society are Muslims, who believe that Islam is the last heavenly religion and also that Muhammad is the last prophet sent by God. The general meaning of the word Islam is the surrender to the unique God in all matters of life. Muslims also believe in all the prophets before Muhammad, e.g., Abraham, Joseph, Moses, Jesus, and the religious texts revealed to them, such as Zabor, the Torah, and the Gospel (Alturige, 2008). Islam provides a way of life that takes into account the individual's needs and those of the community and gives each individual his lawful rights and the group their legal and social status. This balanced approach has contributed to the continuation of the Saudi state since its inception in the middle of the 12th century to this day to preserve its principles and elements, while allowing for the changes and features of modern civilisation (ibid.).

Islam guarantees human beings many rights in different areas of life. Alturki (1998) explained in detail those rights. Some of these rights will be reviewed below. The first right is the "Right to Life"; Islam forbids the killing of any human being. This includes both the prohibition of aborting the foetus and the importance of preserving the life of the child, whatever his status. Islam also forbade suicide by killing oneself and also taking the lives of others whether they are Muslims or non-Muslims. The other right is the "Right to Dignity"; Islam emphasises the importance of human dignity and respect for the right to live and choose one's life, behaviour and religious beliefs. There has to be respect for people's feelings, whether male or female, white or black, Muslim or non-Muslim. Islam has also prevented ridicule among people, such as ridicule of a poor person, people with disabilities, people with congenital malformation, or spreading misinformation about anyone without their knowledge. Therefore, justice and equality are among the most important principles of preserving human dignity.

Moreover, there is the "Right of freedom", where Islam guarantees the freedom of individuals to make their personal decisions and adopt their desired behaviour. It is believed that each person will be held accountable based on his personal actions. Islam also guarantees to the people their religious, intellectual, political and social freedoms to the extent that these do not interfere with the religion, values, principles and freedoms of others. Islam also guarantees to any man or woman the choice of the authority that governs it on the basis of their consent and desire and not by coercion or domination. The other right guaranteed by Islam is the "Right to Education", which makes it necessary for men and women to acquire knowledge. Islam promotes science and regards scientists and knowledgeable individuals highly. It is believed that education is the exercise of the mind to recognise the facts and to give a person knowledge and experience useful to him and to humanity. The policy of KSA depends on the application of the Islamic legislation and the rights it gives to human beings in various spheres of life. For example, in the medical field, the abortion of foetuses is prohibited in Saudi hospitals except in the case where abortion is to save the mother's life and end a pregnancy that threatens her physical health. Such an abortion is only allowed with the consent of the mother, the father and

three specialised doctors who can ascertain the risks posed by the pregnancy. Saudi government also prohibits any treatment that leads to abortion (Nations Unies, Division de la population, 2001). This is in line with the right to life, dignity and freedom that do not go beyond what Islam has forbidden. Also, in the field of education, the Saudi government has taken care to implement the principles of Islam in the right of education for both males and females to obtain access to free education and encourage them in terms of equality and justice as well. Education is available to everybody including persons with disabilities (Ministry of Education of Saudi Arabia, 2017). This will be further explained later in the chapter.

2.5 Sociocultural Situation of the Kingdom of Saudi Arabia

Although Islam is at the core a moderate and practical religion, Saudi society, like other societies, is governed also by the social culture which includes customs, traditions, mores, social values and popular beliefs. Some of these sociocultural features may be compatible with religion, while others have nothing to do with religion but relate to the significance members of Saudi society attribute to them. In fact, the application of some of the customs and traditions violate the basic principles and practices of the Islamic religion (ALSaif, 2003). Table 2.1 presents a brief description of these concepts in the context of Saudi culture.

Table 2.1. Concepts of social culture in the Saudi context

Culture	Concept	Examples
Customs	Compulsory social behaviour which must be followed by members of the community. It involves some religious and customary values that make individuals conform to society in various social events and in their attitudes.	Respect for parents, respect for guests, respect and care for neighbours, socialisation, moral character, generosity, honesty, loyalty and courage.
Traditions	A set of rules of conduct derived from previous generations that are often specific or are associated with a particular environment; less binding than customs and transmitted from one generation to the next.	The traditions of the upper class, tribal traditions, Al Badia traditions and village traditions. Include things such as clothing, eating, arts, marriage, occupations, housing. Not related to society as a whole, but to each class
Mores	An unwritten social system consisting of beliefs and ideas derived from the views, heritage and creed of the community. Provides the distinction between right and wrong regarding the behaviour of people in society. Called Customary law.	Rules governing relations between relatives and non-recourse to the government and police to solve problems between relatives.
Social values	The moral and humanitarian nature of the group is considered and has the approval of the public. It may be a point of view. It is unstable, highly influenced by surrounding social and cultural conditions and variables.	Obedience to males such as father and husband, arly marriage, marriage between relatives only, polygamy.
Popular beliefs	Popular belief is a social phenomenon that results from the interaction of individuals in their social relations and their perceptions about life and existence and the forces of nature in cosmic life. It can be understood as the social accumulation of customs, customs, traditions and ideas.	The devil's eye faith in envy, Traditional Medicine and stories of evil spirits.

Source: Compiled by the author, adapted from ALSaif (2003)

Diab (1980) confirmed that the role of customs in discipline and organisation is no less than the position of the laws of positivism. Rules are the written authority of society, customs are the unwritten authority, which direct and control the actions of people sometimes. Although many customs, traditions and social values are compatible with Islam, some are in contradiction with religion and morality. The following are examples of some cultural practices in Saudi society which are contrary to Islamic principles. The examples focus on those practices that are relevant to this study. There are several other examples of customs and traditions that are incompatible with the religion of Islam.

2.5.1 Endogamy

One of the most common sociocultural customs in Saudi society is the marriage to relatives. This practice is common in some areas of KSA, where certain men insist on marrying women from within the family, and sometimes Saudi men are obliged to do so in response to the wishes of their family. Although this habit is sometimes attributed to Islam, it is contrary to the religion. In Islam, choice of a partner is based on good morals and the need to preserve the physical integrity of the offsprings. Medically, such marriages with close relatives is not to be encouraged as it leads to certain genetic diseases and disabilities. Indeed, in KSA, there are many cases of thalassemia, sickle cell anaemia, metabolic disorders, Down's syndrome, hearing disability, multiple disabilities which are linked to the family relationship between the mothers and fathers (Al-Abdulkareem & Ballal, 1998; Al-Gain & Al-Abdulwahab, 2002; AlSalloum, EIMouzan, AlHerbish, AlOmer and Qurashib, 2015). Although the Saudi government cannot control or prevent these customs and traditions, it has tried to implement the pre-marriage medical examination since 2004 to reduce rates of genetic conditions. However, some families still insist on this type of marriage and accept the presence of a sick child in order to preserve their customs and social values (ibid.).

2.5.2 Stigma

Social stigma is prevalent among some classes and families in KSA, like in other societies. People are labelled and ridiculed in a way that makes it socially unacceptable. This stigma is especially targetted at people who have specific social conditions (e.g., divorced or out of prison) or health conditions (e.g., mental illness, disabilities). Such stigma in Saudi society leads to many psychological problems for the individuals and their families. It also contributes to increasing negative attitudes among members of society, thus adversely impacting on the targetted individuals' interaction with the wider community (Al-Gain & Al-Abdulwahab, 2002; AlMunajjed,1997; ALSaif ,2003). Even though Islam has prohibited ridiculing or bullying individuals, such behaviours are common among some members of society.

2.5.3 Envy and devil's eye

Saudi society, like other societies in the world, holds many old beliefs that can be either right or wrong. One such belief relates to envy or evil eye: some members of society attribute their difficulties and problems such as fatigue, illness, loss of work or family issues to the evil eye. The faith and trust of people in God determine how they deal with the issue of envy. Although the evil eye is mentioned in Islam, the religion stresses the importance of seeking protection from God through daily supplications to the protector. Muslims are encouraged to take responsibility for their own actions and face their difficulties and challenges with patience. However, some families in Saudi society still perceive disability or illness as a result of the evil eye. They therefore resort to the use of folk therapy or spiritual therapy because they believe that these types of treatment remove disability or illness from their children. These views and attitudes can be found in different segments of society and various age groups. Belief in the evil eye and fear of envy is also responsible for the secretive nature of many Saudi families. Indeed, many Saudis are cautious in showing their success, happiness and achievements to the wider community for fear of envy: they do not want to become targets of the evil eye (ALSaif, 2003; Aoufi, 2011).

2.5.4 Authority of, and Obedience to, Males

Islam preserves women's dignity and their equality with men. Women are given the same rights as men to education, work, decision-making, community participation. Women are also entitled to inheritance from their father, husband or son and the preservation of their financial rights (Abunil,2003; Allam, 2010). Islam stresses the importance of protecting women and respecting their feelings, desires, and ideas. Islam also mandates men to be supportive of women and to be their custodians, so the father, brother or husband are responsible for fulfilling their needs (ibid.). However, a number of Arab countries, including KSA, are male-dominated societies where men take decisions on behalf of women. For example, some members of Saudi society control their women relatives by depriving them of further studies and work, forcing them to stay at home to raise children, denying them travel and community participation through the various media or preventing them from displaying their names on some media outlets (ALSaif, 2003; Guta & Karolak,2015).

Although such views and practices are limited to some people in Saudi society, they affect the rights of women and their role in society. The authority of, and obedience to, a man is one of the customs and traditions emphasised by some members of society and contrary to the Islamic religion (ALSaif, 2003). Islam stresses mutual respect between males and females and the right of freedom for women in various areas of life within the context of modest clothes and behaviour (Alalwani, 2011). Figure 2.4 shows the types of Hijab, head scarf, which is part of the modest clothing in some Muslim countries, including KSA. The figure shows that each country has a preference for a type of Hijab.

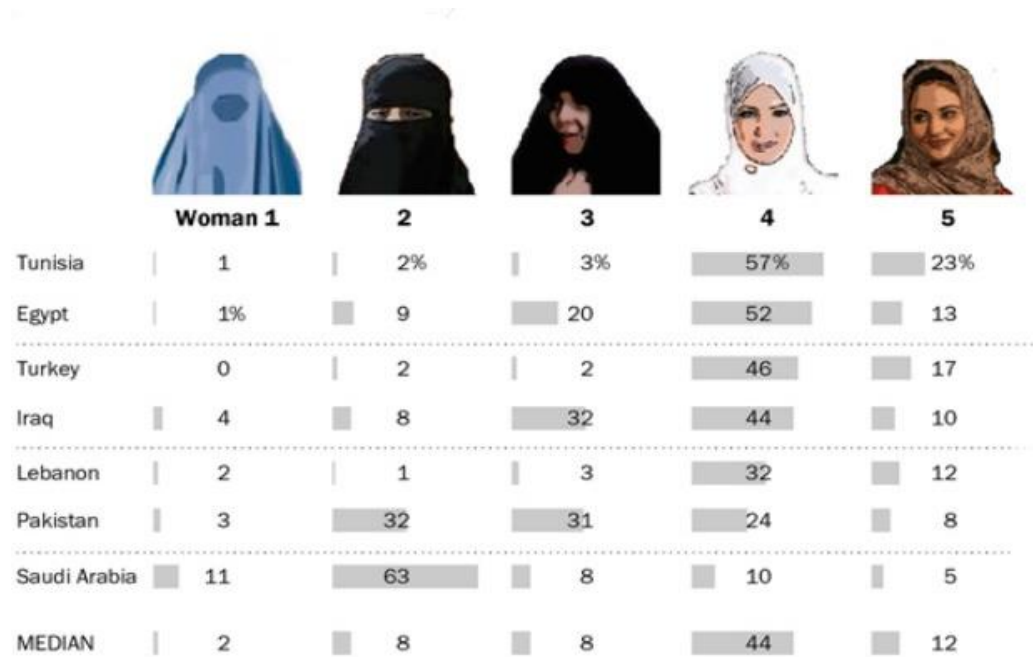


Figure 2.4 Types of Hijab in some Muslim Countries

<https://foreignpolicy.com/2014/01/08/survey-says-muslim-women-cover-your-hair-not-your-faces>

In the same context, men dominate women in Saudi society in their opinions of the wearing of the Hijab. Some men consider wearing Hijab to be part of customs and traditions, therefore, the women must wear the head scarf as a sign of obedience to men. However, this is an incorrect understanding and contrary to the teachings of the religion. Hijab is a religious and legitimate duty for women and they have the right to preserve it. They can also abandon it by their own will: this is between them and God and relates to their obedience to the religious teachings. They have absolute freedom in this case. Therefore, the wearing of Hijab is not linked to customs and traditions in Saudi society but to religious values (Al Msemery, 2011; Alturige, 2015; ALSoghair,2003).

The above examples show how some of the customs prevalent in Saudi society are in opposition to the principles of the Islamic religion. It is difficult for the Saudi government to intervene in such matters. However, the Saudi government is trying to educate members of society and find solutions to reduce the damage caused by such behaviours. Significant effort is put in educating Saudis, explaining the teachings of religion and developing awareness programmes through various media.

2.6 Education in the Kingdom of Saudi Arabia

2.6.1 Introduction to the Principles and System of Saudi education

Education in the Kingdom of Saudi Arabia since its beginnings is based on religious and social foundations consistent with the political orientations of the Saudi government. Education in KSA is a right guided by Islamic law. It is also the duty of the Saudi government to provide it to community members as much as it can. In addition, education in KSA is based on the principles of justice and equality in educational opportunities among citizens, whether male or female, people with disabilities, Saudis or non-Saudis, as education is available to all and free of charge at all educational levels (Alsaloum,1991; Hakeem, 2012). Also, the nature of education in KSA depends on gender separation as Article 155 stresses the importance of this separation between males and females at all levels of education in terms of school buildings and teaching staff, exceptions apply for preschools (Alasmrai, 2016).

Figure 2.5 shows the basic principles on which education is based in KSA. Religion is considered the most important of these principles and forms their basis. Politically, the government educates all segments within KSA or outside through foreign missions to other countries, e.g., the United States of America, the United Kingdom, Australia, Canada, France, Japan, China, in order to keep abreast of scientific developments in the service of Saudi society. Also, the education system in KSA is based on social principles that are compatible with religion and make it one of the foundations of the curriculum, such as national belonging and respect for all different religions and cultures (ibid.).

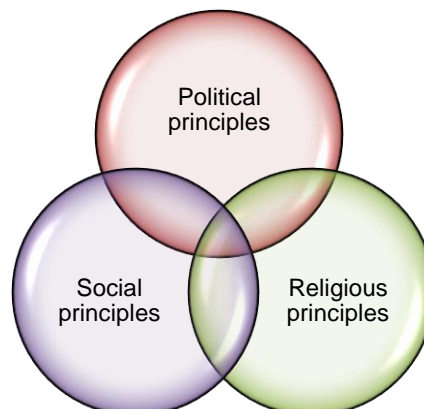


Figure 2.5 Principles of education in KSA.

Source: The author

The education system in KSA currently includes: (1) General education which consists of primary, intermediate and secondary schools; (2) Higher education which comprises universities and colleges of education and health; (3) Technical Education and Vocational Training which is made up of technical and technological institutes and technical training; (4) Adult Literacy that consists of education of older persons; (5) Special Education which includes

institutes for persons with disabilities, day care centres, rehabilitation centres (Jamjoom, 2012; Ministry of Education of Saudi Arabia, 2017).

Education in KSA is available in two forms: the first and more common form is “public”, where educational services are free. The second form is “private” where the students' parents pay the financial fees for their children to study in international schools or private universities where the studies are in English. These forms include all of the following education types: General Education, Higher Education and Special Education (Ministry of Education of Saudi Arabia, 2017). The next section provides a historical overview of the development of education in KSA. It also examines the area of special education which is relevant to the current study.

2.6.2 A brief historical overview of education in KSA

According to Alsaloum (1991), education began to grow and develop on a larger scale with the introduction of Islam. Islam is open to people of all races and cultures and with Saudi Arabia's education being based upon Islam it provided access to other civilisations which in turn helped to develop the quality of the educational system. The educational system in KSA before the start of formal education was based upon three types of teaching: Traditional, Turkish and Local education.

Traditional education consisted of Quranic lessons and Islamic teachings inside Masjed, delivered by Islamic scholars; it spread in Makkah and Medina, as well as in the North and South regions.

Turkish education started in Makkah and Medina which was supervised by the Ottoman government; it was taught in Turkish.

Local education was administered and funded by the parents of children and the lessons taught were fairly similar to traditional education regarding the teaching methods and curriculum.

In 1932, when King Abdul-Aziz Al Saud founded KSA, he strongly believed that the country would not develop to its full potential without enhancing education. He therefore placed a high importance on developing the education system in KSA. Accordingly, he established the “Knowledge Council” which contributed to the development of the first educational system of the country. This innovation led to the opening of the Saudi Scientific Institute, preparing for the first missions of students and establishing legislation concerning the new educational system. In 1950, the General Directorate for Scientific Institutes opened 312 primary schools, 14 elementary schools, 11 high schools, 4 secondary schools, 1 vocational school, 8 institutions for teachers, 6 schools to teach English and an evening class on how to use a typewriter (ibid.).

In 1953 the “Ministry of Education in Saudi Arabia” was established, marking a new beginning for modern education. King Fahd bin Abdul Aziz Al Saud, the first appointed Minister of Education, led the unprecedented expansion and modernisation of educational resources; he built many schools and established a number of educational administrations in different regions of KSA. He also encouraged students to move into higher education and missions (ibid.).

In 1958, KSA and other Arab countries agreed to a unified system of education composed of primary school (6 years), intermediate school (3 years), secondary school (3 years) and then higher education, such as a Bachelor’s degree, Master’s degree and PhD, as shown in Figure 2.6 (Saudi Arabian Cultural Mission, 2006).

Aqeeli and Humphereys (2012) explain that King Fahd has played a major role in the development of higher education in KSA, especially in the establishment of research chairs outside KSA in order to benefit from international expertise and implement it in the future internally. Four research chairs have been established to deal with Islamic studies abroad: King Abdul Aziz Al Saud Chair in 1984 at the University of California - Santa Barbara headed by Professor Stephen Humphereys; King Fahd Chair at Harvard University; King Fahd Chair at the College of Oriental and African Studies (University College London) in 1995, Prince Nayef Chair in Moscow in 1996. The first research chair in KSA at King Fahd University of Petroleum and Minerals was established in 1996 in the Department of Electrical Engineering. There has been an increase in the number of research chairs in several Saudi Universities: from 50 chairs in 2007 to 250 in 2011. This number continues to increase. King Saud University in Riyadh has the greatest number of research chairs: 124 on different topics (ibid.).

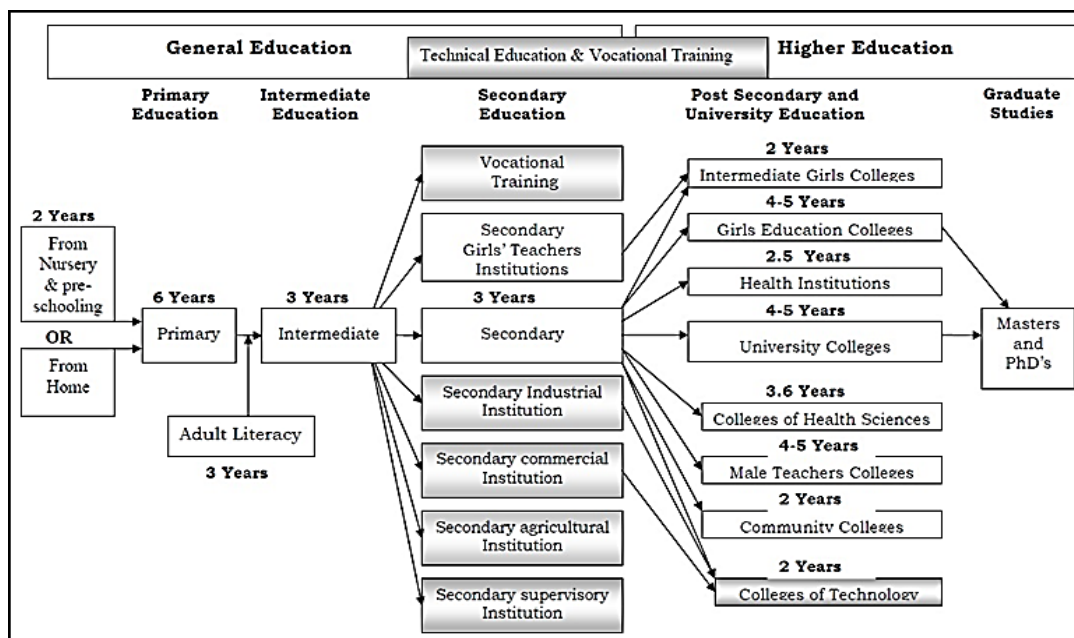


Figure 2.6. Education System of KSA

Source: Jamjoom (2012, p. 65)

Educational development was continued during the reign of King Abdullah bin Abdulaziz. In 2005, government policy focused on increasing universities from 8 to 30 public and 12 private ones, respectively, in different regions in KSA (Princess Nourah bint Abdulrahman University, 2018).

According to the QS World University Rankings (2016), KSA ranked first among Arab countries and ranked 37th worldwide regarding the quality of the educational system in 2016 and the stability of three Saudi universities was among the top 500 universities in the world; King Fahd University of Petroleum and Minerals was ranked 199th, King Saud University ranked 237th and King Abdulaziz University was ranked 303rd. According to the same organisation, these three universities occupied the first, third, and fourth ranks among the top 100 universities in the Arab world. Hamed, Zeadh, AlOtaibi and Metwally (2005) point out that KSA provides an allocation of a quarter of the size of the state budget for the education sector. It has launched outside scholarships to countries around the world in various disciplines. The number of scholarships for men and women currently exceeds 250,000. Also, this policy has the support of King Abdullah, who aims to develop education curricula in schools, aiming to provide update programmes, to improve the educational environment, which all help to create the best possible quality education (ibid.). According to Ministry of Education of Saudi Arabia (2018), the education sector is paying great attention to the Saudi government. Education allocations in the 2018 budget amounted to 192 billion Saudi Riyals, including the expenditure of Vision 2030 programmes and projects of 5 billion.

2.7 Special Education in the Kingdom of Saudi Arabia

Special education in KSA has been given importance by the Saudi government because of the instructions of the Islamic religion, which stresses the right of people with disability to live and be given their rights. According to the Basic Law of Governance (1992), Saudi policy makes it clear in Article 26 that the “State shall protect human rights in accordance with the Islamic Shari’ah” (p. 5), which promotes the concepts of justice and equality and the prevention of discrimination on any basis, including disability. Also, Article 27 of the Basic Law provides that: “The State shall guarantee the right of the citizen and his family in emergencies, sickness, disability, and old age, and shall support the social security system and encourage institutions and individuals to participate in charitable work” (p. 6).

Moreover, KSA has a global status, whether politically, economically and religiously, enabling it to support the field of special education. In fact, it has signed international conventions on the provision of assistance, the protection of the rights of people with disability, the provision of all facilities to them and their families and the sensitisation of society towards these groups. For example, each person was given an annual subsidy according to the severity of the disability with the provision of a driver and maid free of charge. The following are also provided free of charge: compensatory equipment such as wheelchairs, electric chairs, medical and regular medical beds, walking aids and chairs, audio and video aids such as medical headsets and

medical glasses, educational, rehabilitation and professional services, and many privileges within the community (AIMousa, 2010).

In addition, KSA seeks to follow policies of other developed countries, such as the USA, in dealing with people with disability. For example, KSA supports the application of the Individual Education Program (IEP) as a method and basis for educating people with disability in cooperation with their families. Related services include: speech-language and audiology services, psychological services, occupational and physical therapy, medical services. The country is also currently seeking to develop early intervention services, as they occur in the USA context. KSA follows some international laws such as: Individuals with Disabilities Education Act (IDEA), which ensures students with a disability are provided with Free Appropriate Public Education (FAPE) that is tailored to their individual needs. This law includes multiple pillars, including for example IEP and Early intervention (IDEA, 2017).

AIMousa (2008) argues that the historical differences between KSA and USA are huge in the field of special education. In KSA, education for disabled people was initially provided in regular schools and then separate day care centres and institutes. Some of these institutes have now been transformed into boarding schools. In contrast, in America, the education of the disabled began in residential schools and then switched to regular schools. Nowadays, the direction of special education in KSA is to return to regular schools through integration programmes.

The following section provides the historical background of special education in KSA. The focus is on the most important areas related to this study.

2.7.1 An overview of the history of special education

Special education in KSA can be traced back to 1952. At that time, some individuals inspired people with visual disabilities to learn Braille through a colleague who had learned its use in Iraq. As a result, they were able to master Braille and educate people who were blind (AISunbal, Alkhatib, Metwally & Nuraldin, 2004). In 1957, the educational authorities started evening classes attached to the College Arabic Language in Riyadh. In 1958, the Ministry of Education opened an evening school as the headquarters for the education of blind people and trained them in Braille. In the same year, King Saud bin Abdulaziz Al Saud visited the school and donated a new permanent headquarters located in Riyadh. The King's visit led to the allocation of more resources and the provision of further support and formed a catalyst for the development of special education in KSA. In 1962, the first management for special education was established and started its own special education for the blind, deaf and learning disabilities. It was separated in 1972 into three distinct special administrations for the three disabilities (AIMousa, 2008). In 1996, the "General Secretariat for Special Education GSSE" was adopted as a name and developed in order to serve as the government agency responsible for people with disabilities and their affairs. It is part of the administration of the Ministry of Education in KSA.

The GSSE has important roles including the identification of children with special needs from an early stage, the development of plans and construction of appropriate strategies for all disability categories, and the provision of educational and rehabilitation for people with disabilities enabling them to reach their best level according to their needs and abilities. Also, it provides sponsorship for various categories of disability: hearing disabilities, visual disabilities, learning disabilities, multiple disabilities, communication disorders, disturbed behaviourally and emotionally, autism, physical and kinetic disability (ibid.).

In spite of the major role played by the GSSE since its establishment in the service of special education in KSA, its current status in terms of the management of educational programmes and the issuance of official decisions that are in line with the nature of need requires more powers and administrative expansion commensurate with the size of services needed for people with disabilities in KSA. Therefore, this situation led to the decision of the Consultative Council to approve on the 18th October 2016 the establishment of a project called "Education System for People with Special Needs", based on Article (23) of the Council's Regulations. The Council also approved the second recommendation of the Committee for Education and Scientific Research, which provides for the establishment of an official and separate agency in the Ministry of Education especially for the education of people with disabilities (SABQ, 2016).

This development will contribute to the ministries' concerted efforts in the field of education for people with special needs. Currently, disabled people suffer because of the dispersion between the Ministries of Education, Health, and Social Affairs. This project will allow different parties to merge their efforts into institutional work and guarantee the provision of programmes, services, and activities for people with disabilities. It also favours the codification of procedures, measures, and policies that govern quantitative expansion and qualitative development in the field of special education (ibid.).

2.7.2 The reality of special education in the Kingdom of Saudi Arabia

Alkhashrami (2003) points out that KSA was one of the pioneers in the application of modern educational methods for school-age children with disabilities in Arab countries. Modern methods and techniques focus on individual differences within the framework of an education which is less restrictive and closest to mainstream culture. The Kingdom has made great strides toward moving people with disabilities from isolation to a normal school environment that has become able to accommodate the largest number of these people. The integration has resulted in a significant qualitative and quantitative shift in the education of children with disabilities in KSA. Alkhashrami (2003) explains that the educational integration in KSA targets two categories of disability children. The first category of children is already part of the regular schooling and benefits from its education but needs special education services such as gifted, learning disabilities, physically and motorically disabilities, visually impaired, and behavioural and emotional disorders.

The second category consists of children who are traditionally taught in special education institutes or special classroom attached to the regular school, but they need to be fully integrated with ordinary peers in regular schools such as the blind and the hearing impaired, learning disabilities, and autism (ibid.). ALkhashrami's points (2003) are confirmed by AlMousa (2010) who mentions that KSA is considered the first Arab country to implement educational integration in its schools on a scientific basis. This was considered a pioneering experience at the Arab level and it was called the "Saudi Model" by The United Nations Educational, Scientific and Cultural Organization (UNESCO), which praised this experience as one of the most successful experiences in the Arab world, which aimed to serve people with disabilities. Table 2.2 illustrates the timeline of educational integration in KSA.

Table 2.2. *Timeline of educational integration in KSA*

Year	Events
1984	The first successful integration experience was carried out in Hofuf, Eastern Region in KSA.
1989	The first integration of children with disabilities in the kindergarten stage was carried out in the kindergarten of King Saud University.
1995	The partial integration was implemented in Saudi schools.
1996	The inclusive educational integration was implemented in Saudi schools.

Source: Adapted from AlMousa (2010)

AlMousa (2010) explains that educational integration in KSA is implemented in two ways. The first method is that of partial integration, which includes enrolling students with special educational needs and separates them in special classes in the regular school, where they receive their education with each other in that class. The children have the opportunity to integrate with their regular peers in some extracurricular activities and in the school facilities. The second method is called inclusive educational integration, where students with special needs are enrolled in regular classes with their regular peers throughout the school day, with an emphasis on the availability of supporting programmes in each case of need, such as Resource Rooms programmes, Teacher-Consultant programmes and itinerant teachers programmes (ibid.). The Ministry of Education represented by the GSSE is interested in providing all kinds of educational and rehabilitation services that are needed by each person with disabilities in proportion to the type of disability and degree and type of services commensurate with their own abilities (AlMousa, 2008). Figure 2.7 shows the types of special education services in KSA.

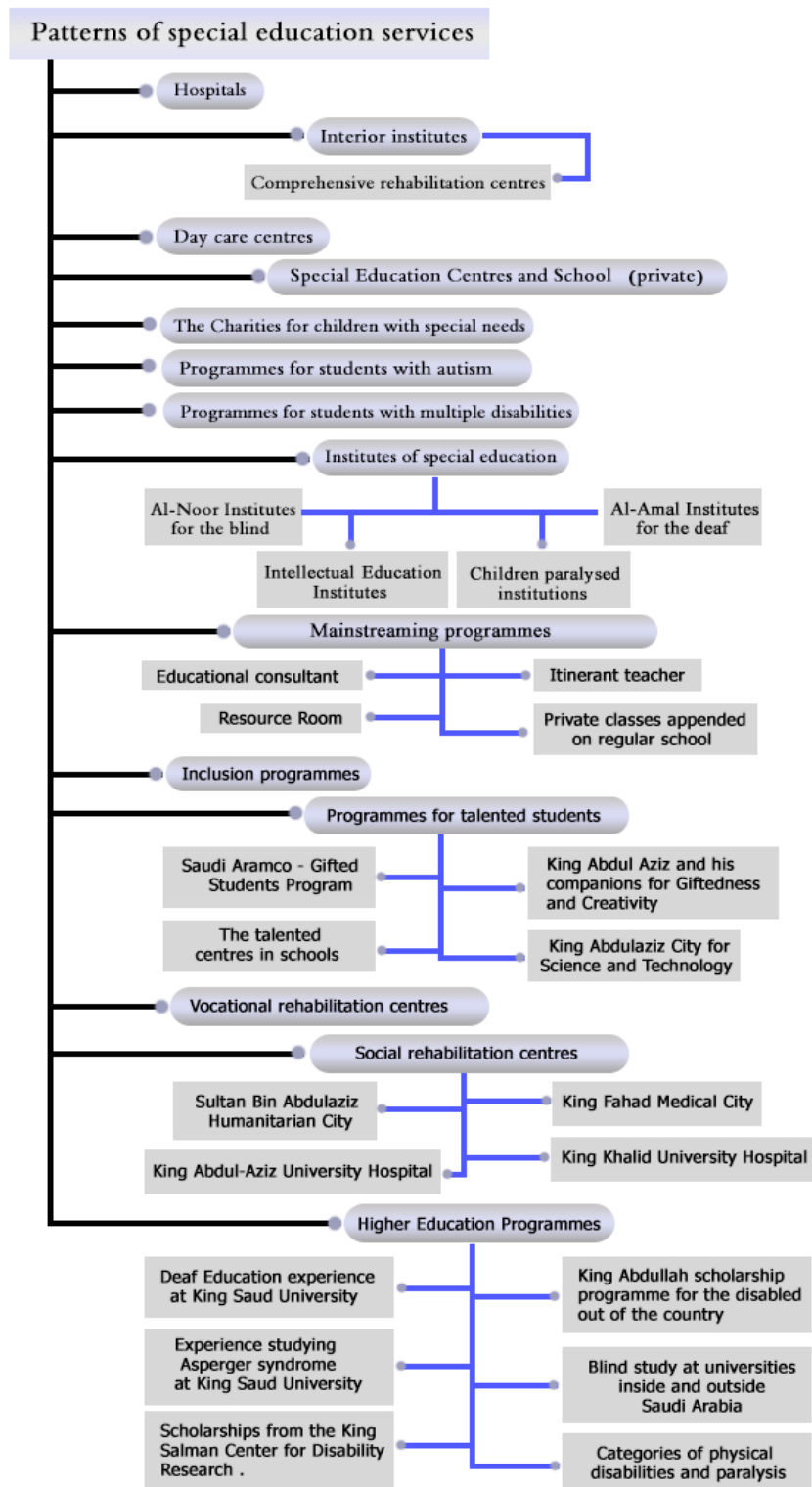


Figure 2.7 Types of special education services in KSA

Source: The author

Alrubiyea (2010) notes that the educational and rehabilitation services in special education are provided through several ministries and non-profit organisations or associations, in order to improve services and to meet the needs of the people with disabilities. These services are designed to allow people with disabilities to integrate into society and carry on with their daily lives. Four main government ministries have played a significant role in the organisation and application of the educational and rehabilitation services in special education: The Ministry of Education, the Ministry of Social Affairs, the Ministry of Health and the Ministry of Labour. The different ministries serve the different needs of the people with disabilities. For example, the Ministry of Labour and Social Affairs carries out rehabilitation and vocational and social training programmes for people with disabilities. The Ministry of Health provides health care services, disability prevention and medical rehabilitation, while the Ministry of Education is specialised in programmes and education for students with special needs (Almaghlooth,1998). However, there is an absence of collaboration between the Ministry of Media and the other ministries. According to BinSadiq (2005), the "Disability Code" in KSA Article (21) stresses that the Ministry of Media should coordinate with other ministerial bodies concerned with caring for disabled individuals in order to increase awareness of disability in Saudi society.

The section below provides a general explanation of the most important legislation related to persons with disabilities in KSA.

2.7.3 Legislation on special education in the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia is based on Islamic law, which emphasises human rights and dignity in life, especially for people with disabilities, enabling them to lead a dignified life and to take advantage of the various human services and social welfare. Therefore, KSA has signed international laws and conventions that ensure the right of the disabled to live. Also, KSA has sought to establish various local laws and legislation (Aldabas, 2015). BinSadiq (2005) explains the kinds of legislation applied in KSA. The first decree, released in 1982, emphasised the operation of the graduates of the institutes for the blind in the right jobs for their rehabilitation and their support. In 1987, the Legislation of Disability was the first piece of legislation enacted for people with disabilities in KSA. This law provided a guarantee that the disabled would have equal rights to those of other people in society. Moreover, it defined disabilities and described programmes for prevention and intervention, as well as defining the procedures for assessment and diagnoses to determine eligibility for special education services. In addition, the government issued Resolution No. 479 in 1995, which confirmed that the managers and agents should be specialists in special education. Furthermore, Resolution 27/872 was released in 1997 to approve the opening of the classes for autism and multiple disabilities in the institutes of mental disability in Riyadh, Dammam and Jeddah (ibid.).

Maajeeny, Althabeti, ALKhuraje, ALQaddoumi and Huwaidi (2009) show that Royal Order Resolution No. 7 / B / 12814 in 1999 stressed the need to empower people with special needs to study at universities and colleges of the Kingdom and provide the financial support necessary. According to the Prince Salman Center for Disability Research (2004), The Disability Code was passed by the government in 2000; under Ministerial Resolution No. 224, people with disabilities have the right to access public services provided by all public agencies including making modifications to public attractions and services in order to make them available for the individuals. The law included 16 items to determine the most important government agencies in the state, which are responsible for providing services to people with disability in a number of areas, health and education and rehabilitation, labour and social, cultural and sports fields, the media, the creation of public transport for the transfer of the safety and security of persons with disabilities, home and daycare and the provision of technical assistance devices.

According to the Ministry of Education of Saudi Arabia (2002), the Rules and Regulations of Special Education Programs (RRSEP) were established in 2001. This outlines clearly the privileges and policies that determine the rights of students with disabilities to have access to special education services. Moreover, the regulations highlight key groups of students with various disabilities such as blindness, deafness, hearing impairments, learning disabilities, and autism. Based on the nature of the disability, the government evaluates whether a student is entitled to an individual or a joint special education services. Through this law, every student with special needs is entitled to the transition education and associated services, early intervention, and Individual Educational Programs (IEP). Interestingly, RRSEP also describes the people who are participating in the planning of the IEP.

In spite of the review of the laws and legislation in KSA in the field of special education and all the concerns of people with disabilities and their families to preserve their right to life as that of other members of the community, there is a clear absence of strict laws imposed by the government on everyone in the community and the various ministries regarding the provision of services to disabled individuals. In reality, the authorities have failed to ensure that the laws are enforced. To-date, the relevant ministries have overlooked the importance of providing early intervention services for children with disabilities, despite being aware of the existence of such legislation.

2.7.4 Incidence of Down's syndrome in the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia has a growing prevalence of DS cases in all ethnic groups and geographical regions. In fact, KSA is the country with the highest registered number of DS cases. Niazi et al. (1995) showed that the incidence of DS during the period 1982 to 1991 was 1 in 554 live births (1.81 per 1,000) for the Saudi population and 1 in 547 live births (1.83 per 1,000) for expatriates living in KSA. These figures suggest that there was no significant relationship between the occurrence of DS and the ethnic background of parents in KSA. According to national statistics, two to three children are born with DS every day in KSA (AlMalaq, 1999). In comparison, the prevalence of DS in other Arabian countries is approximately 1.93–3.5 per 1000 live births, while the overall incidence worldwide is approximately 1.25–1.67 per 1000 live births (Alhusaini, Al-Walah, Melam and Buragadda, 2017). The number of cases in the Arab world is around 250,000; a much larger number compared with other countries such as the UK and US which recorded between 800 and 1000 cases of DS for all-natural births (AlMalaq, 1999).

According to the Centre for Arab Genomic Studies (2013), the higher incidence in DS in KSA has been attributed to a number of factors including the widespread occurrence of consanguineous marriages; such marriages have reached levels of 66.7% of all marriages in KSA. This has been confirmed by AlSalloum et al. (2015) who found that congenital and genetic disorders are responsible for a major proportion of infant mortality, morbidity, and disability in countries in the Middle East. Indeed, the authors emphasised that in KSA, some factors, such as high maternal and paternal age and a high consanguinity lead to a relatively high risk of producing offspring with congenital anomalies. However, ElMouzan, AlSalloum, AlHerbish, Qurachi and AlOmar (2008) observe that there is no relationship between consanguineous marriage as first cousins and DS. Narchi and Kulaylat (1997) show that another factor linked with the increasing number of DS cases in KSA is the mother's health. The incidence of DS is higher in infants of diabetic mothers compared to those of non-diabetic mothers (3.75 per 1000 v 1.36 per 1000). Similarly, Al-Gazali, Hamamy and Al-Arrayad (2006) confirm that one of the most important factors causing chromosomal disorders is the high prevalence of hemoglobinopathies, glucose-6-phosphate dehydrogenase deficiency.

In addition, religious and cultural factors play a significant role in the large number of children born with DS. In KSA, abortion is prohibited when DS is identified during the early stages of pregnancy (AlMalaq, 1999; Niazi, et al., 1995). Weijerman and De Winter (2010) point out that the "prevalence of DS depends on several socio-cultural variables. In countries where abortion is illegal such as the United Arab Emirates, its prevalence is higher. Conversely, in France, DS prevalence is low, and this is probably due to a high percentage of DS pregnancy terminations" (p. 1445).

2.7.5 Early Intervention for Down's syndrome in the Kingdom of Saudi Arabia

The government of KSA has put in place various regulations to ensure that special services are developed for early intervention amongst children with Down's syndrome. The initial step involved enacting disability legislation to ensure that people with any form of disability enjoy the same rights as other members of society (Ministry of Health Care in Saudi Arabia, 2010). This legislation has Articles describing programmes for necessary intervention and ways of helping to prevent and overcome disability. It describes the procedures that should be followed in the diagnosis and assessment to determine the level of disability and special educational needs.

According to the Prince Salman Center for Disability Research (2004), the government ensures EI through the use of public agencies in the implementation of the facilities designed to provide training and rehabilitation services. The services include the free provision of appropriate medical services, as well as social services, psychological services, rehabilitation services and educational services. Merza (2013) points out that there are many initiatives and pilot programmes in the Ministries of Health and Education, while some private institutions and charities aim to provide early intervention services for people with disabilities for the different age groups. For example, some of the initiatives are shown in Table 2.3.

Table 2.3 Initiatives in the ministries of KSA

Ministry	The Initiatives
Health	<ul style="list-style-type: none"> - Epidemiological surveillance system for infectious diseases. - Complete necessary vaccinations for children. - Health care for pregnant women and early detection services. - Early screening programmes before marriage.
Education	<ul style="list-style-type: none"> - Establishment of early intervention and diagnosis center in Riyadh in 2005. - Quantitative expansion in the development of kindergartens. - Orientation to make kindergarten compulsory. - Teacher training in early detection and intervention skills.
Private institutions and charities	<ul style="list-style-type: none"> - <u>Establishment of specialized centres for Down syndrome:</u> - Centre for children with DS in Riyadh. - Ain Alfaras Daycare Center. - National Center for Early Intervention for DS. - Al Nahda Women's Charitable Society in Riyadh. - The Voice of Down Syndrome Society in Riyadh. - Down Syndrome Charitable Association (DSCA).

Source: Compiled by the author, adapted from Merza (2013)

Despite the existence of such initiatives and encouragement from the government in this regard, there are some shortcomings directly affecting early intervention services in KSA. For example, Khamis (2007) mentions that public agencies should ensure that EIS are in place, as it is evident, they have not been implemented as expected. Merza (2002) compared the efficiency and level of EIS available in KSA with what is currently applied in others countries as the USA. She found that these services were still in the initial stages and progressed in a very narrow and random, unorganised or deliberate way. This lack of efficiency and successful progress is due to the fact that the activation of such services is not based on scientific research or firm evidence, but purely on personal judgments.

According to Merza (2002), there is no formal organised effort to support the training of families of children at risk of developmental delays because the formal adoption of family-centered programmes has not yet been formally adopted. Her study also points out that the EIS available represent therapeutic, social and medical services, and are not directed to meet the individual and actual needs of the parents, or to raise awareness of their legal, social, educational and cultural rights. Also, the services do not include any kind of educational information. Such information may be needed only by children or their parents. Materials provided by specialists and doctors are limited to health information and the basic needs of the child, such as nutrition, hygiene, immunisation, and the date of the first visit after the child leaves. Home-based programmes initiated by some institutions have also targetted the elderly and chronically ill, rather than the young children at risk.

Sijeeni (2016) argues strongly there is a lack of coordination and cooperation among stakeholders who provide care in KSA. Disabled people and their families are often unable to access social services support networks, which vary in quality, sometimes ineffective and geographically distributed, limited to legislation and policies only. She also stressed the need to deal with families to provide planning for mothers and children with DS and to formulate recommendations for strategies to help them care for children. Similarly, AL-Zaalah et al. (2015) confirmed that "the access to early intervention services in Saudi Arabia is still limited even in the major cities, e.g., Riyadh, Jeddah and Al-Dammam. These services are provided only by the private sector, which does not meet the increasing demand, leading to heavy financial problems for families"(p. 241).

Al-Aoufi (2011) points out that the vast majority of studies carried out on early intervention in KSA focus on results and the effectiveness of the services for children, which indicates that the respective researchers have, in their studies, overlooked the kind of support parents actually need. Therefore, the successful implementation of interventions for families requires consideration of their needs and feedback from them with regard to all services provided for their children; parents also need to have an opportunity to experience forms of participation with the official agencies for EI. In addition, Merza (2013) asserts that early intervention services, which are centralised in urban areas, are a major factor in special needs children and their families being denied services in more rural areas, such as in villages. This has led to an increase in demands for action amongst families on social media and other forms of media; they put pressure on the government to expand EIS and develop it to their expectations in all regions of KSA.

2.8 Media in the Kingdom of Saudi Arabia

2.8.1 A brief overview of the emergence of media

Media in KSA first appeared in 1924 when King Abdulaziz Al Saud ordered the establishment of the first newspaper called Umm Al Qura in Mecca to be a link between the government and its citizens. This newspaper was publishing all the decisions issued by the government and statements concerning the Saudi citizens (ALHarthy, 1999). In 1949, the first radio station was established in the city of Jeddah. The radio was called Radio Makkah and was heard in the western region of KSA only. King Saud bin Abdulaziz (Crown Prince at the time) first proposed the plan of a radio station to his father, King Abdulaziz (ALKhatib, 2016). The King agreed on its implementation in order to connect the Kingdom with the outside world and to disseminate culture and knowledge in the country. In the mid-fifties, there were significant improvements in the provision of radio channels. In 1955, the name of the radio was changed to the General Directorate of Radio. In the same year, the Directorate General of Press and Publishing was established and the General Directorate of Radio was merged with it. In 1957, the first modern broadcasting station in KSA became the largest radio station and a second radio station was established in Riyadh (ibid.). In 1967, a third radio station was set up in Dammam to cover the entire Arabian Gulf region (ibid). With the increasing interest in media locally and internationally, King Faisal bin Abdulaziz issued the Royal Decree in 1962 to transfer the Directorate General of Press and Publishing to the Ministry of Media to serve as the general supervising authority of the various media. The first television broadcast in KSA was in 1962 in the reign of King Faisal bin Abdulaziz who wanted to introduce TV programmes for the purpose of innocent entertainment and global communication. In 1976, there was a permanent switch to colour television (ALHazmi, 2002; ALHarthy, 1999; ALKatib,2002). In 2003, the Cabinet decided to amend the name to become the Ministry of Culture and Information. This is still the name of the body in charge of media. The Ministry of Culture and Information is responsible for the implementation and follow-up of regulations and media policy. It is also responsible for all means of communication and print, audio and visual media. It works in the interest of the public (ibid.).

Al-Ahmad (2014) stresses that the policies related to the media in KSA are based on respect for the rights of individuals and groups. The policies also support objectivity in the presentation of facts, distance from exaggerations and rhetoric and appreciation of the honour of the word. ALOtaibi (1994) links the media policy in KSA with the principles of the Islamic religion, which emphasises freedom of expression. The religion endorses the importance of the word in general. Free expression is required if it is based on truth and Islam has defined it as the "kind word". Freedom of expression is forbidden in Islamic teachings when it is motivated by falsehood or is aimed at ridicule or mockery of human beings. That is, Islam supports freedom of expression only when it is based on true premises; the false word is described as the "malicious word".

According to the Annual Report of the Arab States Broadcasting Union (2012), the Arab region witnessed a tremendous development in the nineties through the emergence of satellite channels in Arab countries, which in some ways led to the collapse of geographical borders. News and images could be shared between the Arab countries and the world. Despite the advantages offered by satellite channels, some Arab communities have criticised these means of communication and consider them as one of the causes of the moral disintegration of society. For a long time, Saudi society has relied on the traditional conservative media. However, the introduction of the Internet was a turning point for KSA and changed the media world from traditional to modern, based on technology, speed and transparency (ibid.). ALShobaili (2015) explains that the new electronic and social media has contributed to Saudi society being more open to the world. The new means of communication have also changed the censorship standards imposed on traditional media and brought about political transformations. Saudis value the interactive individual communication which transcends time and space. ALShobaili (2015) also argues that the new media has influenced the paper press in KSA, which is struggling to survive. The print press has had to create electronic editions that are not cloned from their paper editions, in order to keep pace with modern transformations in the media and also be safe from liquidation.

2.8.2 Social media in the Kingdom of Saudi Arabia

According to Ministry Saudi Arabia's Communications and Information Technology Commission (2016), the Internet first appeared and started to grow in the Kingdom in 1994 when educational, medical and research institutions were given internet access. It was then opened to the wider community, with public access to the Internet in 1999. When it first appeared, a massive electronic revolution took place in society and across institutions. This helped the internet to spread; it began to be used in all fields, especially in the areas of telecommunications, technology and media. As a result, the number of internet users in KSA in December 2000 had reached around 200,000. By 2013, this number had increased to 16 million users (ibid.). According to the report of the General Authority of Statistics (2017), the Internet is the most used by Saudi families compared with television and newspapers and magazines. A study entitled "New Media in Saudi Society, Reality - Impact - Ways of Dealing" was recently 2017 published by the Institute of Research and Advisory Studies, King Khalid University. The study sample, randomly selected electronically, consisted of 1388 Saudi users of social media, with 48% men and 52% women. The results showed that 89.5% of users of social media in KSA are young people. The age group who used social media most often were between 25 and 34 years, followed by the 18-24 age group (AIMnatiq, 2017).

Dulaimi (2011) notes that the most prominent characteristic of social media in KSA is its rapid development and extensive utilisation. Nowadays, social media is widely used by members of Saudi society and in government sectors. It is closely linked to smart devices and the dramatic increase in their use over recent years. Social media is one of the primary sources and channels for the rapid transmission of the latest news and events.

According to Global Media Insight (GMI) (2018), the reason for the increase in social media usage in KSA is the high rate of smartphone ownership. In addition, 84% of Saudi nationals live in cities, where the adoption of mobile technologies has been much faster than the rest of the nation. Also, cities in KSA offer the ease of superfast internet connections. Table 2.4 summarises the latest statistics on the use of social media in KSA for 2018.

Table 2.4 Saudi Arabia social media statistics 2018

Summary number and percentages of users		
Total Poulation in KSA	33.25 million	100%
Active internet users	30.25 million	90.98%
Active social media accounts	25.00 million	75.19%
Active Mobile social accounts	18.00 million	54.14%
Top Active social media platforms		
Youtube	23.61 million	71%
Facebook	21.95 million	66%
Instagram	17.96 million	54%
Twitter	17.29 million	52%
Google+	10.64 million	32%
Top Active social chat Apps & Messengers		
Whatsapp	24.27 million	73%
Fb messenger	13.30 million	40%
Snapchat	12.97 million	39%
Skype	7.98 million	24%

Source: Adapted from GMI (2018)

Kuppusamy and Nithya (2015) explain that KSA is at the forefront of all Arab countries in terms of its internet use, especially the use of social media, after the United Arab Emirates. In addition, the use of social media in KSA is increasing very rapidly. In response, there has been a definite trend in recent times for researchers in various scientific fields to turn their attention towards the impact and the role of social media in Saudi society. Figure 2.8 shows the types of research on social media in KSA.

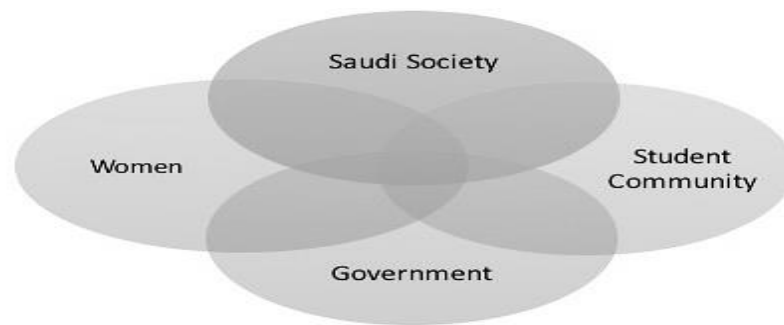


Figure 2.8 Types of research on social media in KSA

Source: Adapted from Kuppusamy and Nithya (2015)

The above paragraphs show that social media is widely used by all segments of Saudi society. Kuppusamy and Nithya (2015) argue that many researchers have addressed the role of social media in Saudi society from four main perspectives: (1) student community, for example, the benefits of social media in improving students' education and the use of those methods in the education process; (2) government, for example, reviews of the role of social media in increasing unity and information sharing and novelty, between government ministries, society and/or business; (3) women, for example, some studies have examined how through social media women have been allowed to participate in sports activities; (4) Saudi Society, for example, studies have examined the economic, social and cultural changes and transformations faced by Saudi society as a result of the revolution in the emergence of social media. However, Aifan (2015) argues that there is still a clear lack of research on the use, importance, and impact of social media in the education domain.

Therefore, there is a scarcity of studies that examine the role of social media in supporting people with disabilities and their families and that assess the effectiveness of these methods in meeting their needs and demands. Accordingly, this study seeks to fill this knowledge gap and address the role of social media in special education based on the views of parents and teachers who have experience with these means of communication.

2.9 Chapter Summary

This chapter provided the context for the current study by giving an overview of Saudi Arabia's position in the world in terms of its geographical, economic, religious, social and educational situations. The above sections provide essential information in understanding and interpreting the data gathered from the fieldwork. As suggested above, the Saudi context is different from the Western one in terms of cultural practices and beliefs, and the sensitivity of religious issues. This chapter also shows the current reality of the field of special education in KSA and the general trend in adopting integration at the expense of early intervention. The differences between Saudi society and the other societies that have been studied so far are highlighted in the next chapter which provides a review of the most significant literature relevant to the current study and used in the discussion chapter.

Chapter Three: Literature Review

3.1 Introduction

This chapter reviews studies that are of direct relevance to the current research. It focuses on three main topics. The first topic relates to DS: the discovery of the condition, its causes and characteristics. The second topic is early intervention: its description, significance to children with DS and their families and the most important models through which these services are provided to individuals with special needs, including people with DS. The third topic relates to social media: its definitions, emergence, characteristics, benefits and the difficulties and challenges faced by its users. The present research will draw on studies on these three topics in order to explore the role of social media in supporting parents and teachers of students with DS.

3.2 Down's Syndrome (DS)

3.2.1 Overview of Down's syndrome

Down's syndrome is a genetic disorder caused by the presence of all or part of chromosome 21 (Hu, Feng, Lazar & Kumin, 2013). Also, it is the most frequent genetic cause of learning disability and is associated with particular difficulties with language and communication. It is not a disease (Burgoyne, Duff, Clarke, Buckley, Snowling & Hulme, 2012). Antonarakis and Epstein (2006) point out that DS is associated with learning disabilities and congenital heart defects. The condition was initially labelled "Mongolian" by John Langdon Down, the British doctor who first described this syndrome in 1862. He thought that the children born with the syndrome had facial features especially in the angle of the eye similar to the Mongolian race and therefore named them in this way. Beliefs that DS was linked to race continued. In 1959, Down discovered that this condition was due to the additional version of chromosome 21. The term *Mongolian* was gradually replaced by *Down's syndrome* but the former term is still used from time to time. The change in appellation was brought about because of official claims from a distinguished group of genetic experts at the "Sipa Symposium" in 1967, who stressed the importance of not using phrases with racist connotations. They emphasised the importance of switching to the term DS (Conor, 1999). Roizen and Patterson (2003) mentioned that the term DS became more widely used in the USA and the UK. Children with DS have physical features and characteristics that can be distinguished from other learning disabilities. Some common physical symptoms include smaller-than-average head and facial features, flat face and nose, eyes that are slanted up, short fingers and hands, weak muscles (Dey, Bhowmik, Chatterjee, Sinha, & Mukhopadhyay, 2013; Roizen, Magyar, Kuschner, Sulkes, Druschel, van-Wijngaarden & Hyman, 2014). There are also some medical and health issues that affect such individuals, for example, congenital heart defects, gastrointestinal issues, coeliac disease, thyroid conditions, leukemia, upper respiratory tract infections, ear problems, eye defects, atlantoaxial instability, dental issues, podiatric issues, skin and hair issues, sleep apnea and Alzheimer's

disease (Bull, 2011; Dierssen & Torre, 2012; Raut, Sriram, Yeoh, Hee, Lim, & Daniel, 2011; Steingass, Chicoine, McGuire & Roizen, 2011; Vis, De Bruin-Bon, Bouma, Huisman, Imschoot, Vaxn den Brink & Mulder, 2012). Furthermore, children with DS also suffer from delayed muscle development due to stress and poor muscle growth (Hernandez-Reif, Field, Lergie, Mora, Bornstein & Waldman, 2007). Also, they show several orthopaedic anomalies including bone deformity of the forefoot, flat foot, isolated calcaneal valgus, knee valgus and pronated flat foot (Concolino, Pasquzzi, Capalbo, Sinopoli & Strisciuglio, 2006). Children with DS are at risk of thyroid disorders and other body glands disorders, which appear in the prevalence of obesity, which is one of the most important problems facing parents, especially in the child's late childhood (Magge, O'Neill, Shults, Stallings & Stettler, 2008; Melville, Cooper, McGrother, Thorp & Collacott, 2005). Figure 3.1 summarises the main physical and health characteristics of people with DS.

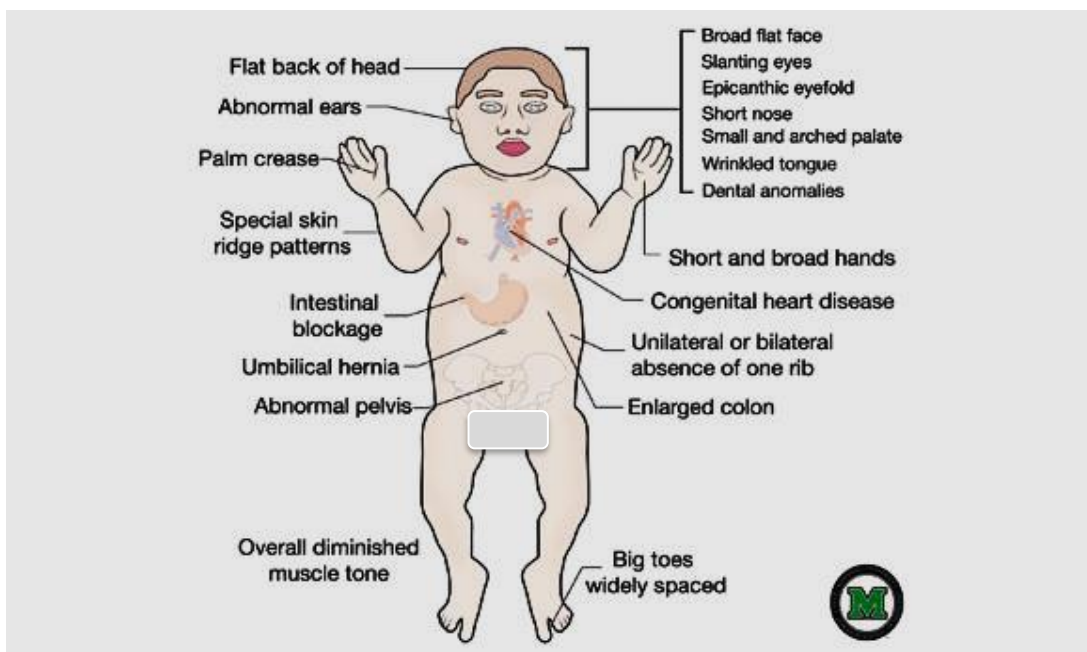


Figure 3.1 Physical and health characteristics of people with DS

Source: <http://www.arabnews.com/saudi-arabia/news/827381>

Fidler (2005) points out that

the wealth of research on early development in Down's syndrome may be attributed to the higher incidence of Down's syndrome than that of other genetic syndromes, as well as technological advances enabling early identification of Down's syndrome. Since the late 1960s, it has been possible to screen pregnant women for Down's syndrome via amniocentesis and karyotyping of fetal cells. This stands in contrast with the delay of diagnosis often seen in other genetic disorders, for example, Williams syndrome. (p. 87)

Sherman, Freeman, Allen and Lamb (2005) argue that around 6% to 10% of DS cases are caused by an error in spermatogenesis. Maternal non-disjunction can be due to age, alcohol consumption, maternal irradiation, fertility drugs, oral contraceptives, spermicides, parity, and low socio-economic status, although the effect of some of these factors have not been proven.

Bull (2011) mentions that when evaluating a newborn with DS, the first step is usually a careful review of the family history, as well as prenatal information, if studies are carried out on the fetal chromosome. Therefore, Bull (2011) states that “previous children born with trisomy 21 or developmental differences or pregnancies that ended in miscarriage may be significant clues that a family may carry a balanced translocation that predisposes them to have children with trisomy 21” (p. 395). Bull also notes that DS may be inherited although this is rarely the case. Rodríguez-Hernández and Montoya (2011) argue that DS is caused by an extra copy of chromosome 21 in each of the body’s cells. It is a chromosomal accident, dissociated from anything the parents may have done before or during the pregnancy and it is only very rarely inherited. Heywood, Mills, Wang, Hogg, Madgett, Avent, & Chitty (2012) agree that the cause of DS is a genetic accident, occurring at the time of conception. It therefore cannot be attributed to parental factors; thus, the exclusion of hereditary factors is emphasised.

According to Rodríguez-Hernández and Montoya (2011), there are three types of DS and these are all caused by different factors, as shown in Figure 3.2. The first type is **Trisomy 21**, which is due to one of the parents, through non-disjunction, giving two of chromosome 21 to the sperm or the egg instead of one. It gives the child an extra chromosome 21 in every cell. The reasons behind non-disjunction are as yet unknown and this type of DS is not inherited, which accounts for 95% of cases, so there is very little chance of another child in the family being affected. The second type is **Translocation**, which accounts for about 4% of cases of DS. where the additional chromosome 21 is joined with chromosome 14; meaning that there are 46 chromosomes instead of 47. The difference here is that one of the chromosomes is larger since it carries an additional chromosome. This type of DS is in fact inherited and there is the chance of it reoccurring in a sibling. This would contradict Heywood et al.’s (2012) view that DS is not inherited. The third type of DS is **Mosaicism**, which happens when there is a mixture of two types of cells, some containing the usual 46 chromosomes and some containing 47. Those cells with 47 chromosomes contain an extra chromosome 21. This type is the least common of DS and accounts for only about 1% of all cases.

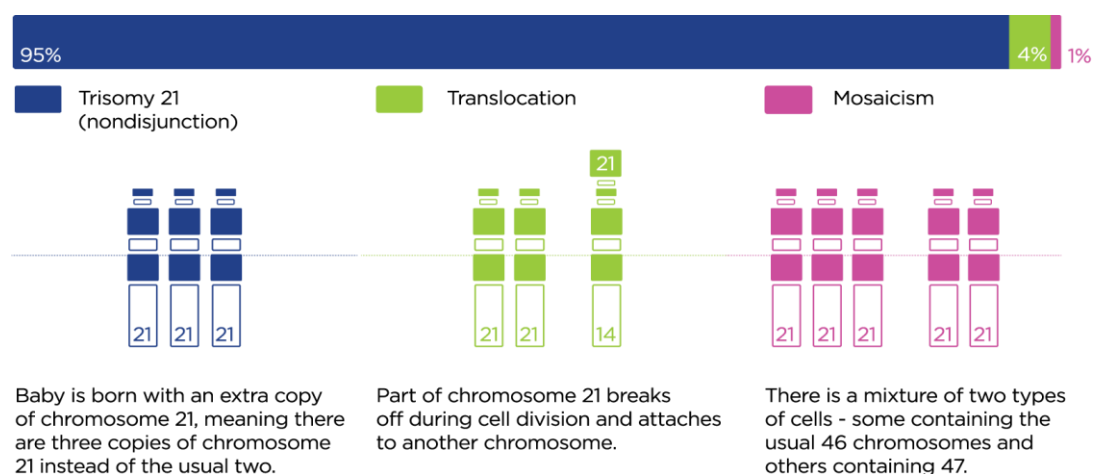


Figure 3.2 Types of Down's Syndrome

Source: <http://www.saut.org.sa/types-down-syndrome-incidence>

3.2.2 Developmental profile associated with Down's syndrome

Children with DS tend to be less stable and slower learners in the areas of development compared with their peers. However, not all areas are affected alike (Wishart, 2001). Buckley and Bird (2001) explain that there is a specific pattern of cognitive and behavioural features that are observed among children with DS that differs from that seen in typically developing children and children with other causes of learning disability. They refer to this pattern of characteristic strengths and weaknesses as a “developmental profile”, as shown in Figure 3.3. The weaknesses, in this case, are based on the non-verbal mental age which is defined by an application of nonverbal intelligence tests to children such as puzzles or copying designs or patterns in the *Personal Power*. This, in turn, helps professionals and parents to understand how to develop all skills for children with DS, use innovative teaching methods and applying treatments more effectively (ibid.).

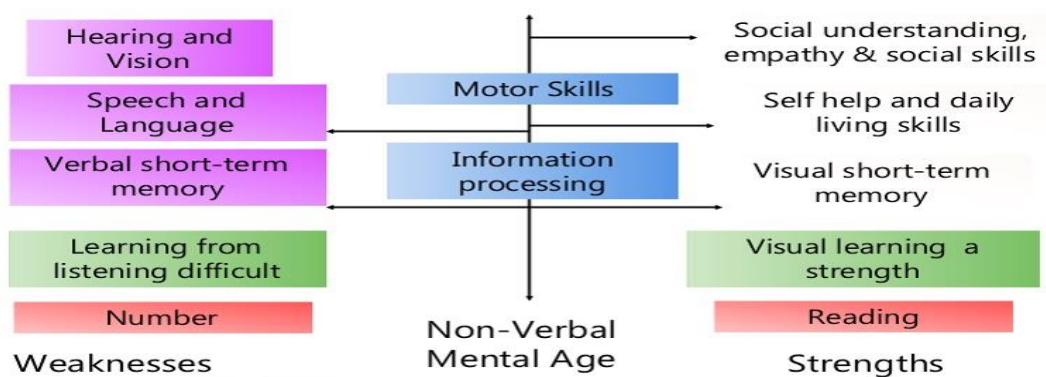


Figure 3.3. Typical profile associated with DS

Source: Down Syndrome Foundation of Orange County (2015)

Social interaction skills, empathy and visual learning by observation are among the most important positive points shown by children with DS, despite individual differences among members of this group, depending on the nature and severity of the disability (ibid.). According to Jiar, Xi, Satria and Yahya (2012), interactive social skills are the relative strength of the children with DS, most of whom make eye contact, smile and interact by cooing and babbling during the first months. Freeman and Kasari (2002) found that most children with DS showed relationships with peers that met the expectations of real friendships. Fidler, Most, Booth-LaForce and Kelly (2008) argue that

Down's syndrome may show emerging relative strengths in the area of social orientation and engagement in early development. This area may grow with greater competence than other areas of development, including other aspects of social-emotional development such as emotion regulation. (p. 218)

However, a significant delay in the interactive social skills can be observed in the first year of life, pre-school age, such as socially sensitive and understanding non-verbal signals of emotions, such as facial expressions, tones of voice, and body language. In addition, although the children with DS show sympathy during social interactions with their peers, they face the challenges of language and communication. They cannot explain their feelings or negotiate in social situations with their peers, potentially leading to other psychiatric problems such as anxiety and a sense of failure in social communication (Buckley & Bird, 2001). Wishart, Cebula, Willis and Pitcairn (2007) explain that children with DS are often perceived as highly social children. However, their research demonstrates that these children's socio-cognitive understanding may limit their ability to socialise with others.

Children with DS have been found to be stronger visual than auditory learners. Hence, there is a need to incorporate practical, kinaesthetic and visual approaches in their learning. This involves making use of appropriate materials and visual resources (Down's Syndrome Association, 2002). Also, Buckley and Bird (2001) explain that the visual short-term memory and visual processing are relative strengths for children with DS. This means that children with DS may be thought of as visual learners and teaching should be supported with visual materials. However, they often have visual problems such as myopia, refractive error, farsightedness, astigmatism and soft focus. 80% have a double focus at close distance to 25cm (All Party Parliamentary Group on Down's Syndrome [APPGDS], 2012). Also, children with DS find it difficult to process information from several sources at the same time (Sacks & Buckley, 2003). Therefore, learning amongst children with DS is usually full of inconsistencies compared to children who develop typically. There is a need to revisit the learning materials and more often repeat what has been taught until the learning has become embedded in their minds. As such, for children with the condition to learn successfully, they should be treated as learners who have the potential to progress and who deserve respect. Also, they need to adopt a multi-modal curriculum during their learning to develop their skills (Fidler, Hepburn, Rogers, 2006; Fidler & Nadel, 2007; Sacks & Buckley, 2003).

Moreover, children with DS tend to suffer from physical problems, such as poor physical stamina, motor difficulties, or hypermobile joints. Buckley and Bird (2001) point out that the gross and fine motor skills of children with DS are usually delayed but can improve through practice. Tudella, Pereira, Basso and Savelsbergh (2011) mention that DS children perform the same motor developmental sequence as their typically developing peers but take more time to master the skills. Some of the children can master considerable skills in sports, dance and gymnastics.

In addition, communication difficulties tend to affect how children learn as this involves the student receiving knowledge and expressing the received knowledge (ibid.). Abbeduto, Warren and Connors (2007) explain that almost all children with DS have some form of difficulty with speech; they exhibit grammatical and syntactical weaknesses in their sentence structure. Also, they demonstrate slow development in receptive and expressive language. However, most of these children have a more developed receptive than expressive vocabulary. Studies show a gap between how children with DS understand and how they are able to communicate this understanding (Cleland, Wood, Hardcastle, Wishart & Timmins, 2010; Hess, 2012; Roberts, Price & Malkin, 2007). Accordingly, sign language is often used to teach children with DS; in this regard, the primary language is either British Sign Language (BSL) or Makaton. When the children are very young, this approach is useful as it helps bridge the existing communication gap (Clibbens, 2001). As a result of these difficulties, a child's learning can be impacted at times, although most learners with DS tend to know a lot more than they can actually express. Therefore, if they improve their communication, they will be able to communicate and interact more effectively with their peers (Sacks & Buckley, 2003).

In spite of the above-mentioned delay in some areas of development for children with DS, the possibility of helping them is not difficult, but depends primarily on the role of parents and specialists in providing early intervention for the children. According to National Down Syndrome Society [NDSS] (2012), Early intervention is the right solution to help them and to overcome some of the difficulties they face in life. Educating students with DS is challenging, but still possible. Just like other children, they can be capable learners and make progress, provided they get the right opportunity and support from the educators' parents and their families. These factors include attitude, which is the most critical factor related to the success of a student with DS, and also the timing of early intervention. The belief that a child will succeed will make him or her more likely to be successful (ibid.). Therefore, the provision of early intervention services for children with DS has to start from birth, as discussed in the section below.

3.3 Early Intervention (EI)

3.3.1 Overview of Early Intervention

Ramey (1998) explains the idea of early intervention as one “born in the shadow of *Brown v. the Board of Education*, the 1954 Supreme Court desegregation case that affirmed the universal right of all children to a decent education. Separate educational systems for Black children were judged as inherently unequal by analogy to the cultural melting” (p. 109). Also, Ramey (1998) adds that in 1959, during the presidential campaign, *Life* magazine published a painful picture of life in the Appalachian Mountains, highlighting the social and cognitive conditions of poor white families and their children in West Virginia and other Southern states. The children were malnourished, not properly educated, and mentally delayed.

As a result of such situations, a group of psychologists began to focus on learning theory in exploring the role and consequences of early education. The results of their studies, which included young children and their families, showed the importance of early intervention in developing the brain and individual behaviour. In these studies, the scientists ignored the then prevalent view that intelligence was determined by inheritance in the first place. This active approach by psychologists helped to pre-empt early intervention studies on a larger scale as studies continued on several low and poor black families. This, in turn, helped lay the groundwork for Project Head Start, which began in 1964 as a major policy effort in the USA to improve school readiness and social development for disadvantaged children. Since then, the USA has sought to develop the educational system, focusing on the importance of education in the kindergarten stage which positively affected the application of pre-school early intervention in two stages. The first stage was for children suffering from poverty and the second phase focused on the establishment of early intervention for children with developmental disabilities (ibid.).

In 1975, USA Congress passed a landmark law to ensure that all children have access to free and appropriate education. This is originally known as the Education for All Handicapped Children Act, thus creating a complex special education system throughout the United States. It included the reformulation of this legislation, which now bears the title “Individuals with Disabilities Education Act” (IDEA), which is thought to be one of the most important laws to be considered and implemented by a number of countries around the world (Ramey, Ramey & Lanzi, 2007).

3.3.2 Definition of Early Intervention

The definition of Early Intervention has evolved over time. According to Denhoff (1981), EI referred to the provision of developmentally suitable activities for children at risk or suffering from different conditions. Gibson and Fields (1984) argue that this definition focuses on the child alone and fails to recognise other broad-based social factors affecting an individual's behaviour and development (such as family, school and immediate community). Accordingly, recent studies have revealed that effective intervention programmes view children as individuals well rehabilitated in a family setup (Gibson, 1991). This view is shared by Weijerman and De Winter (2010), who argue that the quality of care given to the child plays a major role in his or her intervention strategies. Similarly, Nash-Wright (2011) notes that any intervention programme that centres only on the child, while ignoring the child's environment, is not usually successful. This is confirmed by Richter and Griesel (1994) in the following statement: "Long term positive human relationships and the provision of stable, healthy environments for children are the most important determinants that we know of for normal human development" (p. 85). Thus, EI involves multidisciplinary programmes and coordinated services provided to young children (birth to five years) and to their families for their development during the critical early years. By supporting the child's development and the family welfare, EI partly prevents the condition from getting worse (Allen, 2011).

According to Guralnick and Bricker (1987), EI is not a singular construct, but rather is a term that refers to a collection of different 'early interventions', each varying widely in its goals, nature and scope. For any group of children with disability, these early interventions can take different forms and vary considerably. Alper (2014) also mentions that EI mainly involves individualised services, designed to help meet the specific needs of each individual child with DS. Also, it helps the children attain a growth milestone that is meant for all areas of development for a child, which include self-help, gross and fine motor skills, social development and language skills. The use of therapeutic methods to take action based on the needs of a child in the first years of life will include some activities that are family-centered (ibid.).

Matthews and Rix (2013) underline the substantial evidence for the effectiveness of EI, where the intervention services are targeted towards enhancing child-parent relationships. They explain how EI activities for young children with disabilities are usually associated with primary targets and goals. Furthermore, it has also been recognised that parents should focus on playing with their children, as well as encouraging them to respond to activities activated by the adults (ibid.). Similarly, Algozzine, Browder, Karvonen, Test and Wood (2001) mention that self-directed learning is important in EI for children with DS. However, the main challenge faced by parents and practitioners engaged in EI activities is how to motivate their children to play and to enhance creativity through daily childhood experiences.

Moreover, Matthews and Rix (2013) observe that most EI programmes for pre-school children with disabilities are based on a functional diagnostic model. Such an approach underscores the need for an objective in EI, whereby activities are established that can improve the children's development. Intervention activities can take place in the form of day-to-day family activities, or be carried out by a practitioner. For example, a physiotherapist can apply intervention activities to control family experiences. This view is shared by Weijerman and De Winter (2010) who underline the fact that the quality of care given to the child plays a major role in the intervention strategies for the child. Thus, EI is meant to promote child development and prevent the condition from worsening. According to Moore (1990), the aims of EI are to prevent the development of secondary disabilities in young children with developmental problems, to promote the social, emotional, intellectual and physical growth of young children with developmental problems, to take maximum advantage of their potential for learning and to support the families of young developmentally disabled children so as to enable them to meet the needs of the children as effectively as possible.

3.3.3 Importance of Early Intervention for Down's Syndrome

Children with DS have certain problems in each developmental domain including the social, behavioural and mental domains, and therefore require EI to help them develop and thrive (NDSS, 2012). In this area, Fisher (2013) asserts that children with DS require help to be able to master many tasks, i.e., they need practice and physical therapy. As children develop, all areas of their development are important and the emphasis changes with their growth. Physical development is essential for the future growth and progress of children. Infants and babies tend to learn by interacting with their surrounding environment. For this reason, the infant needs to be able to move purposefully and freely. The ability of a child to grasp things, explore his surroundings, roll over and crawl are types of behaviour that depend on fine and gross motor development. A child's mastery and understanding of his surrounding environment, social and language development are fostered by such interactive physical activities, which can be achieved through EI, if not naturally (ibid.).

Cunningham (1992) emphasises that children with DS mostly respond to influences from their surrounding environment; as such, they tend to thrive in homes which furnish them with love, stimulation and care. EI can even help DS children to form relationships, in addition to making them more contented and fulfilled, preventing any slow development in these children. Nawi, Ismail and Abdullah (2013) argue that as EI is necessary for families with a DS member, it should be offered to them. Parents who have worked on EI have reported more positive outcomes than those families who have received less intervention, especially in terms of understanding the abilities and individual needs of these DS children. Therefore, EI is important for creating positive outcomes amongst children with DS and their families. However, there is a need to enhance EI to reduce the costs, thus enabling more children to take part in EI

particularly those who come from a less privileged family background (Pascal, Bertram, Delaney, Manjee, Perkins, Plehn & Saunders, 2013).

Kingsley and Mailloux (2013) point out that EI helps parents by giving them support, information and encouragement with regard to their child's potential. As a result, parents are taught how to interact with their infants, meet the needs of babies with disabilities and improve the development of toddlers. Also, EI assists parents in sharing their concerns about their children, as they socialise with other parents whose children have the same condition. Nawi et al. (2013) argue that the children with DS who receive early intervention during their infancy tend to be more advanced than those who do not; also, children who have received EI tend to fall between mild and moderate disability and not profound or severe disability.

3.3.4 Early Intervention Services (EIS)

Early intervention has the ability to enhance development among children who are already experiencing intellectual delays. These are achieved through Early Intervention Services to ensure the children access their social competence needs and achieve the desired mental health (Bailey, Raspa, Humphreys, Sam, 2011). The definition of EIS has been clarified by the IDEA (1997), "EIS are the developmental services designed to meet the developmental needs of an infant or toddler with a disability and the needs of the family to assist appropriately in the infant's or toddler's development, of the following areas: physical development, cognitive development, communication development, social or emotional development, or adaptive development" (p. 57). IDEA (2017) discusses the most recent division of early intervention services that have been reviewed and officially approved for 2017, as shown in the Table 3.1.

The Early Intervention Services are provided by a multidisciplinary team in order to ensure the delivery of an appropriate service from the professional person. For this reason, IDEA highlights the need to display the specialisation of the EI team and emphasises the importance of the presence of the team members according to the situation of each child and his family and their need for various kinds of EIS. The team consists of audiologists, family therapists, nurses, occupational therapists, orientation and mobility specialists, paediatricians and other physicians for diagnostic and evaluation purposes, physical therapists, psychologists, registered dietitians, social workers, special educators, including teachers of children with hearing impairments (including deafness) and teachers of children with visual impairments (including blindness), speech and language pathologists, vision specialists, including ophthalmologists and optometrists (ibid).

Table 3.1 Types of early intervention service

Types of early intervention services	The meaning
Assistive technology device and service	Assistive technology device and service any item, a piece of equipment whether acquired commercially off the shelf, modified or customized, that is used to increase or improve the functional capabilities of a toddler with a disability. Also, any service that directly assists a toddler with a disability in the selection, acquisition, or use of an assistive technology device.
Audiology services	Referral for medical and other services necessary for the habilitation or rehabilitation of an infant or toddler with a disability who has an auditory impairment.
Family training, counseling, and home visits	Services provided by social workers, psychologists, and other qualified personnel to assist the family of an infant or toddler with a disability in understanding the special needs of the child and enhancing the child's development.
Health services	The term includes such services as clean intermittent catheterisation, tracheostomy care, tube feeding, the changing of dressings or colostomy collection bags, and other health services; and consultation by physicians with other service providers concerning the special health care needs of infants and toddlers with disabilities.
Medical services	Services provided by a licensed physician for diagnostic or evaluation purposes to determine a child's developmental status and need for EIS.
Nursing services	Include the assessment of health status for the purpose of providing nursing care, the provision of nursing care to prevent health problems, restore or improve functioning, and promote optimal health and development; and the administration of medications.
Nutrition services	Include conducting individual assessments; nutritional history and clinical variables; feeding skills and feeding problems; food habits and food preferences; developing and monitoring appropriate plans to address the nutritional needs of children and making referrals to appropriate community resources to carry out nutrition goals.
Occupational therapy	Includes services to address the functional needs of a toddler with a disability related to adaptive development, adaptive behaviour, and play, and sensory, motor, and postural development. These services are designed to improve the child's functional ability to perform tasks at home, at school and in a community.
Physical therapy	Includes services to address the promotion of sensorimotor function through enhancement of musculoskeletal status, neurobehavioural organisation, perceptual and motor development, and effective environmental adaptation.
Psychological services	Include obtaining, integrating, and interpreting information about child behaviour and family conditions related to learning, mental health, and development; planning and managing a programme of psychological services, including psychological counseling for children and parents, family counseling, consultation on child development, parent training.
Service coordination services	It means services provided by a service coordinator to assist and enable toddler with a disability and the child's family to receive the services and rights, for example, coordinating the services identified in the Individualized Family Service Plan (IFSP), such as educational, social, and medical services and informing families of their rights and procedural safeguards.
Sign language and cued language services	Include teaching sign language, and auditory/oral language, providing oral transliteration services (such as amplification) and sign and cued language interpretation.
Social work services	Include making home visits to evaluate a child's living conditions and patterns of parent-child interaction; preparing a social or emotional developmental assessment; providing individual and family-group counselling with parents and other family members, working with those problems in the living situation; and identifying and coordinating community resources and services to enable the toddler with a disability and the family to receive maximum benefit from EIS.
Special instruction	Includes the design of learning environments and activities that promote the toddler's acquisition of skills in a variety of developmental areas, including cognitive processes and social interaction; curriculum planning, providing families with information, skills, and support related to enhancing the skill development of the child; and working with the toddler with a disability to enhance his development.
Speech-language pathology services	Include identification of children with communication or language disorders and delays in the development of communication skills, including the diagnosis and appraisal of specific disorders and delays in those skills; and provision of services for the habilitation, rehabilitation; or prevention of language disorders and delays in the development of communication skills
Transportation and related costs	Include the cost of travel and other costs that are necessary to enable an infant or toddler with a disability and the child's family to receive EIS.
Vision services	Include diagnosis and appraisal of specific visual disorders, delays, and abilities that affect early childhood development; referral for medical or other professional services necessary for the habilitation or rehabilitation of visual functioning disorders.

Adapted from: IDEA (2017)

3.3.5 Models for the provision of Early Intervention Services

There are many aspects of the provision of EIS that have emerged and changed with the increasing global focus on EIS for children with disabilities or children at risk. Khatib and Hadidi (2016) point out that there has been a development and multiplicity in the models of providing EIS for children with disabilities over recent decades. This diversity in the models is due to the nature of each community and its interest in providing EIS in addition to the suitability of these models to the nature of the work of communities. Some models are more useful and convenient than others for specific communities. In the USA context, “every state provides EIS, although the states differ in regard to a number of dimensions, including the lead agency that administers the program, the constellation and organisation of local programs that provide services, and how services are funded” (Hebbeler Spiker, Bailey, Scarborough, Mallik, Simeonsson & Nelson, 2007, p. 1). However, the focus for EIS, as emphasised by the Education for Persons with Disabilities Act 1995, is the family and its natural environments (Watkins, 1995). Also, IDEA (2017) emphasises that the primary objective of EI is to enhance the ability of families to meet the special needs of their infants and young children with disabilities, so that they become the best provider of services.

Cason (2011) emphasises the importance of providing EIS within a familiar “environment such as the home or community settings where developing peers typically spend time. When necessary, there are provisions for services to occur in settings other than a child’s natural environment e.g. clinic, rehabilitation hospital” (p.22). According to Baker, Marquis and Feinfeld (2007), the most important model for providing EIS is the “Home-Based Intervention model”. It provides EIS basically by parents or with the help of a multidisciplinary team, which offers weekly visits to train parents on how to support their children, especially from birth to two years. Parents are trained on how to feed, breastfeed, and play, how to encourage the sensory stimulation of their children and how to strengthen the muscles of children with DS, as they suffer from the apparent relaxation of muscles from birth. Einfeld, Tonge and Clarke (2013) argue that parental training at home through home visits is conducive to the effectiveness of EI for children in terms of efficiency, its application in natural environments and the reduction of material costs. They therefore strongly stress the importance of parents playing a key role in providing EIS to their children, with the necessary support of specialists based on the individual family needs.

A number of studies have shown the effectiveness of the home-based intervention model and the work of parents with their children intensively in the acquisition of many necessary skills in the early years of life, at a time when the development of adaptive behaviour, personal care, and motor and language skills takes place (Bailey, Raspa, Humphreys & Sam, 2011; Kingsley & Mailloux, 2013; Llewellyn, McConnell, Honey, Mayes, & Russo, 2003; Mahoney, Robinson, & Fewell, 2001; McWilliam & Scott, 2001; Rondal & Buckley, 2003; Shin, Nhan, Lee, Crittenden, Flory & Hong, 2009).

In the same context, Merza (2002) mentions that the success of EI depends on the participation of parents and that the models of services that focus on training parents and teaching them how to support children with disabilities bring many benefits. The following benefits are mentioned:

- (a) assure continuity of care between the intervention plans and the child's home experience thereby making implemented intervention programs more cost-effective;
- (b) inspire parents to be knowledgeable child advocates and effective interventionists;
- (c) enhance family self-efficacy and self-control; and
- (d) facilitate parents' communication with professionals. (p.17)

McWilliam (2010) further emphasises the importance of providing some types of support to a family during home visits and intervention at home. He argues that home visits that focus on direct intervention with the child without taking into account the dimensions of support for children's families will produce narrow and unequal EI results. Therefore, he stresses that the success of home-based intervention will be through the provision of the three types of support that must be considered while working with families of children with disabilities: (1) emotional support; (2) material support; (3) informational support, as shown in Figure 3.4. McWilliam (2010) asserts that the families of children with disabilities are in dire need of emotional support, which entails dealing with them positively and responding to all their enquiries and building a friendly relationship and understanding, while working with them and training them on how to deal with their children in the early years of life. In addition, they need information support in order to understand the levels of the developmental skills of their children, whether language or motor skills, or daily life skills, and the way in which these skills can be improved through EI. Finally, there is a need for material support, which includes equipment and materials and financial support.

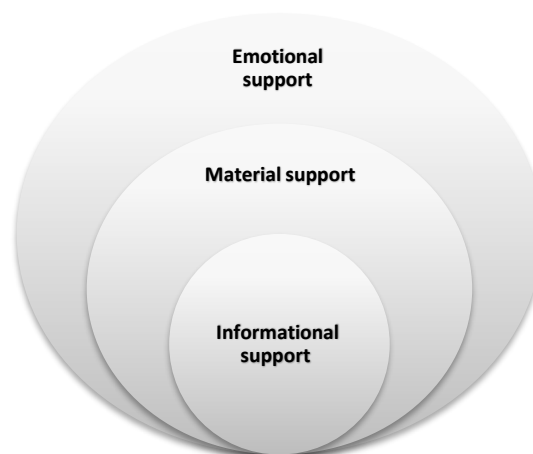


Figure 3.4 Types of support needed by parents of children with disabilities

Source: Adapted from McWilliams (2010)

Other models of EI have been proposed. One of them is the Centres-based early intervention. Guralnick (2011) shows that this type includes interventions in collective care places where children participate for a limited period of time, or pre-programmes that offer half a day or more of educational, language, occupational therapy, physical therapy and other services that each child needs. However, he stresses that this model cannot replace the need to support families. Harbin, McWilliam and Gallagher (2000) point out that the center-based model requires that the child be brought to an educational setting on a regular basis. The setting might be a classroom, a hospital, or a more informal arrangement. Also, they argue that the focus in the center-based models is usually the child; however, many center-based programmes highlight the need for parental involvement and may even provide structured training for the parent (ibid.). Bruder (1993) argues for the provision of traditional EIS in centres by individual staff with different specialties, with a focus on the treatment of developmental disability in children. Therefore, he underlines the importance of using integrated models that emphasise the facilitation of the development of competencies of the children through the use of the family context and integrated community in addition to the special centres for EI. Also, Dunst, Bruder, Trivette and Hamby (2006) show that the positive benefits that emerge from the interventions of practitioners for daily activities in centres or schools with children with special needs are considered less useful compared with the daily activities provided by the family to the child as a source of learning and natural intervention.

However, Rosenkoetter, Hains and Dogaru (2007) confirm the role of the centres and their workers in providing EIS for children with disability in cooperation with the families of these children, which positively affects the outcome of this type of model. Also, King, Strachan, Tucker, Duwyn, Desserud, and Shillington (2009) suggest a comprehensive model that focuses on the work of a multidisciplinary team that could work by training parents through special centres or through home visits.

The vision of this multidisciplinary team is based on joint co-operation with the family of the child with disability to design an EIS that meets all the needs of the child in their early stages. The authors mention the benefits shown by the work of a multidisciplinary team for the provision of an EIS to children with disability (ibid.). These benefits include:

- (a) service efficiency, (b) cost-effectiveness of services, (c) less intrusion on the family, (d) less confusion to parents, (e) more coherent intervention plans and holistic service delivery, and (f) the facilitation of professional development that enhances therapists' knowledge and skills. (p. 213)

Internet-based interventions is another type of EIS model that depends on modern technological development. Baggett, Davis, Feil, Sheeber, Landry, Carta, and Leve (2010) argue that there is a significant challenge facing traditional EI delivery models such as family-based intervention and home visits, as well as intervention through centres or schools. Also, Baggett et al. (2010) point out that the use of the Internet in conjunction with many recent developments in computer networks and technology as well as social media, has created new ways to deliver EIS faster with less effort and fewer financial resources. Several studies have

pointed out the benefits of Internet-based interventions as one of the modern models in providing EIS for children with disabilities and their families in their various places of residence, whether in remote cities or villages, in terms of access to a large number of individuals who are in urgent need of EIS in different locations, and in terms of cost efficiency and ease of communication between families of children and specialists on the Internet and social media (Baggett et al., 2010; Ondersma, Martin, & Chaffin, 2008).

Kelso, Fiechtl, Olsen and Rule (2009) refer to the model of EI over the Internet which help children with disabilities and their families as an alternative to providing services at home through home visits or training of the people, especially in rural areas which suffer from a lack of access to EIS and also physical access for service providers (because of the distance or the weather in some circumstances). Kelso, Fiechtl, Olsen and Rule (2009) showed the effectiveness of using videoconferencing with four families receiving EIS in a rural programme. It has become clear that this type of online intervention is feasible and useful in saving time and resources, as well as facilitating access to services for families in remote locations and ensuring early intervention services for children with disabilities. Several studies have confirmed the benefits of the model of EIS over the Internet through videoconferencing to provide a number of medical and speech therapy services. Parents showed satisfaction with this model as it provided EIS for their children and helped in the development of their skills. Parents were positive despite problems encountered with this model, which included both low quality videos and poor sound quality (Marcin, Ellis, Mawis, Nagraj, Nesbitt & Dimand, 2004; McConnochie, Wood, Kitzman, Herendeen, Roy & Roghmann, 2005; McCullough, 2001; Young & Ireson, 2003).

The section below discusses the actual use of social media and its potential role in enhancing the EIS offered to children with DS, and thus improving their quality of life and that of their parents.

3.4 Social Media

3.4.1 Introduction to social media

Kaplan and Haenlein (2010) report that social media in a rudimentary form first evolved in 1979 when Tom Truscott and Jim Ellis from Duke University founded the Usenet system, a global dialogue system that allowed Internet users to publish public messages. Hauben and Hauben (1998) explain that the Usenet system enabled users to read and publish messages called articles or publications known as newsgroups. The Usenet system is similar to a Bulletin Board System (BBS) and was the forerunner of the widely used Internet forums. Discussions are interconnected, as with web forums and BBS, although posts are stored sequentially on the server; the name comes from the term "user network". Kaplan and Haenlein (2010) point out that

The era of Social Media as we understand it today probably started about 20 years earlier, when Bruce and Susan Abelson founded "Open Diary", an early social networking site that brought together online diary writers into one community. The term "weblog" was first used at the same time, and truncated as "blog" a year later when one blogger jokingly transformed the noun "weblog" into the sentence "weblog". The growing availability of high-speed Internet access further added to the popularity of the concept, leading to the creation of social networking sites such as MySpace (in 2003) and Facebook (in 2004). This, in turn, coined the term "Social Media", and contributed to the prominence it has today. (p. 60)

Evans (2014) defines social media in this way: "Social media are web-based or personal device-based applications that connect users with online resources or with each other" (p. 903). Wernz (2014) explains that social media is "the means of interactions among people in which they create, share, and exchange information and ideas in virtual communities and networks" (p. 2). Social media applications build on the technological foundations of Web 2.0 which allows the creation and exchange of user-generated content (Kaplan & Haenlein, 2010). According to Seo (2012),

[p]ictures, audio, videos, and hyperlinks to other online resources make Web 2.0 into a network of multiple information dissemination that goes beyond just text. Knowledge is stored, retrieved, created, or amended digitally online in a variety of media forms easily found by a user. (p. 47)

Social media is linked to Web 2.0, not Web 1.0. Bernal (2009) explains the difference that Web 1.0 was built by the webmaster and maintains the website for consumption by end users. The relationship is strictly unidirectional in this model, fixed and targeted based on assumptions made by the webmaster and content team. In contrast to this approach, in the Web 2.0 model, users actively participate and contribute to a website.

This two-way approach enables users to interact with the site and with each other in ways that create a community. Users can also create, modify, evaluate and mark content to their liking, providing other users with new information and directing what is important to the community as a whole, as illustrated in Figure 3.5 (ibid.). Similarly, Alejandro (2010) points out that the Web 2.0 publishers are creating platforms instead of content and the users are creating the content which is characterised by open communication, decentralisation of authority and freedom to share.

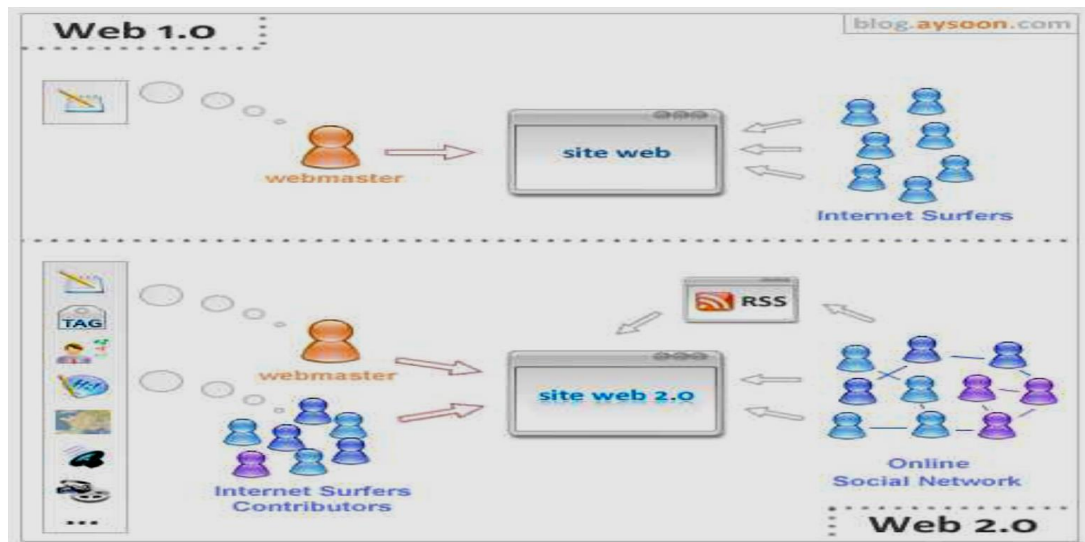


Figure 3.5 Comparison between Web 2.0 and Web 1.0

Source: <http://blog.aysoon.com/Le-Web20-illustre-en-une-seule-image>

It also emerged that there was a reciprocal use of the term “social networks” and “social media”. Lenartz (2012) explains that these two terms

appear to present a similar issue, often being used interchangeably and without a clear definition of either term. The term social media is generally more appropriate to define methods of conveying a message as an extension of traditional media outlets. The term social media also seems more appropriate when the intention is for organizations or individuals to convey an intentional message to an audience. (p. 10)

3.4.2 Types of social media

Social media has been characterised by multiple and varied categories, due to the difference of opinion of researchers on the division of these means according to the nature of its public function or the purpose of use. Abousoliman (2017) argues that “social media technology has vastly advanced and expanded in recent years. New services and categories are emerging every year and, consequently, there is no single, settled way of classifying social media according to their functions” (p. 38). San Su, Wardell and Thorkildsen (2013) categorised social media platforms according to their purpose and function into Social Networking, Microblogging, Photo Sharing and Video Sharing. Based on their observations, Kaplan and Haenlein (2010) devised six different types of social media: (a) Collaborative blogs (e.g., Wikipedia); (b) Blogs, Microblogs and Internet Forums (e.g.; Twitter, Forums); (c) Content Communities, (e.g.,

Youtube for videos, Flickr for photos, and Slideshare for PowerPoint Presentations); (d) Social Networking sites (e.g.; Facebook, LinkedIn and MySpace); (e) Virtual Game Worlds (e.g. World of Warcraft); and (f) Virtual Communities. (e.g., Second Life). To-date, there are many types and platforms for social media that differ from one society to the next depending on the nature of those communities and the types of social media used. Also, Dao (2015) notes that many researchers have different ideas about the types of social media sites.

Therefore, in this study, the most popular social media tools are discussed according to the preferences of the participants, especially the parents of children with DS and their teachers. The paragraphs below provide an overview of the types of applications of social media used in the current study: Forums, Facebook, YouTube, Twitter, WhatsApp, Instagram, Pinterest and SnapChat.

Forums

Campbell-Kelly and Garcia-Swartz (2013) explain that the emergence of forums is not recent. They appeared at the inception of the Bulletin Board System [BBS] and the Usenet networks that were first created in the late 1970s. At that time, forums fulfilled the same function as the BBS and the Usenet networks in terms of finding a place for advertisement and the exchange of ideas or information and also providing the opportunity for users to discuss their own experiences and advice. Wang (2003) states that Japan and China were among the first countries in the world to use forums. The very first forum systems were the Planet-Forum system, developed at the beginning of the 1970s; the Electronic Information Exchange System (EIES), first operational in 1976, and the KOM system, first operational in 1977. One of the first forum sites that is still active today is Delphi Forums. The service, with four million members, dates back to 1983. The history of the Internet forums in their current form begins in 1994 (ibid.). Papić, Stanković, Jevtić and Pantelić (2016) state that the "Internet forum is a web 2.0 tool for organizing public discussion "at a distance" whose contents is created on a certain theme by the discussion participants. In the literature, internet forums are also called: electronic forums, web forums, newsgroups, discussion forums, message boards, discussion boards, bulletin boards or simply – forums" (p. 189). Callan (2006) explains that the forums provide a place for members of the community to discuss hot topics according to the subjects put forward. This allows users time to research, think, comment and respond to each other, thus making the discussion of high quality. From the researcher's perspective, therefore, the forums create an environment for discussion and interaction according to the interest of users.

Facebook

According to Cameron, Massie, Alexander, Stewart, Montgomery, Benavides and Segev (2013), Facebook is a social networking website where over 750 million individuals share messages, photos and videos. This site was founded in 2004 by Mark Zuckerberg, in conjunction with Dustin Moskovitz and Chris Hughes, who were studying Computer Science at Harvard University, the three students being roommates there at the time. Site membership was originally limited to Harvard students, but it was then extended to include other colleges in the city of Boston and at Stanford University. The site circle then widened to include all University students, followed by high school students and finally, any person aged 13 and over. Kirkpatrick (2011) argues that Facebook has the ability to bring users, especially young ones, from around the world together. Figure 3.6 shows the latest statistics for its use around the world. AIShehri (2013) describes Facebook as a social networking site, which focuses mainly on making friends and helping people exchange their personal files, photos and videos, with the facility to comment on them. There is also a chat and instant chat option, making it easy to create relationships in a short time. Likewise, there is the possibility of connecting with old and new friends, exchanging information and news developments with them. However, Miliany (2014) argues that

Facebook raises a number of issues that relate to personal privacy with regards to the protection of personal information about users, their friends and activities undertaken. These issues exist on three levels: the privacy of applications; ensuring privacy against members; and guaranteeing that there is sufficient protection against the economic ambitions of the website itself, such as through advertising. (p. 46)

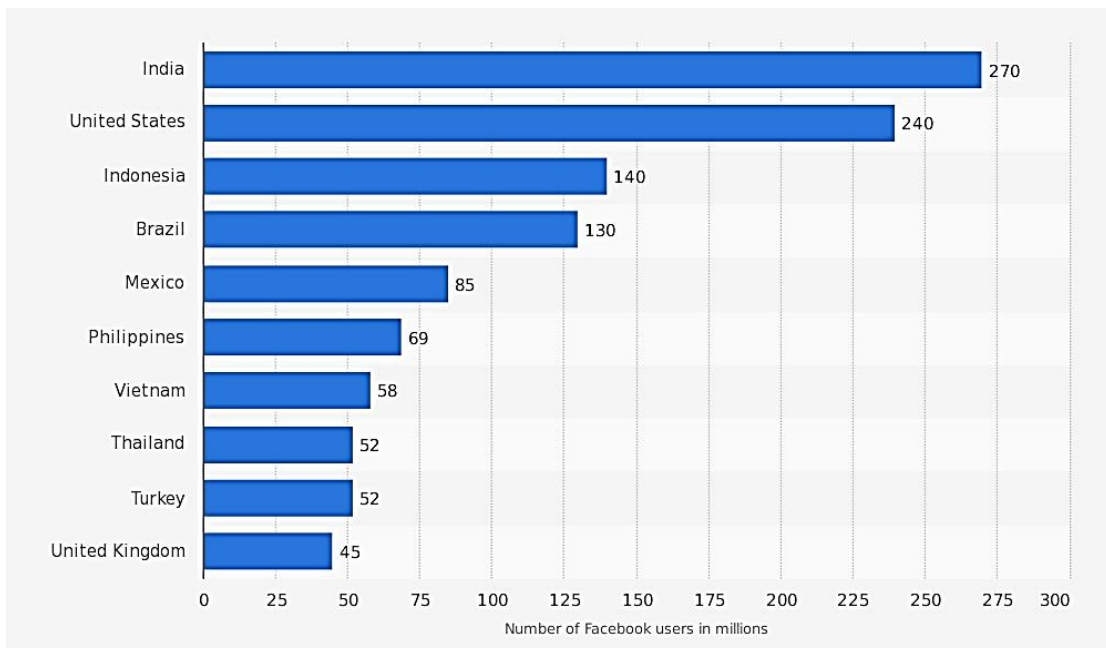


Figure 3.6 Statistics for the use of Facebook in 2018

YouTube

Burgess and Green (2013) explain that YouTube was founded in 2005 by Chad Hurley, Steve Chen and Jawed Karim. It is a website where users are allowed to upload their videos for free, watch other people's videos, or share their own with others. YouTube now provides users with access to over a billion video clips. Additionally, YouTube is one of the most popular Web 2.0 applications on the Internet, although it is mainly used for entertainment. Aifan (2015) confirms that YouTube users enjoy quick and easy access to the video clips that may be created by an authorized or a personal blogger or can be made randomly from people around the world, providing users with a choice of subjects relevant to them. Nevertheless, YouTube can be an efficient and useful as a teaching tool, whether for research or educational presentations, providing finite digital content (Ubari, 2015). Similarly, Al-Mukhaini, Al-Qayoudhi and Al-Badi (2014) point out that YouTube is a way to learn more about different subjects by seeing the clips of lectures, programmes and conferences. It can therefore serve as a tool for transmitting and acquiring knowledge.

Twitter

According to Mansour (2012), Twitter was founded in 2006 by Jack Dorsey when an American company embarked on an evolutionary search in 2006 to serve the mini-blogging market. The company made this service accessible to the public in October of the same year and then adopted the unique name 'Twitter' in April 2007. Yanru, Dion, Kavita, Shengnan and Xiaotian (2012) explain that Twitter offers a blogging service, where a maximum of 140 characters is permitted for each message, enabling users to send updates on their condition through the Twitter site. The latest updates from others and responses then appear on the user's page. Twitter can also receive replies and updates via e-mail and through SMS text messages. Kwak, Lee, Park and Moon (2010) explain the advantages of Twitter over the other forms of social media, such as Facebook or MySpace. Twitter allows the user to follow others without them having to follow him. It also provides the user with the advantage of using the Hashtag, thus giving him the opportunity to participate in and follow (with other members of the community) any issue or public debate. In the same context, Mansour (2012) summarises the most important features of Twitter. It is the fastest social media tool where users can ask questions to other participants and receive immediate answers. There are several academic and scientific experts and famous people who use it. Twitter also contributes to facilitating urgent aid requests on any individual topic. In addition, the user can send important and fast news as well as follow news and events around the world at the same time. According to The Statistics Portal (2018) which shows a recent statistic about the use of Twitter in a number of developed countries, the United States was first in its use of Twitter, followed by Japan and then the United Kingdom, which is the first European country to use this information platform. Saudi Arabia which follows the UK is the Arab country that makes the most use of Twitter, as illustrated in Figure 3.7.

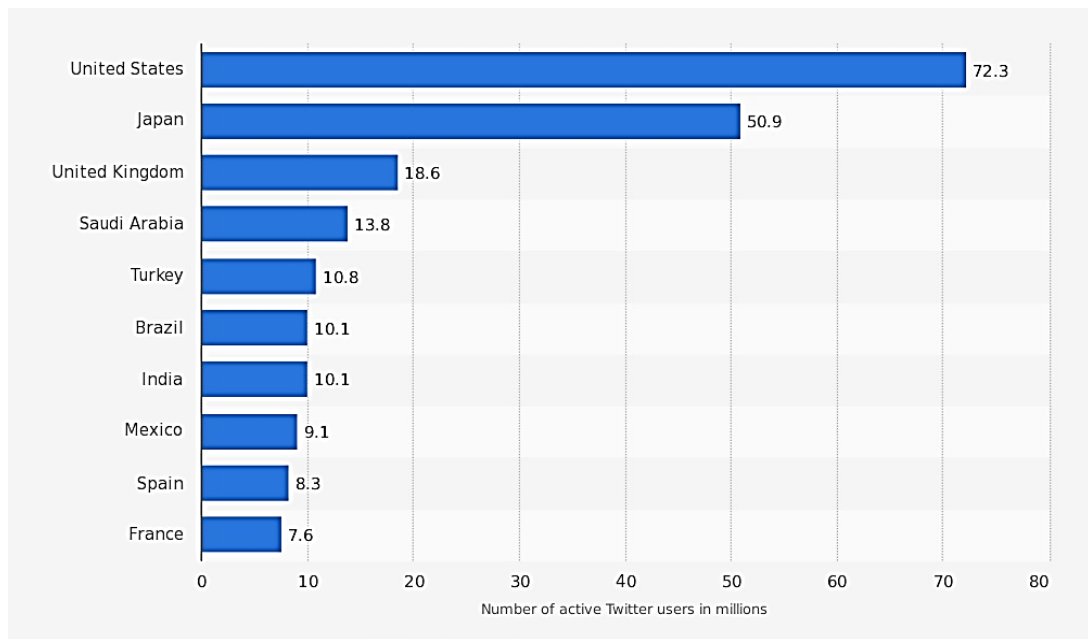


Figure 3.7 Statistics for the use of Twitter in 2018

WhatsApp

Cotton (2013) mentions that WhatsApp was created in 2009 by Brian Acton and Jan Koum, employees of the Yahoo site. Anglano (2014) describes WhatsApp as an instant messaging and multi-platform application for smartphones. It is used for sending messages, pictures, voice messages, videos, and multimedia objects, with the possibility of having an instantaneous response. Aifan (2015) argues that WhatsApp is the easiest and most widely used social media around the world. It provides users with the advantage of sending free text messages to other countries, thus making it globally popular. In addition, WhatsApp is available on all smartphones and offers the possibility of creating chat groups for discussions and social, work-related or other types of conversations (ibid.). Additionally, Alsanie (2015) suggests that “WhatsApp spreads widely among users and friends daily. It is a useful tool for connecting people with common interests and shared concerns” (p. 69). Therefore, WhatsApp is one of the most popular mobile applications in the world (Güler, 2017).

Instagram

According to Rainie, Brenner and Purcell (2012), Instagram was founded in 2010 by Kevin Systrom and Mike Krieger. It is an application that allows users to take pictures and make adjustments to them before sharing them with friends via social media. The authors argue that one of the advantages of Instagram is that it is free of charge for all Android operating systems and is compatible with a variety of cameras. It can therefore be used to share photos with friends across all social networks, such as Twitter, Facebook, Flickr. According to The Statistics Portal (2018), the number of monthly active Instagram users as of September 2017 had reached 800 million, up from 600 million in December 2016. In the USA, Instagram is preferred

by teens over Twitter and Facebook. Hu, Manikonda and Kambhampati (2014) mention that “Instagram also provides similar social connectivity as Twitter that allows a user to follow any number of other users, called “friends”. On the other hand, the users following an Instagram user are called “followers”” (p. 596). Instagram is important because it helps gain deep insights into social, cultural and environmental issues about people’s activities through their photos (ibid.). In the same context, Naaman, Boase, and Lai (2010) argue that Instagram is an appropriate tool for community awareness, like other social media platforms such as Facebook and Twitter. However, Sheldon and Bryant (2016) claim that “there is not much academic research studying why people use it, and who the people are who use it” (p. 89).

Pinterest

Carpenter, Abrams and Dunphy (2016) explain that Pinterest was founded by Ben Silbermann, Paul Sciarra and Evan Sharp in 2010. It had reached 200 million monthly active users in September 2017. According to Hansen, Nowlan and Winter (2012), “Pinterest lets users post images and videos from the internet — either while viewing a website or by using a URL — and add user-created photos, both of which are referred to as pinning” (p. 2). In Pinterest, “users can visually share, curate, and discover new interests by pinning images to an online pinboard ... Pins are 45 created by linking to visual images from online websites” (Delello & McWhorter, 2016, p. 376). Additionally, Pinterest is one type of social media that is mostly for personal use. However, it is also effective for commercial and educational purposes; many libraries, for example, benefit from the presentation and promotion of new books (Hansen, Nowlan & Winter, 2012). The most important feature of the Pinterest is that it provides users with the opportunity to plan, organise and then explore topics of interest as desired by users, this is what distinguishes Pinterest as a tool compared with other social media (ibid.).

Snapchat

According to Katz & Crocker (2015), Snapchat is a social media application for recording, broadcasting, and sharing photo messages and videos, which created in 2011 by Evan Spiegel, Bobby Murphy, and Reggie Brown, who were students at Stanford University and then developed into the Snap Company. Vaterlaus, Barnett, Roche and Young (2016) state that “Snapchat is a social media platform that allows users to send images, videos, and text with a specified amount of time for the receiver(s) to view the content before it becomes permanently inaccessible to the receiver” (p. 594). Moreover, Bayer, Ellison, Schoenebeck and Falk (2016) point out that this application sends instant messages from the place of the event and then deletes all the content that was shared in 10 seconds or less. Some studies have highlighted the use of Snapchat for privacy-related messages and for passing images between the users (Katz & Crocker, 2015; Utz, Muscanell & Khalid, 2015). Piwek and Joinson (2016) confirm that “the rise in Snapchat use has been one of the most rapid and unprecedented in the history of instant messaging services and social networking sites. It is estimated that Snapchat’s base of

active users grew from 10 million in mid-2012 to over 70 million in early 2014, and 100 million in early 2015" (p. 358).

3.4.3 The characteristics of social media

Social media comprises some of the applications on the internet which can help users participate and share their information. In this way, they may also learn how to co-operate with others through digital communication. Social media is, in fact, a general 21st century term which is widely used to identify a variety of networking tools or techniques that emphasise the social aspects of the Internet as a channel of communication, collaboration and creativity (Dabbagh & Reo, 2011). Bharati, Zhang and Chaudhury (2015) point out that one of the most important characteristics of social media is its ease of use, enabling the users to create their own content and the possibility of using a variety of audio and video. Users can also create social media of friends and contacts with similar interests. In addition, social media is characterised by its accessibility and its availability through tablets or smartphones, whereby people can publish, access and share information at no cost and as quickly as possible across many segments of society. It also does not need any preparation or prior co-ordination as is the case in traditional media such as newspapers, magazines and television that are subject to censorship and high costs (Kaplan, 2012; Miller & Shepherd, 2004).

Additionally, Valentini and Kruckeberg (2012) consider that users of social media play a major role in creating interaction within their communities; indeed, such interactions would not be possible without its users. Also, Beckett and Mansell (2008) believe that "not only is it 'more fun' to communicate through social media (compared to traditional media channels), but the interactivity also provides a sense of community that transcends anything offered by mainstream media" (p. 22).

Evidently, social media provides users with similar thinking with quick and immediate means to facilitate the exchange of views, daily issues and general problem-solving (Brown, Green & Harper 2012). Zheng, Li and Zheng (2010) explain that social media has a number of characteristics, including participation, openness, conversation, community, connectedness, which are not available in some traditional media. Table 3. 2explains these characteristics as they occur in societies with more developed internet infrastructure where individuals have uncensored access to the world wide web.

Table 3.2 Characteristics of social media

Characteristics	
Participation	Social media encourages contributions and feedback from anybody who is interested. Everyone can actively participate in generating, commenting, and revising media content. The boundary between media and audience tends to be blurred.
Openness	Most social media services are open to feedback and participation. Social media provides an open space for social interaction. Participants can freely access, provide, share, use and re-use information on social media.
Conversation	Whereas traditional media is about 'broadcasting' (content transmitted or distributed to an audience), social media may be viewed more as a two-way conversation.
Community	Social media allows communities to form quickly and communicate effectively. Communities share common interests.
Connectedness	Most kinds of social media thrive on their connectedness; making use of links to other sites, resources and people.

Source: Adapted from: Zheng, Li & Zheng (2010, p.1-2)

3.4.4 Benefits of using social media in the field of Special Education

The media, in all its old and modern forms, is influential and effective in guidance and education and as a major source of information, especially in view of the developments of its tools. Awareness is at the forefront of the media's objectives. It is able to influence the ideas and convictions of the members of the community about positive phenomena that serve society and individuals (AlMagushi, 2007; Graham, Avery&Park,2015). In addition, Cao, Guo, Liu and Gu (2015) explain that social media is an effective platform widely employed to form and strengthen interpersonal relations. According to Ganley and Lampe (as cited in Cao et al., 2015), "social networks refer to the structure of the direct and indirect relationships that people create which provide socioeconomic resources to the individual" (p. 353). Baruah's (2012) confirms that social media is an interactive medium, a source of information and an exchange of ideas among users in addition to its effectiveness in terms of cost and time.

Special education also benefits from social media. Indeed, social media plays a significant role in special education in several ways. For instance, (IEP) meetings can be recorded and then broadcast online on social media websites, such as YouTube. Furthermore, information can be shared from the classroom, wherever there is recording equipment in special education classes, with content later being uploaded onto social media platforms. Also, social media can be used for campaigns against the bullying of children with disabilities, especially in schools (Wernz, 2014). Furthermore, Wernz (2014) states that parents may be inclined to turn to social media to seek support on how best to intervene over special education issues. MacKinlay (2002) argues that parents who have disabled children choose to use social media to share their experiences with other parents, who are going through similar situations, or even to seek help when they are stuck, or do not know what to do certain activities, since social media contains a great deal of useful information. Parents can use social media to enhance their relationship with their children. Also, parents are more inclined to resort to social media for support during differences with school principals and staff about special education issues and make demands to the governments and the public (Wernz, 2014).

In the same context, AL- Zaalah et al. (2015) found that autistic children's parents viewed mass media as a major source of information on how to deal with their children, although they contained some misinformation. It also increased parents' awareness of their children's condition. Furthermore, Ismail (2013) points out that the traditional media in Arab countries is unable to keep pace with social developments and social issues. Accordingly, social media has become a quick alternative, characterised by transparency in presenting different positions and bold opinions, which contribute to the visibility of rights and freedoms and the definition of various social problems. Social media is therefore increasingly relied upon to serve the issues encountered by people with disabilities and to open doors for people and institutions to express their concerns, follow up their rights and reach as many people as possible in different regions.

Moreover, social media helps teachers to teach children with special needs. Hains, Belland, Conceição-Runlee, Santos and Rothenberg (2000) confirm that the online forums and discussion groups have a major role in developing the performance of teachers of special education and updating their information through the exchange of views and information that reflect positively on their work with children with disabilities. Mazurek and Wenstrup (2013) note that teachers can use video games to teach children with autism, in order to improve their social and behavioural activities. At the same time, social media has been used by teachers to help children with DS to improve their cognitive skills. Mazurek and Wenstrup (2013) claim that the benefit of social media for children with DS is that it presents opportunities for social relationships in an approach that does not involve paying attention to gestures, vocalisation, or facial expressions. Cao et al. (2015) also note that social media can be used in knowledge management, which is essential for assisting children with DS.

However, one study conducted by Asuncion, Budd, Fichten, Nguyen, Barile & Amsel (2012) showed that students with disabilities were making good use of social media for both school and non-school activities and they were able to access the necessary tools, in a similar way to their peers without disabilities. Social media contributes to encouraging learners in educational institutions in general to exchange information and increase communication between people in different educational classes and around the world (Baruah, 2012).

3.4.5 Difficulties and challenges of using social media

Although social media offers many benefits, there are some challenges facing users. These relate to the nature of the irrational interaction that users make while utilising these media. Wang, Lee and Hua (2015) explain that some users have encountered several behavioural and psychological problems due to their excessive use of these media, such as daily addiction, loss of productivity and increased feelings of anxiety, depression and isolation. Individuals sometimes feel pressure from others to respond or comment quickly, which gives an impression of being happy but in fact such a behaviour is fake and can lead to mental and psychological exhaustion. Yi Lin, Sidani, Shensa, Radovic, Miller, Colditz, Hoffman, Giles and Primack (2016) explain that social media sometimes presents an ideal view of its users. Such a perspective can give other individuals the impression that others lead happier and more successful lives than themselves. This situation can lead to feelings of envy and even depression among users. Indeed, a number of studies have shown that poorer sleep quality, lower self-esteem, higher levels of anxiety and depression are some of the problems faced by social media users. These problems are a public health concern and can affect people of different ages (Pantic, 2014; Scott, 2015; Woods & Scott, 2016). The impact of social media on family relations is also one of the challenges and problems resulting from its excessive use. Baruah (2012) argues that users who are addicted to using social media lose a lot of time at the expense of their interactions with parents and relatives, thus potentially leading to a breakdown in familial ties. Moreover, the use of social media involves several ethical issues. Baruah (2012) mentions that moral considerations are ignored by users of some social media: there might be interference in the privacy of individuals, unethical promotions and advertising of misleading products or services. Also, as stressed by Holmes (2011), not all people who use social media have good intentions. They may even use it to harm an organisation or other people because of personal or other goals. As highlighted by many studies, cyberbullying is one of the most negative aspects faced by users of social media. Cyberbullying can happen in a number of ways: sending messages of intimidation, intimidation or ridicule through text messages, or stealing personal accounts such as e-mail or social media accounts and mobile phones, creating fake accounts and hacking into people's personal accounts (Alwagait et al., 2015; Schenk & Fremouw, 2012; Walker, Sockman & Koehn, 2011).

This study explores whether the challenges mentioned above are also faced by parents and teachers of children with DS when using social media. Being the first in the field of special education in the Saudi context, this study will explain the most important problems and challenges of using social media through the perspective of parents and teachers.

3.4.6 Chapter Summary

This chapter reviewed previous studies on the following topics: Down syndrome, early intervention and social media. Although this study is limited to the Saudi context, it builds on previous studies on the nature of disabilities and their characteristics, the importance of early intervention for children around the world and the role of social media as part of the global technological revolution. It was therefore important to have an academic backdrop to understand the data from the current research. To obtain the data for this study, a qualitative approach was adopted, as explained in the following chapter which examines the methodology used in this study. I explore the voices of several mothers and teachers and delve into the reality and role of social media in the Saudi context, especially in the field of early intervention. The fourth chapter will also explain the reason for choosing a methodology that has hardly been used in the field of special education in Saudi Arabia and demonstrate how the data has been collected, analysed and verified.

Chapter Four: Methodology

4.1 Introduction

This study investigates the role of social media in supporting parents and teachers when accessing early intervention services for children with DS in KSA. To gather the necessary data, a qualitative approach was used, as explained in this chapter. The chapter is divided into several sections, each discussing different aspects of the research methodology including the qualitative research approach and its adoption in this study, the research instrument, the participants in the study, the research setting, data collection procedures, factors taken into consideration in the adoption of Thematic Analysis (TA) procedures for the pilot study and finally ethical issues.

4.2 Research Methodology: Qualitative Research

As explained by Denzin and Lincoln (2000), a qualitative approach has been used for many years in studies involving human life in different disciplines, including the social sciences, communication, psychology and education. This approach entails a multitude of different techniques of interpretive and naturalistic methods used to investigate the subject, such as personal experiences, case studies, life stories, observations, and interviews. The objective is to derive meaning from the occurrences or events being studied (ibid.). Mack, Woodsong, MacQueen, Guest and Namey (2005) explain that the "strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given research issue. It provides information about the "human" side of an issue – this is often contradictory behaviors, beliefs, opinions, emotions and relationships of individuals. Qualitative methods are also effective in identifying intangible factors, such as social norms, socioeconomic status, gender roles" (p.1). Hoepfl (1997) summarises the features of qualitative research or naturalistic research as follows:

Qualitative research uses the natural setting as the source of data. The researcher attempts to observe, describe and interpret settings as they are, maintaining what Patton calls an "empathic neutrality"; (2) The researcher acts as the "human instrument" of data collection; (3) Qualitative researchers predominantly use inductive data analysis; (4) Qualitative research reports are descriptive, incorporating expressive language and the "presence of voice in the text"; (5) Qualitative research has an interpretive character, aimed at discovering the meaning events have for the individuals who experience them, and the interpretations of those meanings by the researcher; (6) Qualitative researchers pay attention to the idiosyncratic as well as the pervasive, seeking the uniqueness of each case; (7) Qualitative research has an emergent as opposed to predetermined design, and researchers focus on this emerging process as well as the outcomes or product of the research; (8) Qualitative research is judged using special criteria for trustworthiness. (p. 49)

Corbin and Strauss (2008) stress that the complex nature of understanding social occurrences, events, people's behaviour and experiences needs to be considered when choosing the most appropriate methodology. There are two main methodologies: quantitative and qualitative.

As noted by Mouton and Muller (1998) these two methodologies differ in their ways and techniques and also in the aims, constituents of the knowledge and the features of the study that are investigated. These facts are represented in Table 4.1, adapted from Castellan (2010), which illustrates the differences between selected components of quantitative and qualitative research approaches.

Table 4.1 Methodology component comparison

Components of Research Approaches	Quantitative	Qualitative
Philosophical Assumptions	Positivist perspective, objective reality, researcher is independent of that which is researched	Post- Positivist perspective, naturalistic, social, multiple & subjective reality where researcher interacts with that being researched
Method/Types of Research	Experimental, quasi-experimental, single subject and descriptive, comparative, correlational, ex post facto	Phenomenology, case study, ethnography, grounded theory, cultural studies
Purpose/Goal of Research	Generalizability, explanation, prediction	Understanding, insight, contextualization and Interpretation
Questions or Hypothesis	Hypothesis is informed; guess or prediction	Question is evolving, general and flexible
Those Being Researched	Randomly selected sample, proportionally representative of population	Usually a small number of non-representative cases
Those Conducting the Research	Etic (outsider's point of view); objective, neutral, detached and impartial	Emic (insider's point of view); personal involvement and partiality
Data	Questionnaires, surveys, tests in the form of numbers and statistics	Written documents from field work, interviews, pictures, observations, objects.
Data Analysis	Deductive process, statistical procedures	Inductive process: codes, themes, patterns to theory

Source: Castellan (2010, p. 7)

Creswell (1994) has differentiated the two methodologies. He notes that qualitative study is an inquiry that draws on understanding a problem that is social or human in nature and normally conducted in a natural environment that employs words to try to explain the problem. On the other hand, quantitative research deals with quantitative measures that include the testing of theories using variables drawn from numbers that are then used with statistical procedures to derive meaning (Creswell, 1994). In the same context, Queirós, Faria and Almeida (2017) make it clear that each of the research methods, whether qualitative or quantitative, contains strengths and weaknesses, but each approach can achieve the desired goals based on the nature of the research questions. Accordingly, a study's research questions determine the type of methodology that will be selected by the researcher. Krueger and Casey (2014) note that when selecting the methodology to be used, the researcher has to consider the participants involved and the audience targetted. In this study, a qualitative methodology is favoured.

The adoption of a qualitative approach does not mean that a quantitative approach cannot be used for this kind of research. I deemed that the qualitative approach was better suited to understand positions, feelings, opinions and experiences of the participants about the current role of social media in the field of special education in KSA, especially in early intervention. Given that this is the first study that addresses the issue of social media and early intervention services in Saudi Arabia in such depth, a quantitative approach would not have provided the same deep insight into the topic. Quantitative surveys require that the researcher has a great knowledge of the subject so that he/she is able to develop variables that can be studied through quantitative methods such as surveys. The subjects and concepts that emerge from this qualitative study can subsequently be examined; thus, variables can be formed for later investigations. The various opinions expressed and the questions raised by the participants in this study, the stakeholders and service providers of the children with DS, can be analysed in later interviews and questionnaires through a quantitative approach in future research. The section below will provide further details on the rationale for choosing the qualitative approach which has provided detailed and complex information on the current topic.

4.3 Justification for Using Qualitative Research Methods

The present study applied a qualitative research methodology to investigate the role of social media in support of parents and teachers of students with DS, with a focus on early intervention services in KSA. Such an approach was selected because it was suitable for examining the participants' experiences as well as the issues associated with the use of social media. Indeed, Corbin and Strauss (2008) assert that a qualitative approach could be applied to gain new perspectives on phenomena we know little about. Furthermore, Patton (2002) points out that a qualitative approach is appropriate when studying events and situations that are unexplained, and in cases where the type of research is not common. A qualitative approach is also suitable where past theories are non-existent or unfinished. Similarly, Creswell and Creswell (2017) observe that a qualitative approach is appropriate for studies in which the goals and objectives can easily be understood using a lengthy narrative. Also, Johnson and Christensen (2008) state that a qualitative approach allows the researcher to obtain detailed and insightful information about daily lived experiences that can be easily understood through narration.

This study meets all the above criteria since it seeks to understand the perspective of teachers and parents on their use of social media concerning children with DS. In addition, this qualitative research methodology was chosen because the experiences of teachers and parents can neither be presented easily nor completely by the use of numbers. The fact that the study explores teachers' and parents' experiences and perceptions, which are not easy to quantify, means that a qualitative research approach is the most appropriate for this type of study. As Labuschagne (2003) notes, feelings and experiences cannot be investigated in the laboratories or by using scientific tests. Certainly, it is easy to forget daily memories, but they can be remembered through a qualitative approach which utilises different techniques.

This possibility has informed this study's application of qualitative research techniques such as interviews, in order to obtain information required to answer the specified research questions put forward in Chapter 1 and reiterated in Table 4.2.

Table 4.2 Current Research Questions

Current Research Questions	
Key research question	What is the role of social media in supporting parents and teachers of students with Down's syndrome in early intervention services in the Kingdom of Saudi Arabia?
Sub-questions	What is the current praxis of social media and how does it vary amongst parents and teachers?
	What are parents' and teachers' perceptions of the benefits, challenges and/or potential problems of using social media within an early intervention context?
	Is there an emerging overarching framework of effective practice in employing social media in this context?

Another reason for using the qualitative approach was the broad nature of the research question that was not specific enough for closed answers. This offered an opportunity to examine and investigate the experiences of teachers and parents when using social media. This approach fits in with Corbin and Strauss's observation (2008) that a qualitative methodology can be applied to discover new perspectives and new occurrences. In the specific context of this study, through the qualitative approach, it was possible to obtain a true perspective of the teachers' and parents' daily experience and understand the way in which teachers perform their roles in class and when they interact with children with DS. Therefore, the research instrument chosen was one appropriate for qualitative research, as explained in the section below.

4.4 Research Instrument

The research questions have a direct impact on the choice of research method and consequently research instruments for data collection. Interviews were chosen as the instrument for collecting data for this study. Kumar (2010) explains that the interview is a useful research instrument, noting the interaction between two or more individuals with predetermined objectives and goals. Bryman (2008) acknowledges that interviews are a common tool applied in qualitative studies. When a researcher wants to have face-to-face contact with the participants of the research, the interview provides an effective method for obtaining the required data. According to Cohen, Manion and Morrison (2013), the interview is amongst the research collection tools applied by researchers to the understanding of human behaviour. This observation is also shared by Seidman (2013), who notes that interviews are a common qualitative research tool applied by researchers to obtain a detailed understanding of certain issues under investigation, particularly when touching on individual experiences. Similar sentiments are echoed by Stake (1995) who underlines that interviews are "the main road to multiple realities" (p. 64). Fontana and Frey (2000) also claim that interviewing "can provide a

greater breadth of data than other types, given [its] qualitative nature" (p. 652). Fontana and Frey further argue that researchers ought to view participants taking part in interviews not as mere objects for completing what the researcher seeks to achieve, but as associates. The moment a researcher creates such a relationship, the interviews will be friendly and interesting, allowing the researcher to obtain a clear and honest view of the participants (ibid.). In the current study, a number of factors have informed the selection of the interview technique as the data collection tool. As advised by Kumar (2010), a data collection tool should be linked to the objectives of the study; the set objectives necessitated the use of interviews to understand the experiences of teachers and parents. Other reasons included the flexibility offered by the interview technique, and the suitability of this approach, owing to the fact that the participants came from varied backgrounds. Indeed, the interview approach is more suitable in particular circumstances; for example, where sensitive questions have to be asked. This is because it allows the researcher to use variable questions (and even explanations) to glean information from the participants. As the researcher, I interviewed teachers and parents about their experiences of using social media with DS children. The interviewing approach gave me an opportunity to ask more probing questions as opposed to using questionnaires. Semi-structured interviews were conducted that varied in length between an hour and an hour and a half. These interviews were intended to be informal and open-ended, conducted in a conversational style. Mack et al. (2005) point out that qualitative research is typically more flexible; therefore, allowing greater spontaneity in the interaction between the researcher and participant. In the case of open questions, for example, participants are free to respond in their own words and these responses will be more detailed than a simple 'Yes' or 'No'. The relationship between the researcher and participants is also often less formal and the participants have the opportunity to respond elaborately. This was the case in this research, where the participants gave detailed responses to the questions. The section below provides more information on these participants.

4.5 Participants

The study sample comprises five teachers and five mothers. The teachers work at the Daycare Centre, which specialises in providing early intervention programmes for children with DS; they also have experience of using social media in the workplace. The mothers selected for the study all have a child with DS and use social media. These respondents were chosen randomly by the centre's administration. I had asked the administrative co-ordinator at the centres to choose mothers and teachers and obtain their verbal approval to attend the interview at times convenient for them. Prior to the main study, a pilot study was conducted with one teacher and one mother. I decided to analyse their data and add it to the main study sample data because the information they provided was enriching and would add to the current study. Table 4.3 provides further information on the participants.

Table 4.3 Information on the participants

Participants		Code	No. of children	No. of children with DS	Gender of the child with DS	Age of the child with DS
Mothers' group (MG)	Mother 1	M1	2	1	Girl	7
	Mother 2	M2	8	1	Boy	8
	Mother 3	M3	4	1	Boy	8
	Mother 4	M4	4	1	Girl	8
	Mother 5	M5	4	1	Girl	8
	Mother "pilot study"	MPS	2	1	Boy	7
Teachers' group (TG)			Qualification	Work experience (years)		Comment
	Teacher 1	T1	BA in Special Education	7		
	Teacher 2	T2		4		
	Teacher 3	T3		6		
	Teacher 4	T4		7		
	Teacher 5	T5		2		*she has a brother with DS
	Teacher "pilot study"	TPS		1.5		

4.6 Research Setting

This study was conducted in a daycare centre which is a special education centre in Riyadh under government supervision, represented by the Ministry of Social Affairs. It offers rehabilitation and training of children with DS; there is an integrated and dedicated team of staff. The centre offers all kinds of special education and support services. Moreover, the centre and its employees actively use social media platforms such as Instagram, Twitter and Snapchat, to share information, set up networking and also provide awareness activities on DS. As a researcher, I had no intention of choosing a particular centre. But I was seeking to find a specialised centre that provides services for children with DS especially in early intervention and this centre was one of a few that provide early intervention services for the category of DS.

4.7 Data Collection Procedures

The study data was collected in stages, as explained below.

4.7.1 Ethical approval from the University College London and Saudi education policy

Prior to the beginning of the data collection phase, I employed the form for ethical approval from the University College London under the supervision of my academic supervisor and an extension of the academic department at the University. I also obtained official approval to collect the data for the current study according to the policy of higher education in KSA. The approval of each of the following government agencies was obtained: The Cultural Attaché in London (represented by the Ministry of Higher Education); the Scholarship Authority from King Saud University. I made a formal written request to the Department of Special Education for submission to the day care centre for EI, so that I could collect the study data in April 2017 (see Appendix B). An official approval from the Daycare Center was also sought, (see Appendix C).

4.7.2 Planning and scheduling to collect study data

I worked on an action plan to organise my attendance at the research setting (see Appendix D), which included meeting with the centre's management and clarifying the general purpose of the study, in addition to agreeing with them that their role was to choose the mothers and teachers who had experience in using social media and communication. This process involved working with them by phone and by letter to confirm their attendance at the centre for the interview. Furthermore, this process entailed determining the schedule of interview dates, which were based on the personal schedules of the participants, taking into account the most appropriate times during the official working hours of the centre (7 am to 12 pm). Organising the interview schedule for participants was rather difficult as the teachers were busy in the very short formal time that required them to be present to achieve the goals set for the children; also, the mothers had changes in their schedules. Nonetheless, I was able to help the teachers to finish the formal set work as required.

4.7.3 The interview process

It is important to choose a quiet and appropriate place while interviewing participants, enabling them to feel comfortable and safe when they present and discuss issues that are sensitive to them (McCosker, Barnard & Gerber, 2004). Interviewees also need to be given uninterrupted time to talk or express ideas, free of external influences. In order to meet these requirements, I asked the Center to provide my interviewees with a comfortable place. The Daycare Center provided a special office to me throughout the period of data collection in order to facilitate the work and protect the privacy of the participants. The office provided the interviewees with a comfortable and calm environment and helped me to operate professionally. At the beginning of each interview, I made sure to present myself and build a friendly and trustworthy relationship for all participants by welcoming them, making them feel secure and assuring them that all their

personal information was confidential. I explained the general objective of the study to each participant as well as their moral rights. I asked for their written consent to participate in the interview and allow the audio recording of the interview. They were asked to sign the English (see Appendix E) and Arabic (see Appendix F) versions of the consent form (see Appendix F). All interviews were conducted mainly in the Arabic language, face-to-face with the participants, ranging from one hour to an hour and a half.

I used the semi-structured interviews because of the advantages mentioned above. Given the exploratory nature of the study, the interview questions were broad and flexible, so as not to direct the interviewees to any particular point of view. Also, to ensure that the questions were properly addressed to all participants, I was careful to write the interview questions in a side sheet. This allowed for the review and equal presentation of the general questions to the participants. There was also the opportunity and flexibility of other questions depending on the nature of each participant's responses – taking into consideration that these questions were within the general context of the objectives of the study. I was careful to formulate interview questions directly linked to the research questions. In preparing the questions, I benefitted from information from the literature reviewed earlier. The interview questions were based on the following: the general history of the incidence of DS in the group of mothers and also the basic experiences of the teachers while dealing with children with DS; the participants' use of social media in terms of the types of means used and the most preferred ones and the reasons for their choice; the experiences of participants in the use of social media, especially in early intervention services for children with DS; participants' views and personal experiences on the benefits of using social media; the most important challenges and problems faced by participants during their use of social media; the views of the participants and their current and future expectations about the status of social media and its role in helping them to obtain early intervention services. Appendix G includes the interview questions asked to the participants in this study. In addition, I was keen to adopt the informal language of conversation and dialogue, which differs between colloquial language and the parameters used in academic language. I also tried to constantly show interest in what the interviewees said, verbally and non-verbally, to encourage them to talk and to be comfortable and open. Finally, all the interviews were completely recorded on audio. No notes were taken during the conversation so as not to provoke fear, cause hesitation, or create distractions.

4.8 Pilot study

A pilot study is a small-scale methodological test conducted to prepare for a main study and is intended to ensure that methods or ideas would work in practice (Kim, 2011, p. 191). Also, Jariath, Hogerney and Parsons (2000) confirm that the pilot study is intended and planned from the beginning of the proposed research, thus helping the researcher to identify issues related to the main study and make necessary adjustments and revisions. According to Kim (2011), the benefits of the pilot study are as follows: (1) it detects ethical issues such as sampling, and provides an opportunity to resolve some of the problems that may hinder the main research; (2) it seeks to reveal issues through real experience of research, enabling qualitative researchers to focus on the topics of the proposed research that need to be expanded or narrowed and also gain a clear perception of the focus of the main study; (3) it helps qualitative novice researchers when they are evaluating and preparing interview and observation techniques; (4) it can be used to self-assess the individual's readiness, ability, and commitment as a qualitative researcher; and (5) it contributes to increasing the credibility of the qualitative studies.

These advantages served as a motivation for the application of a pilot study in the current research. The pilot study contributed to the strengthening of the main study and provided a realistic picture of the research before the start of the main study. Therefore, I conducted my pilot study at Ain Al Faras Daycare Center in KSA. Its aims were: (1) to examine and refine the methodology; (2) to assess whether the questions were understood with the potential for re-drafting them, if necessary; and (3) to evaluate if the questions yielded sufficient information to carry out the main study. The pilot study was carried out in May 2016, with two participants: a teacher specialising in the provision of early intervention programmes for children with Down's syndrome and with experience of using social media in the workplace and a mother whose child has Down's syndrome and who uses social media. Data was collected using semi-structured interviews which were carried out in a conversational style and ranged between 90-120 minutes.

I started with the initial greeting of participants. Issues of confidentiality, anonymity and consent were explained and ensured. The interviews were conducted face to face. This made the conversation flow freely and smoothly. I asked the questions and allowed the interviewees to answer, using occasional prompts or at times interjecting to clarify what had been said. The closing question was: "Would you like to add any information about this topic?" I recorded all the audio information provided by the participants. In addition, the transcription of interviews was regarded as a priority. I requested someone who specialised in transcribing and worked in 'Printing Undergraduates Services' to transcribe the audio content of the interviews.

They included pauses, hesitations, and any idiosyncrasies that occurred throughout the interview to reflect the true nature of the conversation. As a result of the pilot study, the interview questions were refined, and minor changes were made to the original questions. The results showed that the questions had to be adapted to suit the level of the mothers and teachers. The mother's questions had to be kept simple and colloquial language should be used. As for the teacher, she understood the scientific questions immediately.

4.9 Data Analysis

The data analysis method in this research is qualitative, which involves the use of Thematic Analysis (TA). Thematic analysis was chosen because it is a flexible method that allows themes to emerge from data. It is also an essentialist method which reports on the experiences, meanings, and the reality of participants in studies. Thematic analysis is not derived from any particular theoretical stance or epistemological position (Braun & Clarke, 2006), which is in line with the purpose of the present study. Owing to the exploratory nature of the study, an inductive approach was chosen. The propriety of TA was confirmed by Marks and Yardley (as cited in Alhojailan, 2012) when they report that

Thematic Analysis is considered the most appropriate for any study that seeks to discover using interpretations. It provides a systematic element to data analysis. It allows the researcher to associate an analysis of the frequency of a theme with one of the whole contents. This will confer accuracy and intricacy and enhance the research's "whole meaning". (p. 10)

Braun and Clarke (2006) define thematic analysis as "a method for identifying, analysing, and reporting patterns [themes] within the data" (p. 79). They sum up the advantages of thematic analysis as follows:

- It has flexibility and is a relatively easy and quick method to learn and apply.
- It is accessible to researchers with little or no experience of qualitative research. The results are generally accessible to the educated general public.
- It is a useful method for working within a participatory research paradigm, with participants as collaborators.
- It can usefully summarise key features of a large body of data, and/or offer a 'thick description' of the data set.
- It can highlight similarities and differences across the data set.
- It can generate unanticipated insights.
- It allows for social as well as psychological interpretations of data.
- It can be useful for producing qualitative analyses suited to informing policy development (p. 97).

The flexibility phase has been critiqued by Antaki, Billig, Edwards and Potter (2003), who suggest that this allows for a "free for all approach", claiming that the method is not limited enough. Tuckett (2005) points out that there is no clear agreement as to what thematic analysis is and exactly what the processes are. Despite such criticism, Braun and Clarke (2006, p. 87) delineate the six phases of thematic analysis and offer examples to demonstrate them, thus helping researchers to use thematic analysis in a step-by-step manner, as show in Table 4.4

Table 4.4 Phases of thematic analysis

Phase		Description of the process
1	Familiarising yourself with your data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2	Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3	Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4	Reviewing themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5	Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6	Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Source: Braun & Clarke (2006, p. 87)

4.10 Considerations using Thematic Analysis

To ensure the clarity of the analysis and direction of the research during the collection of data, I considered several factors during the application of TA in this study. According to Braun and Clarke (2006) when using TA there are two options for the researcher prior to collecting the data: (1) a rich description of the data set or (2) a detailed account of one particular aspect. Since the aim of the current study seeks to address the role of social media through the views of parents, teachers, their experiences and their feelings and their position, I decided that the first option is best suited to the goal of this study. The second consideration focuses on identifying the themes that are gathered within the data. There are two possible methods: a theoretical deductive 'top-down' or an inductive 'bottom-up' method. Creswell and Plano Clark (2007) explain that

The deductive researcher works from the 'top down', from a theory to hypotheses to data to add to or contradict the theory. In contrast, the inductive researcher as someone who works from the "bottom-up, using the participants' views to build broader themes and generate a theory interconnecting the themes (p. 23).

The current study mode is not based on the theory from the very beginning but rather on the discovery of topics that emerge from the responses of the participants and their organisation and coding and coming out with a theoretical framework that is appropriate to the context of this study by revealing the role of social media in supporting the parents and teachers of children with DS. An inductive approach was deemed more appropriate for this topic which had not been previously studied in the Saudi context. The third consideration is a decision around the 'level' at which the themes are to be identified in TA. There are two types of levels: semantic/explicit level and a latent/ interpretative level in qualitative research.

Braun and Clarke (2006) explain the meanings of these levels as:

With a semantic approach, the themes are identified within the explicit or surface meanings of the data and the analyst is not looking for anything beyond what a participant has said or what has been written. Ideally, the analytic process involves a progression from description, where the data have simply been organised to show patterns in semantic content, and summarised, to interpretation, where there is an attempt to theorise the significance of the patterns and their broader meanings and implications (p. 13).

Therefore, the current study depends on the semantic/explicit level of analysis of the identified themes, where it examines participants' opinions and experiences to identify, review and discuss only what has been mentioned, without going deeper into participants' thoughts.

The sections below explain how Braun and Clarke's (2006) phases of thematic analysis were adopted in this study.

4.11 Process of Conducting a Thematic Analysis in this Study

Phase 1: Familiarisation with the data: Braun and Clarke (2006) state that the process of transcription is an excellent way for researchers to start familiarising themselves with the data in order to conduct a thematic analysis, especially if they are working with verbal data such as interviews, television programmes or political speeches. Also, some researchers even argue it should be seen as "a key phase of data analysis within interpretative qualitative methodology" (Bird, 2005, p. 227). Therefore, all interviews were transcribed to ensure sufficient knowledge of the information collected through the interview. Someone who specialised in transcribing and worked in 'Printing Undergraduates Services' was asked to transcribe the audio content of the interviews, which included pauses, hesitations, and any idiosyncrasies that occurred throughout the interview to reflect the true nature of the conversation. The person was chosen in order to ensure objectivity in recording all responses and to overcome any bias that may have occurred had I transcribed the recordings. For example, if I was the one transcribing, I might have been influenced by my impression of the participants during the interviews, summing up what I heard and thus losing out on a wealth of data and potential codes and themes emerging from the data. My distance from the transcription of data added to the objectivity of the work. My role as the researcher was to carefully review the sound recording with the written notes at the same time to ensure that the writer did not forget a word or phrase. Thus, the codes and themes that emerged from the participants' responses were deemed to be more reliable in this study. Then I embarked on an absolute immersion into the data by repeatedly reading texts and starting with the first steps of qualitative analysis in the search for initial codes. The transcription phase took three months and the analysis stage six months.

Phase 2: Generating initial codes: Brown and Clark (2006) point out that inductive analysis is “a process of coding the data without trying to fit into a pre-existing coding frame or the researcher analytical preconception” (p. 83). Therefore, I made sure to identify patterns in the data to generate further themes; hence the subjects were developed inductively rather than deductively. This stage involved the production of initial codes for the data. Therefore, I started coding (open codes) in a manual way by thoroughly reading the transcripts and taking notes next to the texts which were analysed using highlighters and coloured pens in order to identify the codes that were of importance and value and write all notes in the side of the text (see Figure 4.1). I wrote initial codes which described the data from each participant. These were then organised in tables (as an example see Appendix H). I was careful to collect all the descriptive codes, put them in a list, name them and define them (see Appendix I). Next, I made a checklist for all participants to ensure that the codes had been mentioned by them (see Appendix J).

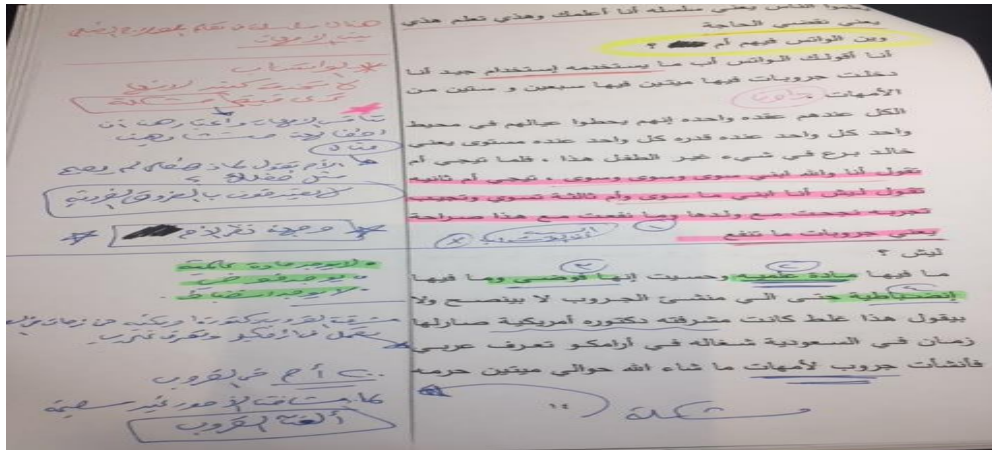


Figure 4.1. Coding a transcript

Phase 3: Searching for themes: At this stage, I aimed to sort out the list of codes that emerged from the previous stage and categorise them in subjects that corresponded to the nature of each code using the mind map (see Figure 4.2), which contributed to the organisation and composition of a number of main subjects as well as sub-themes of importance to the study's results.

Phase 4: Reviewing themes: This stage involved refinement of themes and merging of some themes into others. Therefore, all the data extracts that fitted into a theme were re-read to ensure that the data formed a coherent pattern. In addition, all themes related to the current study were organised and those that were of limited importance were excluded.

Phase 5: Defining and naming themes: At this stage, after the collection, organisation and review of all the codes a number of themes and sub-themes of interest to the current study emerged. Therefore, I made sure to identify and label themes and sub-themes as well as making each sub-theme more appropriate and closer to the main themes. I also chose clearer labels that conveyed the whole theme concisely and also those that were more commonly recognised in the field of special education.

Phase 6: Producing the report: This last step of the thematic analysis involved the production, presentation and discussion of the results, which form the basis for the chapter six.

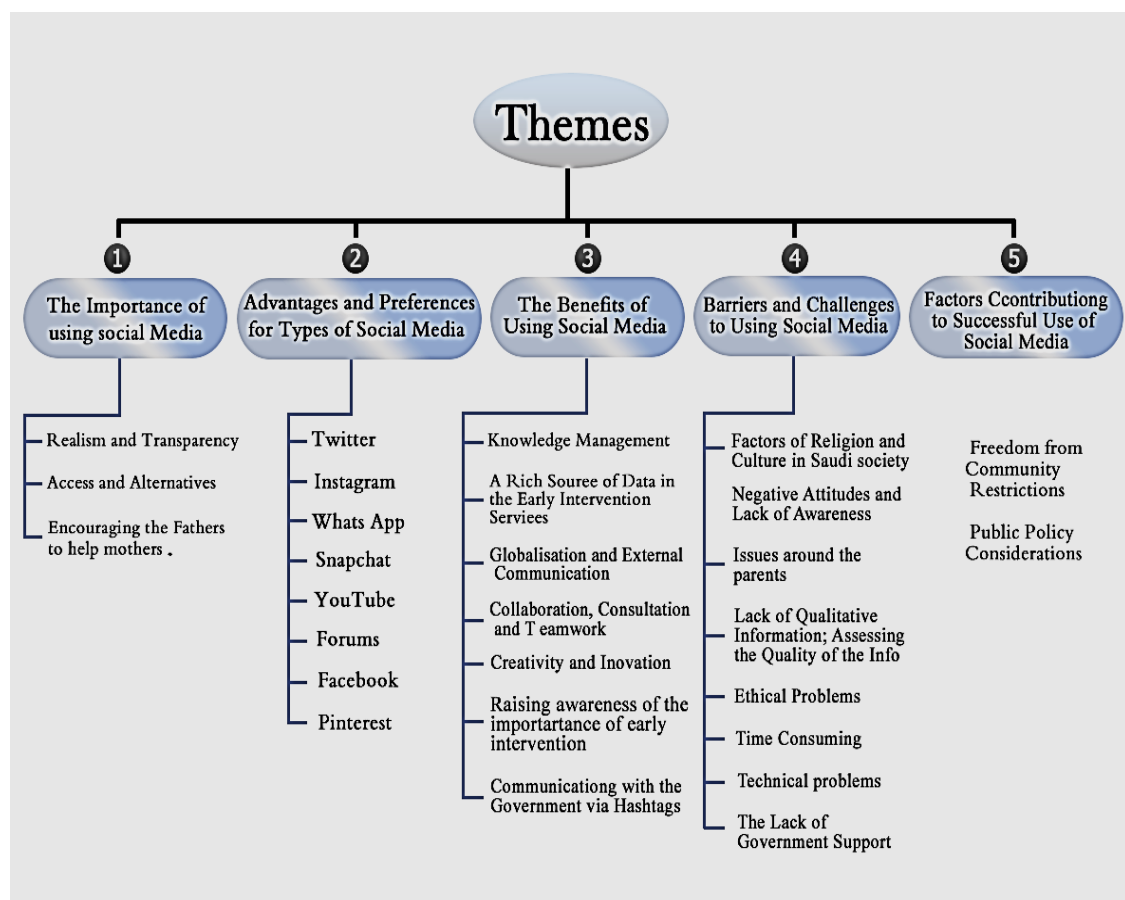


Figure 4.2 Mind map of themes

4.12 Reliability

Lutzhof, Nyce and Petersen (2010) define reliability in qualitative research as “the degree to which a finding is independent of accidental circumstances of the research and this depends on explicitly described observational procedures” (p. 539). Leung (2015) points out that the essence of reliability for qualitative research lies with consistency: “A margin of variability for results is tolerated in qualitative research provided the methodology and epistemological logistics consistently yield data that are ontologically similar but may differ in richness and ambience within similar dimensions” (p. 326). Yin (2013) also suggests that the operationalisation of the steps taken in the research is a way to ensure reliability. In other words, the methodology design, data collection, analysis and conclusions should be completely documented to allow other investigators to follow similar paths. Eisner (2017) also strongly stresses that a “good qualitative study can help us understand a situation that would otherwise be enigmatic or confusing” (p. 58). This comment implies that when transcribing the data collected, the researchers should detail how they collected that data and analysed it. Such an approach would also help other researchers working on related subjects.

To ensure the consistency of the procedures of this study, I carefully described the steps taken to conduct the research, such as obtaining official approvals and ethics of the application of the research, and the method of selection of participants, which was conducted through the management of the centre, thus removing any chance of bias on my part. In addition, the interviews were voice recorded and transcribed in the original language of the participants (Arabic) by a person working in the service of University students. Transcription by another person ensured that there was no bias on my part while writing the views and information from the participants.

The raw data was written without any modifications or changes to allow for the emergence of themes. This is consistent with Robson (2002) who emphasised the use of two techniques to ensure the accuracy of data in qualitative research: audio-taping and full-transcribing of all interviews, which I have done in this study to ensure the handling of comprehensive data and avoid any distortion or change in the basic content of the data. Also, the data analysis was initially undertaken in Arabic to ensure no meaning was lost in translation and to preserve “codes” in their real form without changes resulting from translation. Indeed, Twinn (1997) recommends using the original language of the participants in order to ensure the generation of successful results during the analysis phase of the data. Therefore, I was careful to maintain the analysis of all the data in this study in Arabic and only translated the final results in English. Thus, I could confidently ensure that the data was not affected by the translation factor which might have led to the loss of initial codes.

Given that the interview was the main tool for data collection for this study, replicating the study will not necessarily produce the same results. Time, place, style of interview, and the views of participants could be factors that affect the findings. Seal (1999) states that the “trustworthiness of a research report lies at the heart of issues conventionally discussed as validity and reliability” (p. 266). To establish trustworthiness, this research sought to understand the realities of the role of social media as interpreted by the parents and teachers of children with DS. Their contribution and interpretation were essential to provide trustworthy and valid results in the Saudi context. As the researcher, I was aware that the result of this study cannot be generalised to all contexts, but there is a possibility of generalising the underlying logic. I was also aware that this research provides recent information on the role of social media to serve the field of special education in KSA, which will add to the knowledge of those working and interested in these topics. The detailed description of the methods and data analysis of the pilot study and the main study will allow other researchers to conduct similar studies and apply some of the operations discussed in this thesis to their work.

4.13 Validity

According to Kvale (2007) "Validity refers in common language to the truth, the correctness and the strength of a statement. A valid argument is sound, well grounded, justifiable, strong and convincing. Validity in the social sciences pertains to the issue of whether a method investigates what it purports to investigate" (p. 122). Moreover, Guba and Lincoln (1989) make it clear that validity depends on whether the results have real implications for the perceptions and descriptions of participants. One way for the researcher to ensure validity is through “member checking” or “member validation”, which is achieved by returning detailed data to participants for validating. Chioncel, Veen, Wildemeersch and Jarvis (2003) underline that this implies that the transcribed data should be the response from the participants. Kvale (2007) points out that “communicative validity involves testing the validity of knowledge claims in a conversation. What is a valid observation or interpretation is ascertained in a discourse of the appropriate community” (p. 125) Also, he mentions that there are three forms of communicative validation: (1) member validation, (2) peer validation and (3) audience validation.

The validity of this study was verified in three ways. First, I performed “member validation” by emailing the interview transcripts to all participants. I asked them to check the contents. All the participants were satisfied with the transcripts and the data was deemed to be free of errors or additions. Second, I looked for “peer validation”. I was keen to ensure the confidentiality of the work in accordance with the ethics of the research. Peer validation was therefore limited to the relevant persons including my supervisor. He followed the progress of the work from start to finish and provided feedback that was of great significance in shaping this thesis. The comments and views of a senior academic are important to ensure that the work is undertaken in the desired manner with clarity and credibility.

Finally, for “audience validation”, I collected the reactions and impressions of the academic public, represented by doctoral students and a number of professors at the Institute of Education on the current study from the beginning of my application to the experimental study and the final write-up. My attendance and participation in conferences at the university and elsewhere, and also my involvement in workshops related to qualitative analysis or writing the results contributed to the thesis. I have benefitted from the observations and comments of the public. The constructive feedback led to the modification of some parts of the thesis; thus, adding to the quality of the research.

4.14 Ethical Considerations

According to Robson (2002), conducting research ethically “means that you follow a code of conduct for the research, which ensures that the interest and concerns of those taking part in, or possibly affected by, the research are safeguarded” (p. 18). Also, Blaxter, Hughes and Tight (2006) argue that “all social research gives rise to a range of ethical issues around privacy, informed consent, anonymity, secrecy, being truthful, and the desirability of the research” (p. 158). As a researcher, I was keen to address several ethical issues during the preparation of this academic work with my full recognition of the ethics of research at the University College London which emphasises the importance of ethics in research and provides guidance to its researchers during the implementation of their studies in line with the guidelines of the British Association for Educational Research (BERA). Therefore, as mentioned above, I gained official approval from the relevant institutions and authorities. Also, special consideration was given to the study participants. Therefore, I took into account the ethics of research through three basic stages during the course of this academic work, as follows: (1) considerations before the interview; (2) considerations during the interview; (3) considerations after the interview.

4.14.1 Considerations before the interview

All participants in this study, whether mothers or teachers, were over 20 years of age and competent to consent to participating in the study. As the researcher, I had explained to the administration of the daycare centre that it was essential that the selected participants understood the research so that they could give their approval by telephone before the face to face interview with me. Obtaining their informed consent was a very important step before the interview. Saudis can be reserved and sometimes unwilling to participate in studies but once they have given their consent, they will usually stick to their decision. If, on the other hand, they refuse to participate in a study, they will not change their decision. As a researcher belonging to Saudi society, I understood the need to respect the culture and desire of mothers and teachers; hence my explicit request to the centre’s management to obtain telephone approval prior to the interviews.

Second, before the interview, I clearly explained the general nature of the research and its purpose to the participants. I also clarified that any confidential information will not be disclosed. I explained that I would not publish any information that they did not want to be made public. In light of these points, it was made clear that the participants had the right to refuse to answer any questions.

Also, if they felt uncomfortable in any way during the interview session, they had the right to withdraw at any time, without giving a reason. The affirmation of these rights was intended to promote trust between the participants and me. Importantly, the participants were asked to sign two informed consent documents; one remained in their possession and the other one in mine. As mentioned earlier, I also made sure to translate the approval form into Arabic (Appendix D) in order to give them the opportunity to know about their rights in participating in this research. I secured their approval through their signatures. They also provided their email and telephone numbers in case we had to be in touch again.

4.14.2 Considerations during the interview

For the actual interviews, I carefully coordinated with the centre in order to be provided with a special place. As mentioned above, it was important to give the participants a sense of comfort and confidentiality while talking to me especially as the mothers and teachers have a working relationship with this centre. The place chosen was convenient and comfortable, away from the site management centre and children's classes. As the researcher, I was keen to build a friendly and comfortable relationship with the participants through general informal conversations and smiles. I welcomed them and offered coffee so that they would feel at ease and not worry or get scared about the interview with an academic. I also said that there would be a voice recording during the interview, which would later be written down. I further explained to them that they had the right to ask for the sound recording to be stopped for personal reasons or if they did not want the information to be audio recorded. Indeed, this happened in three cases where the participants spoke about very confidential personal matters. At those specific points, I stopped the recording and only listened to them. For the interviewees to feel comfortable, I showed interest through nonverbal expressions, intent listening and not writing any side notes. I wanted to make sure that my participants felt at ease and could express their views - whether positive or negative - in all honesty and transparency. All the participants were enthusiastic about the interviews and agreed to the information being published for scientific purposes and benefit the field of special education. They also confirmed to the mothers in the interview that they need to interact with researchers through interviews and hear their views and experiences on any issue of special education that concerns their children.

4.14.3 Considerations after the interview

After obtaining data from the interviews, I was careful as the researcher to conceal the names of the participants and replace them with general codes such as M1, T1, as described earlier. I also withheld any official papers showing the name of the centre or the participants' data. This ensured that anonymity and confidentiality were preserved according to research ethics. I also thanked the centre's administration and the study participants in a letter without mentioning any specific name or family.

The participants raised some pertinent issues in this research. Therefore, I asked the participants about the possibility of presenting some explicit and sensitive issues related to family or peers before writing the sound recordings. The participants agreed saying that it was important to have open discussions on sensitive issues in order to raise awareness about the nature of their work with children with disabilities. Also, the participants urged me to present my findings and the issues they raised so that the Saudi government and the relevant ministries could take necessary actions. They also specifically asked me to provide a real picture of the situation of the children with DS and highlighted the need for transparency and credibility.

To preserve the data, I used a high-quality recording device to store and save the interviews. My supervisor and I were the only people to have access to the recordings. Only data relevant to the topic has been used in this study. The remaining data has been kept safe and can be accessed by me for future use.

4.15 Chapter Summary

This chapter provided a detailed explanation of the most important methodological frameworks adopted for this study. The data collection methods, the data analysis procedures, issues of reliability and credibility, and ethics were also discussed. The data collection methods yielded rich data, as presented in the following chapter. As the researcher, I decided to provide a short narrative presentation of the interviews. The next chapter will therefore provide the individual responses of the interviewees. These will contribute to the reader's understanding of the topic and will lay the foundation for the emergence of codes and themes. The presentation will also allow other researchers to explore the most important issues raised by providers of services for children with DS, mothers and teachers. This may contribute to future qualitative studies on these issues in different contexts and provide theoretical frameworks for such studies.

Chapter Five: Individual Responses of Participants

5.1 Introduction

This chapter provides a summary of the individual responses, not a literal translation of what the interviewees said. In some instances, verbatim quotes are included. The goal of this chapter is to clarify some of the views, feelings, and backgrounds of participants and their attitudes on the role of social media in helping participants during the activation of EIS for children with DS. Since the current study is considered the first of its kind in the field of special education and social media in the Saudi context, it was deemed important to give the opportunity to providers of services such as parents and teachers to voice their views, feelings and demands on the issue of social media and early intervention services. Individual responses were organised in this study according to the group of participants. The first group consists of mothers referred to as M1, M2, M3, M4, M5 and MPS. The second group is made up of the teachers T1, T2, T3, T4, T5 and TPS. The codes were used to maintain anonymity, as explained in Chapter 4. In this section, the responses have been arranged in a specific sequence to make it easier to identify the topics reviewed. Each individual presentation includes a general introduction to each case in this study. For the mothers, the introduction includes the medical history of the birth of a Down Syndrome child. For the teachers, the introduction comprises their professional and educational background. Then the paragraphs begin sequentially with a focus on what the participants mentioned about their use of social media in terms of preferred types and reasons for preference, as well as the most used platforms, and the reasons for this and the pros and cons of using these platforms. Any further important information was then included.

Therefore, this chapter provides a social background and context to the responses and acts as a kind of preface for the reader to understand the themes and discussion in the later chapters. This individual presentation is based on a view of Stake (1995), who stresses the importance of describing each participant or situation in qualitative research in order to allow the reader to engage with the identity of the participants, their views and their feelings towards the subject of study. Therefore, I decided to give the interviewees individual attention in this chapter. I was keen to organise all the participants in this study in a coordinated sequence, so as to facilitate the reader's understanding and focus on topics related to the context of this study.

5.2 Responses of the Mothers' Group

This section presents the interviewed mothers' feelings, experiences, opinions and attitudes in response to the questions. The mothers were honest and open about their children's condition and their actual use of social media. This section also highlights the mothers' psychological experiences in response to the various situations they have been exposed to by members of the community. For example, the mothers spoke about the the harsh behaviour and words of doctors regarding the arrival of a child with DS, their views that these children cannot be taught or develop their skills and only need to be provided with food and hygiene and also, the ridicule from some members of society through social media. In addition, mothers also discussed the most important challenges they face within the family or when using social media platforms. They also raised many issues related to early intervention and social media central to the current study. The paragraphs below provide further details on the interviewees' responses.

5.2.1 M1

She has a university degree in social work and a diploma in electronic network technology. She has a 7-year-old DS girl, who is her first child. She was pregnant at an early age (in her twenties). The pregnancy was very normal, especially since this was her first child. M1 explained her painful experience at the time of her baby's birth when she received the news. M1 said she did not know that her baby had DS; during the birth she heard the doctor say, "It's Down's syndrome". She added, "It was my worst fear and I was terrified. So, I prayed".

Then she commented on her pain about the way she was informed at the time of birth, her silence and her sense of sadness. She explained that she had not been informed of the condition of her child during the monthly pregnancy tests. Her thought after the birth was to get a laptop in order to do a search on the internet. She wrote "I gave birth to a baby with DS. Please help me. How can I deal with her?" M1 explained that she received information and responses from a large number of other mothers in the public forums. Thanks to this interaction, she found a special centre that provided physiotherapy services for children with DS in the first months of life. This service helped to strengthen the muscles and improve movement for her daughter, who was able to walk at the age of one year and nine months.

M1 confirmed that she received psychological support from mothers whom she became acquainted with through forums. This interaction encouraged her to work and run her own search via social media for EIS. M1 also praised the Forum of Medical Genetics, which was one of the most active forums that helped her and served all parents of children with DS.

She also explained how the Medical Genetics Forum contributed to the creation of a link between the parents, the specialists and the doctors. Through such a link, parents could ask questions and get advice. In addition to publishing resources on how to provide EIS for children with DS, the Forum also offered accessible illustrated instructions for the application of life skills

and experiences based on information gathered from many mothers of children with DS and specialists.

M1 praised the Medical Genetics Forum by saying that it “is reliable source of scientific information, and also releases books and brochures annually focusing on EIS”. However, she criticised some forums which were less often updated and less active. Some of those forums also contained incorrect information (for example, “children with DS will die at an early age”), which can be damaging to the parents and children. M1 also confirmed that she was keen on self-learning in order to help her child through the experience and also to benefit from the experiences of mothers and friends in the family. She noted that initially she did not use social media effectively. She used to visit centres for disabled children, and she tried to meet specialists in special education to look for information.

M1 described her efforts to help her daughter before and after using social media :

Prior to the emergence of social media, I had to go personally to the ministries concerned with the services for my daughter, such as the Ministry of Health or the Ministry of Social Affairs, in order to understand the civil rights of my daughter; also, to know what services should be provided for her and to answer my questions about my child. By using Twitter, I am now able to communicate with specialists, within the Ministry and the government from my home.

She explained that before she started using social media with regard to her daughter's condition, it would take a long time for her to obtain the necessary information and for any required actions to be taken. Social media enables her to save time when it comes to gaining access to the correct information and taking the right steps for her daughter.

M1 began to have an active role in social media when her daughter was 4 years old, in order to help existing and new mothers with children with DS. In the interview, she explained that she used social media for herself and also to help others. First, she did not want other mothers to experience the same difficulties as her due to the lack of early intervention services in KSA. The special services and language therapy provided to parents are costly. Hence, it is important to offer parents advice and expertise that will help them to gain access to early intervention services such as language training, development of motor and other cognitive skills.

M1 added that the sooner a mother learned about EIS, the less money she would spend on going to private centres for physical therapy sessions or language support. Such advice on EIS would reduce the financial burdens on parents. Therefore, she set up three different chat groups on WhatsApp. The first group was for exchanging information between mothers and professionals, the second group enabled the mothers to share their own experiences with one another; lastly, the third group chat was designed to announce and advertise useful events and seminars about children with DS and encourage mothers to attend and to participate. M1 expressed her great admiration for WhatsApp, through which she worked with a team of volunteers to set up groups in Riyadh and then expanded to various regions of KSA and Gulf

countries such as Kuwait, Qatar, Bahrain, the UAE and Arab countries such as Morocco. M1 also explained some of the positive aspects of the use of WhatsApp: it helped to spread invitations to attend the awareness-raising events and provided free consultations by specialists in the field of special education within the community. In addition, the groups which used WhatsApp helped to exchange information and experiences related to the health condition of their children, to raise awareness among new mothers and to support parents psychologically.

In addition to the emergence of co-operation between mothers and voluntary workers, M1 explained that the use of social media enabled mothers to form voluntary teams to help each other. One of the most important forms of co-operation through WhatsApp was that mothers in Riyadh assisted other mothers in remote villages. For example, when mothers in rural areas receive prescriptions for medicine that are not available in their local free pharmacy, they have to pay for these medications which are very expensive. Instead, they send images of the medicine via WhatsApp to mothers in Riyadh where the hospitals and drug store have a larger inventory of free medications. The mothers in Riyadh then post the medications to mothers in the village. Clearly, this is an important and valuable service for mothers who live in rural areas.

On the other hand, M1 strongly criticised the lack of financial support from state departments such as the Ministry of Social Affairs, which should assist voluntary groups on social media during the regular meetings and events on the World Down's Syndrome Day (WDSD) on the 21st March. Based on her experience as a supervisor of the voluntary teams on WhatsApp, she explained that the organisation of meetings for people from different regions of KSA, with face-to-face interactions and interviews with specialists was costly. Accordingly, volunteer coordinators themselves paid the costs of equipment and many other expenses. Although significant financial support is available from the government for people with disabilities, there is currently no organisation or body managing these financial resources.

M1 also explained she worked with a group of mothers in a volunteer team in order to help spread awareness of DS in young children and to further enhance their own knowledge. Different roles were created within the group and each member had a role based on their strength. For example, one mother had strong language skills and spoke fluent English, therefore her role was to translate. YouTube clips and other audio clips and to distribute them amongst the mothers.

Another mother who had strong connections with people in the government sector was allocated the role of working around communicating the needs of the group to the government. However, M1 reported that some mothers in the WhatsApp groups displayed frustration and negative attitudes towards the children with DS; they cited some frequent examples in their comments:

These people will not learn (...) We cannot help them (...) There are no early intervention centres; this is the problem of the government (...) don't bother yourselves (...) God help them (...) We will not be able to help them.

M1 presented her own way of dealing with the negative responses of the mothers with children who have DS: "I try to correct them and provide them with my own experience with my child and explain how early intervention benefitted her greatly". Furthermore, M1 explained that she would sometimes get a positive reply and her interaction with the mothers helped to change their ideas and mindset. But some mothers would continue to vent their frustrations and failures, so she would attempt to talk to them in a private chat. If the mother continued to be negatively influencing others in the group chat then she would be blocked and removed from the group chat. In addition, M1 stated:

I do not want to hear their disappointment and negative attitudes that are neither constructive nor useful. I want to work with mothers who are brave and have a positive outlook on their situation and children.

M1 offered her experience while using Instagram, where she had set up a special account for her child, showing all the pictures of her child taken while performing her daily activities at home and at school. In addition to presenting her personal experiences while working with her child, she also reported that her goal when using Instagram was to encourage a change in the negative attitudes of some members of the community around children with DS. She said she received a lot of enquiries when people watched her daughter's account on Instagram; for example, their questions and their surprise were evident in their saying, "These are reasonable! We thought they were crazy but this is not true; they are beautiful children". Despite the positive and encouraging comments, M1 was sad to observe that some mothers were reluctant to talk about their children's health situation. She cited an example of a mother in the city of Jeddah who did not tell her husband that her child had DS for 4 months, for fear of divorce and conflict within the family.

Fortunately, M1 managed to make contact with her by Instagram and she was able to invite her to attend free psychological counselling in Riyadh. As a result, the mother came to Riyadh with her husband and met with the psychologist and resolved all maternal fears and gained the support of her husband. M1 also added that posting her daughter's pictures on Instagram during her training had encouraged other parents to learn to accept children with DS and support rather than neglect them:

I received a message via Instagram from a father who said that he and his wife hated their child and felt unable to help him, but when they saw my work and effort with my daughter, it gave them hope and strength to try to help their child.

M1 also compared WhatsApp and Instagram, saying that the use of WhatsApp was based on written conversations, but Instagram helped convince people with illustrated evidence of the factual diaries of children with DS.

Twitter was also used as a tool to communicate and educate. M1 said that Twitter was used by a large number of specialists in the field of special education and academics, and this helped the mothers to have access to free consultations and receive responses to their urgent enquiries. The specialists included doctors based in and outside KSA. M1 explained how she used Twitter to communicate with doctors outside KSA:

Through Twitter, I found a doctor in Germany and then travelled with my daughter there to get help concerning her sensory perception which she had issues with as well as developing her motor skills. My daughter took advantage of these services and I gained a lot of information and experiences and conveyed them to mothers in KSA.

According to M1, Twitter is useful for communicating with the government through the Hashtag and the delivery of claims to the Saudi government, which usually gives an immediate and satisfactory response to the demands of the people. However, M1 and some other people who used social media have tried to communicate with the Ministry of Social Affairs about the lack of disability centres and early intervention services in KSA, especially in the southern regions. But the Ministry of Social Affairs does not fulfill its duty and puts the responsibility on the shoulders of the business companies to establish these centres. This response shocked M1 as the Ministry had the financial resources necessary to set up these centres.

Although M1 used various social media platforms, she claimed that some were more useful than others. WhatsApp was the first choice, then came forums, Twitter and YouTube. In the case of YouTube, she indicated that she only followed American mothers during training sessions with their children. All these forms of social media have made communication faster and easier between parents and specialists such as doctors, physiotherapists, occupational therapists and psychologists. In M1's view, social media has been essential in raising awareness about DS and the rights of children with special needs. With social media, it is easier to learn about activities and hear about seminars for children with DS. Social media also contributes to facilitating access to information to mothers and introduces them to important legislation that serves their children's interests, especially in rural and remote areas, where special education services in general, and early intervention services in particular, are more isolated. She also pointed out that the services of physiotherapists and occupational and speech therapists were popular with mothers who have children with DS in KSA. Through social media, those mothers were able to engage with the relevant specialists via video clips and chats. In addition, they could learn about some common issues such as nutrition and breastfeeding.

M1 explained:

There is no excuse for parents to say that there is a lack of EIS in Saudi Arabia, because these days, thanks to social media, all families are able to use the media to serve their children ... personally, my child did not attend any early intervention service, except attending hospital visits; however, I was able to provide her with all the correct training using social media.

For her, it was clear that social media had a lot of advantages: “Whoever tells you that he does not benefit from social media, do not believe him”.

Although social media has numerous benefits, there are also some concerns about its use. For instance, M1 highlighted the issue of unethical competition among supervisors of social networking sites. She also explained that her email was hacked and her information was stolen. Moreover, M1 sometimes feels that she spends an unreasonable amount of time on social media to the detriment of her husband and children. She feels guilty about this situation. But as an active member of the groups she has created, she has to be available.

She explained:

My husband is very helpful and does his best to help me, and I feel sorry that when he wants to spend some time alone with me I am constantly on my phone which upsets him.

At the end of the interview, M1 made a comparison between social media and mass media which did not serve mothers as they had hoped. For example, television programmes in KSA that centre around special education are sometimes censored; therefore, there is no clear and real representation of the situation of children with DS. TV channels sometimes broadcast the meetings between state officials and children with DS. This presents a good image of the government. But often no serious action is taken after such meetings. There is no obvious effort in raising awareness or encouraging parents to provide early intervention services for their children. In contrast, social media provides a clear image and realistic representation, without any restrictions; also, it helps to raise awareness of children with DS and their needs. In addition, social media has become a trusted reference point for parents, specialists, and the general community. It has even become a way to contact and communicate with the government. According to M1, it is therefore an essential tool for parents with children with DS.

5.2.2 M2

She is a housewife with an intermediate degree. She has eight children. The youngest child, a boy with DS, is 8 years old. She was pregnant with him when she was in her forties. She said that carrying this child was different from the other seven pregnancies. She remarked, “I feel great love for my child compared to his other brothers”. She added that the baby was born by means of a Caesarean section and stayed in the hospital for 7 days during which time many tests were conducted. No one told her that her child was suffering from DS, at the time when she was discharged with the child. During this period, M2, her husband and all the family members still did not know that their child had a disability. Compared to her previous experiences with his brothers, M2 noticed that he had trouble feeding, showed no feelings of hunger and he did not cry much. She also said that her child's body was different from the rest of his brothers: he was softer.

M2 pointed out that soon after coming home, her child had high temperatures and had to be taken to the emergency ward in the same hospital where he was born. The specialist doctor in the emergency department said, "How did the paediatrician allow you to take the child out with you to the house? The child has DS and has holes in the heart". M2 said the emergency department doctor asked her if she knew about her baby's condition; she explained to him that she did not know anything. The next day she asked to see the paediatrician who had overseen the birth of the child. M2 reported the paediatrician to the authorities. She was upset when she asked him about her child because he said, "It's normal that your child is tired. He's a Mongolian". During the interview, M1 expressed her pain and sadness at the lack of empathy and understanding from the doctor. He did not take her feelings into account.

She added:

I have always hated the word Mongolian and reject its use within my community! How can I hear them now speaking about my child like this? What this doctor says is shocking!

M2 also indicated that she and her husband filed legal cases about how the doctor had treated them at the hospital and how he had endangered her child's life. She confirmed that the family suffered a great shock — especially his older brothers — who were very upset about the situation. In addition, she expressed her feelings at that moment by saying, "I could not cry (...) I was more silent and thank God for everything because my child is a gift from my God". M2 strongly criticised the behaviour of some of the doctors in hospitals during the delivery of medical services to her child, quoting the words of the doctor who told her, "Your child is Mongolian...just give him food and comfort, you can't expect him to have a bright future". In this context, M2 suggested the importance of educating doctors and training them how to deal with mothers and transmitting the news of disability before and after birth. She also stressed that it was unfair to judge children and their abilities. Such an attitude may lead to feelings of frustration for some parents and reduce their motivation and ability to provide assistance for their children.

M2 said that the immoral behaviour of some doctors was a great motivation for them to raise awareness among the community and support mothers of children with special needs. Also, she was strongly motivated to help her child based on her previous experience with the families of people with DS, who did not provide EIS, thus exacerbating the children's disability. Therefore, M2 and her husband decided to seek EIS. M2 confirmed that her husband helped her because he knew English by virtue of his career and also because he had retired from work. The father became responsible for searching the Internet to learn about the most important centres providing EIS for their child.

Through this research, the father got to know the "Medical Genetics Forum", which played a major role in the family's awareness of physical therapy centres in Riyadh when their child was 6 months old. This forum especially helped them when their child was very young. The forum still provides useful services for parents of children with DS. M2 further stated that her husband became a member of the co-operative and volunteer team in this forum. Examples of the activities of this forum include the publication of awareness leaflets on how to deal with children with DS, the printing and distribution of annual books written by a large number of specialists in the field of special education and other related fields such as psychology, physiotherapy, occupational therapy, and speech therapy. The content of these books is based on the practical experiences of parents with children with DS (from the age of 1 to 5 years) and specialists. The books are very useful in that they adopt a practical approach rather than a theoretical approach, which is common in traditional books on DS.

M2 added that her husband and several volunteers in the forum were keen to distribute these books free of charge and pay the financial costs of the express mail service to ensure that they reached all the beneficiaries of children with DS in KSA and also in some Gulf countries such as Kuwait, Qatar, Bahrain and the UAE. She stressed that there was a great demand for these types of books from Arab countries. However, there was no financial support from the government or from ministries such as the Ministry of Social Affairs, so the volunteers had to bear the financial costs of printing and distributing the books. Even though the Medical Genetics Forum had been of great help to M2, she criticised the current status of the forums and pointed out that there was a lack of updated information in some forums.

M2 reported that her husband had a major role in encouraging her to use social media. She started by using Twitter:

Twitter is a reliable scientific reference; it is the most useful means of communication that is of public interest because it has a large number of doctors and specialists and a general community. It is even more useful than Instagram and Snapchat.

During the interview, M2 added that she considered Twitter to be the best choice at present, followed by Instagram, Snapchat, and finally forums. She preferred Twitter because it was a very effective way to communicate directly with doctors and specialists without having to book advance appointments and wait for a long time. There was also no delay in getting a response. She also stressed that Twitter facilitated her consultations with specialists, making them faster and easier. She added that it was useful to find references to reliable information and academic experiences. In addition, she strongly believed that Twitter searches through Hashtag (#) contributed to the delivery of sensitive issues and problems and demands from the parents of children with DS to the government directly and very quickly.

M2 compared using Twitter to communicate with the government via Hashtag and traditional government transactions that took months or even years to reach the government or state officials: through Twitter, demands were delivered quickly. It was more important to M2 that the demands of the parents were met as soon as possible. She added that despite her preoccupations with the home and raising her children, she still helped her husband to search for solutions or scientific information from specialists on any problem she faces with her child, whether behavioural, social or academic.

In addition, she established friendly relations with a large number of mothers and specialists in the field of special education and specialists in areas such as physical therapy and speech therapy. She even managed with her husband to communicate with people who had DS outside KSA, mainly in Jordan and Qatar. M2 described her experience with an Arab family from Jordan whom she met through Twitter. The family had twin sons with DS aged 48. M2 visited the family to see their daily lives and to experience how they coped with their sons. Previously she had heard that children with DS died at a young age and was worried for her own child. However, her meeting with the family changed her perception:

I have been hearing wrong information in the forums that children with DS do not live long; but through my visits to people in Jordan and Qatar, I felt comfortable because people with DS can marry, work and live longer, like any other ordinary people.

In addition, her communications outside KSA provided her with useful practical information on daily issues. For example, she said that through Twitter she was able to find out about the best booster seat for her son and also order it from outside KSA. She posted pictures of the product online, which led to multiple people asking her where and how she had acquired such a useful and high-end product. Therefore, M2 shared the information with them. She added that her husband's knowledge of English was an effective factor in helping her access information outside KSA through Twitter. In fact, she learned about the information and experiences provided by mothers in America, London and Canada. She stated that she had benefitted from information on EIS used in developed countries. She compared the contents of the information on the global sites to those on the Saudi sites.

The global sites provided more information and had more activity from users. Her husband also carried out voluntary work in translating the relevant sites and sharing them with mothers of children with DS on Twitter.

M2 stressed that her husband played a major role in helping her to relieve tension and deal with any enquiries that other mothers had. Although her husband's health had been affected by his frequent use of Twitter (he was exposed to neck friction), he was still an active person on social media. Once her child was older than 8 years and had gone past the early intervention stage, it was no longer necessary to spend that much time on social media. M2 stated that the significant amount of time devoted to social media had affected her other seven children.

Furthermore, M2 expressed sadness at the negative views of some of her relatives. Some felt pity for her and said that her child would be a burden for her: "God help you with your problem ... God give you patience with this problem". Therefore, M2 tried to change this view by using Snapchat and adding 200 family members with their own account. Snapchat contributed significantly to changing the negative attitudes of her relatives because of their familiarity with the child's abilities from the early stages of his life. She said, "I was making clips of my child from his young age until now. He plays, pronounces, eats, dresses and helps arrange his room".

However, in the old version of Snapchat, images are lost and cannot be saved -unlike Instagram and Twitter. M2 also referred to the role of Instagram in raising awareness of DS in society. Together with her husband and her older children, she managed to form a team to raise awareness about their child's condition and help other parents of children with DS. The family members of volunteers work as groups to promote awareness of DS through social media platforms such as Snapchat, Instagram and Twitter.

M2 explained her experiences when using Instagram. She communicated with many mothers and shared with them techniques to train their children in several important issues and essential skills in early childhood, such as nutrition, muscle strengthening, speech training, and strengthening of fine motor skills. M2 has also benefitted from the expertise and information of language and speech therapists, physiotherapists and occupational therapists who have played a major role in helping her to practise certain skills with her child at home. She also added that she downloaded videos from Instagram, showing her child's performance in some of the skills she had trained in, based on the information gained from specialists. M2 found many other mothers asked for her advice. In addition, M2 stated that she used Instagram to inform other mothers about important conferences and scientific symposia and meetings for people and specialists who deal with DS. She cited the example of the (WSDS). M2 also explained that she recorded the lectures and seminars deemed useful for children with DS. These were sent through Instagram to many mothers who could not attend the meetings, such as mothers with family commitments, or those living in villages and areas that do not have early intervention services and schools for special education.

Furthermore, M2 was surprised that some of the mothers did not understand their children's civil rights, in terms of free education and training in special education schools, access to all community facilities, to a monthly subsidy, to a car and private driver, or access to a nanny where the government will pay all the financial costs of the family. She cited an example:

There is a child who is 6 or 7 years old and his father keeps him at home and refuses to register him with the Ministry of Social Affairs and deprives him of his rights for fear of shame; the mother is ashamed to take her child out in society!

M2 felt sad for such parents and she wanted to raise awareness about DS through social media platforms such as Instagram and Twitter and also to explain to them the range of services available to them and the rights of their children. M2 pointed to the fact that she did not use WhatsApp often. She believed that the group chats in WhatsApp included too many participants, e.g., 60-200 mothers. Thus, messages were exchanged very quickly and it would be hard to keep up with the exchanges. According to M2, there is no scientific information on WhatsApp compared to Twitter, no discipline in the presentation of topics and there are many chaotic WhatsApp groups. It would be more organised if the group manager was experienced and was able to manage everyone, especially the large numbers of participants. Also, some of the participants in the chat would go off topic by talking about other issues instead of the children. M2 felt that a group chat should only include up to 10 mothers, thus making it more organised and efficient. She also stated that it would be beneficial if the chat was supervised by a specialist in special education as a reliable source of information and to prevent mothers passing on incorrect methods and information. She added that another problem that occurred during the WhatsApp chats was the comparisons between children:

When one of the mothers in the WhatsApp showed that her baby was able to speak or move, the other mother began to feel frustrated and upset and asked why my baby did not develop like your child, although I used the same method of training.

M2 benefitted from WhatsApp by identifying a large number of mothers who agreed to meet in public places such as gardens and bring their children to play together. During those meetings, the mothers shared experiences and discussed solutions to the everyday problems of children with DS. She added that mothers who were not highly educated could easily access information on WhatsApp. However, she warned against false and incorrect information on WhatsApp and other social media platforms. She believed that officials must update the information.

Also, the negative comments of some unsupportive mothers discouraged other parents from teaching and training their children. M2 was most distressed by the negative attitudes of some members of the community on Instagram, when they were shown a video of a child with DS being trained to eat. For example, one member commented: "Your son eats like an animal!". Such comments caused negative feelings between different parties on social media. While some mothers had the courage to respond and defend their child, others were affected by these comments and completely withdrew from participating in the group or posting pictures of their children with DS.

This deprived them of the opportunity to help other mothers and to raise awareness. Furthermore, according to M2, there was an unethical competition among volunteer leaders who tried to portray a positive image and attract the attention of the community.

M2 criticised this phenomenon, which did not contribute to collective action and led to a lack of a concerted effort to serve children with DS. Therefore, she suggested that there should be monitoring bodies from the Ministry of Information to supervise the accounts of Twitter and require that the owner of the account be known and a specialist in the field of special education or other related areas. Such a measure would prevent the entry of intruders who may be using pseudonyms aimed at media fame and at exploiting the situation of the families with children with DS.

In addition, M2 highlighted the importance of having a reference authority for the department of Special Education. This authority should specialise in monitoring the information contained in social media and should correct any wrong information that may affect the right of parents with regard to EIS in Saudi society. M2 concluded her interview with these words:

Social media is a blessing, but unfortunately a few people do not know its value, and it is a double-edged sword with benefits and harm. I hope that we will take advantage of its benefits for the good of our children and we hope that the people and the specialists will write honestly and sincerely... For our benefit for all those who need it inside or outside KSA.

M2 added that the mothers in KSA had a major role to play for the current development in, and increased use of, social media as a tool for children with DS. Mothers are taking the initiative to ask questions and demand EIS. They use the internet and social media to educate themselves about DS and to disseminate their knowledge and experience through Twitter and Instagram in rural areas that have no special education services. She also stressed that the presence of mothers and their interaction by means of social communication was a direct result of the increasing number of academics and specialists in the field of special education and other areas such as psychology, Sociology, physiotherapy, occupational therapy, speech therapy and others. In addition, according to M2, thanks to social media, Saudi society has become more aware of DS. However, she added that more effort had to be put in raising awareness about DS and educating people about the importance of EIS and special education.

5.2.3 M3

She is a housewife with a university degree in English language, who preferred to stay at home to take care of her 4 children: two boys and two girls. The boys are twins aged 8 years and 6 months: the second twin has DS. The mother explained that when her daughter turned 10, she thought of pregnancy again, forcing her to take stimulants such as CLOMID (a fertility drug often used to help encourage more regular ovulation). Pregnancy then occurred with twin boys. During pregnancy, she noticed changes in the size of the second child. The doctor told her that he was smaller than his brother. During the last phase of her pregnancy, M3 was worried about her children. Her twins were born by Caesarean section. M3 explained that she knew that her child had DS the first time she saw him. M3 confirmed that she had background information about cases of DS because of her 30-year old niece with DS.

M3 said she did not feel any shock; she just thanked "God" for everything. She was thinking more about how to help her baby and how to provide early intervention services faster. M3 said she was interested in getting her baby to early intervention services because of the experience of her niece. Her niece's mother (M3's sister-in-law) was very aware of the importance of early intervention because of her American background (her father is American and her mother Mexican):

My brother's wife struggled to help her daughter due to the harsh conditions in KSA 30 years ago and also the lack of effective special education services, compared to what is currently available. My brother's wife had a role in opening a special centre in Riyadh for DS and she raised awareness among a large number of people. I hope she lives to see the progress that has occurred and will occur in the special education field, as well as the positive changes for the families of children with DS. I am so grateful for her.

M3 also explained how she began to search the Internet until she found a Forum called "Inherited Medical". She praised the efforts of those who created such an integrated forum with valuable information and the experiences of many parents of children with DS. It is a popular forum among families who have children with DS. Unlike other forums, the information on "Inherited Medical" is up-to-date and discussions are encouraged.

During her research, M3 found an account of a mother who was documenting the steps of training her child from birth upto the age of 5. M3 confirmed that she began to see and apply all the information and advice with regard to feeding and nutrition, development of motor skills and strengthening of the muscles with very simple home exercises. M3 also obtained useful information from a famous mother on Instagram, who encouraged her to follow up a large number of mothers and to communicate with them via Instagram and also WhatsApp. M3 followed a child in the UAE, whose family had added his diary in detail. M3 received psychological support and acquired many creative ideas on how to train her child in language, motor and behavioural skills. M3 was impressed with the posts on Instagram, especially from mothers outside KSA, such as America or Canada. She followed posts on exercises that mothers used to develop the language, motor and behavioural skills of children with DS and also participated in the discussions in these sections.

M3 said:

I have benefitted greatly from the experiences of mothers and their great efforts. I was reading and watching Instagram, WhatsApp and forums and my tears sprang from the joy that I was not alone and that the process of training my child at home is easy.

M3 added that the situation of her child was easier than some cases of DS, because her child did not suffer from heart problems. However, he had speech problems, which led the mother to use Snapchat, Instagram and Facebook to communicate with the speech specialists:

I got to know a very famous language and speech specialist on Snapchat in Kuwait, following her lectures and training directly. I also met a female therapist from Egypt through Facebook and I followed her with a series of exercises. As for Instagram I have a large number of language and speech specialists in KSA.

M3 confirmed that she benefitted from watching the language exercises and applying them directly with her child and said that she saw the positive changes in her child. She added that through Facebook, she met a mother in Egypt who produced training tools for her child from household raw materials. M3 exchanged ideas and developed creative ways to attract children's attention and train them in language skills and daily life skills such as eating. In addition to benefitting from Facebook, the follow-up physical training exercises were provided by specialists.

M3 described WhatsApp as her favourite social media platform, followed by Instagram, Twitter, Snap Chat, Facebook and finally the forums. All these forms of social media provided her with the opportunity to share and exchange experiences with many mothers and specialists in the field of special education as well as doctors, physiotherapists and speech therapists. Through WhatsApp, M3 was able to co-operate and interact with three groups: (1) mothers of children with DS in all regions of KSA and the Gulf countries; (2) mothers of children with DS at the centre where her child was being trained; and (3) mothers under the supervision of a specialist in psychology and education. This last group was designed to prepare mothers and train them in how to deal with their children in adulthood before problems occur.

Through WhatsApp, M3 confirmed that she was able to learn how to help her child to acquire linguistic and motor skills and modify his behaviour. She was also informed about forthcoming lectures and events on DS. She praised the mothers and teachers for sharing this information. In addition, she could check the times and dates for family counselling by specialists in the field of special education on WhatsApp. M3 valued WhatsApp as an important tool in the training of her child and in her own well-being:

In the WhatsApp groups, I feel that we are a family. We exchange feelings, anxieties, joy, and observe the beautiful voluntary work of some mothers, teachers, speech therapists and physiotherapists.

However, there are issues with using WhatsApp. M3 revealed that she would compare the performance of her child with that of other children. She was able to overcome this problem thanks to a teacher of special education, who explained that each child had strengths and weaknesses; and as such was unique and should not be compared with others. Another problem was the increase in the number of mothers using the WhatsApp groups, ranging from 100 to 200. This has affected the quality of the discussions because some mothers tend to use these groups for daily chats rather than the subject of EIS experiences of DS. Also, some mothers have negative attitudes and criticise their children. For example, one mother wrote "hit the child if he does not learn". M3 responded:

When I find mothers in groups who do not respect the purpose, or who try to frustrate us in negative terms, I had to delete those groups and add a new group that was more active and effective.

Furthermore, M3 found that Snapchat was a useful means of communication: she posted pictures and clips of her child to a large number of mothers in order to allow them to follow the development of his language skills and daily exercises. She explained that there were interactions and responses from other mothers. She also confirmed that Snapchat operated as a tool for distance learning through workshops broadcast live from some Gulf Arab countries such as Kuwait (3 training sessions per week for 3 months). M3 recorded these workshops, which were provided by a famous speech specialist.

M3 also spoke about the role of Twitter as a reliable reference source for information and expertise of specialists in EIS. Twitter was used for direct communication with the government, especially with regard to the needs of parents. In addition, she was able to consult specialists quickly and at no cost because there were many consultants offering services free of charge on Twitter.

Although M3 has benefitted from social media, she thought that there were several problems with their use. Like M1 and M2, she spent a lot of time on social media and this had affected her family life. In addition, she was distressed by the use of socially unacceptable names for children with DS or those from low-income backgrounds, for example: "Mongolian, disabled". In this regard, she stressed that the most shocking aspect of social media was the circulation of these names between doctors in hospitals and in their personal accounts on Twitter:

I remember seven years ago the doctor tells me "your child is a Mongolian" and I corrected him with the scientific name: Down's syndrome, which was first attributed to the doctor who discovered this disturbance and the chromosome. I am surprised these days by another hospital doctor saying your child is a Mongolian! I've had to repeat the same thing for 7 years. It is really annoying.

She added:

Doctors are repeating incorrect statements about the children with DS because they will die at an early age and this is completely illogical because it will affect the psyche of the families. Thanks to recent information on social media and a group of specialists who are keen to update their information.

M3 concluded that there was a need for higher committees at the state level to raise awareness of DS in Saudi society. Also, according to M3, the services in early intervention should be increased. These services should take into account the role of social media which can become a reference point for supporting people who cannot access services.

Finally, M3 said:

As mothers we aspire to a better future for our children.... I worked personally to help my child with the help of my husband, despite the lack of early intervention centres in Riyadh. However, social media was the best support for me when I needed a lot of information and to understand the correct scientific methods.

5.2.4 M4

She has a Bachelor's degree in nutrition and home economics, with 12 years' experience as a manager at the Centre for DS in Riyadh. She has 4 children: 3 sons and a daughter. She explained that when she was in her thirties, she gave birth to her third child, born with a genetic disorder called XYY Syndrome. She then had her fourth child: a daughter who has DS, who is now an 8-year-old.

During the interview, M4 said her pregnancy was normal and doctors in KSA did not explain that her daughter had DS, even though the mother had previous experience with her XYY child. She felt her child had a chromosomal disorder but was not told during the monthly examination M4 said:

I expect doctors in KSA to know that the foetus is abnormal, but they do not want to tell the mothers, because some doctors feel that mothers need comfort and you should not to tell them that they will have a special needs child and it will affect their psychology. Although I see that a mother should be told about the status of her child to prepare the subject for her and awareness before birth. I believe that some doctors in KSA have no communication skills or they lack the ability to deliver the news to mothers that they will have children with special needs.

M4 said that since she had a family home in Switzerland, she spent her summer vacation with her family and knew the hospitals there where she had given birth to her older children. She decided to travel to Switzerland and meet a doctor there who confirmed that her child had chromosomal dysfunction.

The doctor knew that as a Muslim, M4 might not want to abort. But as a professional, he said that he had to inform her of her right to abort the girl if she wanted to, but she refused to do that:

When the doctor told me, I could abort my child, I did not think about the religious ruling, but I thought about my motherhood, this is my child and a gift from God; I will accept her and I am satisfied with that.

M4 felt comfortable with the situation and decided to proceed with the birth in the same hospital as her previous deliveries. The child was wrapped in the umbilical cord at birth but survived under the proper care of the doctors. M4 was impressed by the service in Switzerland which was very different from that in Riyadh:

I remember when I was in private care and after my sleep, I found a nurse next to me and I created for my child an outfit made of wool with my child's name written on it. I have felt joy and happiness and gratitude for this feeling.

She added:

There was a very wonderful coordination between the medical team that cared for my child and the preparation of schedules and medical appointments under the supervision of a paediatrician. This is contrary to what I find dispensed in some hospitals in Riyadh where there is no doctor responsible for following the child from the beginning to the end of the diagnosis.

M4 did not cry initially. But when one close friend from KSA spoke to her, she cried and expressed her anxieties. At the same time, she said, “as I cried, I used to say inside me this is not the time to cry but the time to work with my children”.

M4 did not feel she was floundering with her daughter; on the contrary, she was provided all the services of early intervention. M4’s experience working with her XYY-born son had given her the knowledge and confidence to provide EIS at home for her daughter. Visits to early intervention services in Switzerland such as medical services, physiotherapy, occupational therapy and speech therapy were also useful. Her daughter has acquired many skills and she is preparing to participate in the World Olympic Games for children with special needs. She said:

I learned from the early intervention centres in Switzerland. I recall these beautiful words, which I considered a strong slogan: If you treat your child differently, she will be different. If you treat your child as normal, she will be normal.

M4 confirmed that she had personal experience of EIS in Switzerland due to her frequent visits. During the interview she compared these services with what was available in KSA. She explained that there was a significant difference in the treatment and services provided inside and outside KSA. Early intervention services in Switzerland are delivered in an organised and appropriate manner with respect to the individual needs of each child. Although these services (such as medical treatment, physiotherapy, speech therapy, psychological services) are available in KSA, they are separate. There is no centre in Riyadh where all these services are provided together.

M4 also confirmed that there was no co-ordination between the employees at the centre:

I feel shocked and upset when I go to the doctor and have to explain to him my children’s situation and remind him of what the other doctor gave them on previous dates.

M4 also said that some early intervention centres in Riyadh did not have occupational therapy, which was very important for the training of children in their early years. Many families are unable to pay for the costs of these services privately, as she explained:

My special centre is able to provide all early intervention specialists where I have nursing staff, a physiotherapist, functional treatment, speech therapy, and psychotherapy. I am trying to transfer external expertise to Saudi Arabia through my own centre, which I hope will be applicable.

On her use of social media, M4 stressed that she used English sites more than Arabic ones because they were more up-to-date with information and activities. In addition, there was a large-scale interaction with mothers of children with DS in America, Canada, Britain and Switzerland. She has become friends with many foreign mothers and specialists. She said, “I’ve learned a lot about EIS by watching videos and training on global social media”.

For M4, Instagram was the primary means to communicate with mothers throughout KSA and answer their enquiries and help them. Then came Snapchat, which was especially used by members of her family and also by the teacher who looked after her children at the centre. M4 said she posted clips of the behavioural issues at home so that the teacher could gain further insights into the child's behaviour and address any issues.

M4 also found Forums and YouTube useful. She benefitted from the experiences of mothers and also learnt about the latest methods of training in language skills and valuable reference materials. She said that her mother brought books for DS for her from London every year. She also spoke about Facebook and said she did not use it. However, she asserted that non-Saudi residents such as Egyptian mothers were more likely to use Facebook than Saudi women. M4 said she used WhatsApp to communicate with mothers who had children with DS. However, these interactions took up a lot of her family time. In addition, she said during the interview that she devoted her efforts, knowledge and practical experiences to the dissemination of information she had acquired beyond KSA. In addition to posting pictures of her children and their training, she said:

I am downloading the information I have gained from outside KSA onto Instagram and communicating with a large number of mothers as we exchange lectures and workshops on how to provide some EIS for children at an early age, such as speech training, nutrition, and major motor skills.

She also commented:

I add all that is useful to Instagram to provide a practical reference for all mothers about the early intervention services that our children need. I set procedural goals for children: language, motor, behavioural, daily life skills from birth to 5 years.

She also said she was doing voluntary work to help mothers to support their children in the absence of early intervention services in KSA. She currently faces a number of challenges and problems that hinder her activities on Instagram. Saudi society is conservative and governed by customs and traditions in addition to the Islamic religion and this can act as a barrier to posting the complete clips of a mother with her child on social media. In addition, she found the negative attitudes of some mothers on Instagram upsetting. For instance, many mothers would wonder whether their children could be trained. They believed that only their children's basic needs of eating, drinking and rest had to be satisfied and there was no need to help them develop academically and in other ways. Moreover, M4 added that some mothers on Instagram felt ashamed to add clips of their child. Such an attitude was a hindrance to the proper development of children as it was important for other mothers to see the training steps and difficulties faced during skills training. This was the opposite of the attitudes of parents outside KSA where the mothers would present a more realistic and objective view of the work involved.

M4 also added that she provided her child with a language therapy service at home because she had learnt from mothers outside KSA on Instagram; she applied these exercises and then sought the participation of other mothers in KSA by downloading the training clips to her Instagram account for a large number of mothers:

I add my daughter's speech training techniques where other mothers can train their children at home using simple tools that are more attractive to the child and creative in training.

On the other hand, M4 explained that she was faced with too many requests from mothers. She could not respond to all the requests as she has to look after two children with special needs and the rest of the family.

M4 highlighted the importance of gaining information from outside KSA. This was made possible through Instagram, YouTube, and Forums:

I learned from mothers outside KSA more than from special education teachers. I learned from an American mother how to use household items to develop the skills of my children.

She added:

The experience of foreign mothers in physical therapy exercises as shown on Instagram — that it is much better than the services I find in the physical therapy centres in Riyadh.

M4 also noted that social media played a major role in helping mothers to find useful information for their early childhood education, as well as the dates of lectures and seminars, both inside and outside KSA. For example, she and all her family members are keen to attend the DS Conference, which is held annually in the USA. She encourages her other children to attend and learn how to deal with their sister with DS.

In the context of the lectures and seminars, M4 strongly criticised those parents who used their child's health condition to get invited to attend official celebrations in the community, to gain a financial return, or to become famous. This negatively affected their children in the academic school and was harmful to their behaviour:

M4 said:

Social media is very useful and at the same time dangerous. I find some people love to make appearances in social media more than to help their children or help others. I hope this phenomenon does not increase in the future in social media.

M4 suggested that there should be more awareness programmes on DS and emphasised the need for EIS using social media. Parents should not feel embarrassed to use social media to assist children with DS. M4 also highlighted the usefulness of social media in reducing the costs involved in caring for a child with DS. Through social media, parents could train their children to some extent at home and without the need to pay or travel. Free consultations were also sometimes available. This was especially beneficial for parents living in rural and remote areas. She also stressed that the government and decision makers in the Secretariat of Special

Education should work seriously to increase centres of early intervention in KSA and benefit from the expertise of specialists abroad:

Whoever wants to contribute information and experience in EIS through social media must deal seriously and objectively with the people and society.

5.2.5 M5

She is an Arabic language teacher with a University degree. She has an 8-year old daughter with DS. M5 reported that she has had difficulties for a long time with her pregnancies, as she was repeatedly having miscarriages. She did not know the reason and continued medical treatment. When she was 30 years old, she gave birth to her only child. In the seventh month of pregnancy she was diagnosed with Swine Flu (H1N1), which required her to stay in hospital for 15 days under special medical care until recovery. M5 confirmed that her pregnancy was normal without any problems until the baby was born by Caesarean section. She explained:

No one told me after the birth about the condition of my daughter, but I noticed that her tongue extended a little outside and that is what got me worried. The doctor explained about my child in a gentle manner; nevertheless, all my feelings became obvious at that moment.

She added:

When the doctor told me, I was thinking about my daughter: how I can help her? How can I deal with her? I wanted to understand what was right in helping her, and how her future would be. My feelings of joy were mixed with sad feelings and concern for her future.

M5 explained that after leaving the hospital with her daughter, she decided to travel to another, quieter area outside Riyadh, away from the compassion of her family members. She wanted to be comfortable and focused on providing health services to her child who also had heart problems. She took a vacation from work to focus on her child and learn more about DS. M5 said:

I moved away from my family and my husband's family so that I could devote myself to my child and feel more powerful. I spent all my time reading. I read a lot and looked for information in books or on the Internet.

M5 added that she was able, through research, to become acquainted with the Medical Genetics Forum, which had a major role in providing scientific knowledge on DS. She explained that she tried to apply all the ideas and experiences of a large number of mothers from Forums, Twitter and Instagram.

Social media gave her a better understanding of the nutritional needs and breastfeeding of her child along with information on strengthening the muscles and motor skills for her baby. Moreover, M5 said:

At the beginning, with my use of the Internet and following social media I never participated; I was just watching silently; I was watching and applying all the advice and experiences of other mothers to my daughter and I was trying hard to help her.

M5's initial participation in social media occurred when she created an official account for her daughter on Instagram. The account was established for two main reasons: (1) to remember her daughter's milestones and progress from birth to puberty and follow up on the development of her child linguistically; and (2) to share her daughter's diary with other mothers and interact with them in order to encourage them to train their children and become more confident. Therefore, with her husband she added photos of her daughter on Instagram on a regular basis.

M5 explained the benefits of social media, stressing that Twitter was her preferred social media platform as it was a reliable source of information:

Twitter is the most important of social media because it is more specialised ... more accurate ... more viewed from the segments of society ... and available to all.

M5 also explained that using Twitter by Hashtag made it easier for her as a mother and for a large number of mothers to communicate with the government or with specialists in the field of special education and helped them to deliver their urgent demands without any delay:

I have been involved with mothers using the Hashtag on sensitive issues, such as protecting children with special needs from sexual harassment to calling on the government to impose tough penalties. In addition, we wanted to request the government to increase the number of early intervention centres in KSA.

In the same context, M5 benefitted from Twitter as it gave her easy and quick access to specialists in the medical and educational fields, who responded to her enquiries and gave advice on topics related to her child, such as aspects of language, motor and behavioural skills. M5 suggested that there should be a hotline on Twitter between consultants and parents so that everyone can co-operate faster and solve urgent problems. Also, she thought that there ought to be a supervisory body for the work on Twitter, especially in the field of special education, so that the pages became more specialised and accurate. Such a body should be under the supervision of higher bodies of the Ministry of Media and Department of Special Education under the Ministry of Education and the Ministry of Health. She pointed out that there were fictitious accounts under pseudonyms that did not serve special education but rather served personal interests and financially exploited the children. Therefore, the presence of official organisations on Twitter would reduce these problems. M5 strongly criticised the unethical behaviour of several fathers who used Twitter for the exploitation of children, either for fame in the community, or to obtain material gains through advertisements.

M5 also said that despite the immoral practices of some fathers, there were many active fathers who interacted positively and in a dignified manner on social media. M5 believed that mothers on social media had a very important role in encouraging their husbands and the rest of the family to participate and raise awareness about the situation of their children. Furthermore, M5 discussed the situation of mothers who were ashamed of their children's condition and feared divorce or separation if they posted pictures of their children on social media. She attributed this attitude to the conservative culture and narrow-mindedness of some groups in Saudi society.

Therefore, M5 suggested increasing awareness in the community through social media and through voluntary organisations which could use Twitter as a means of communication. This would especially appeal to young volunteers. This approach would have a positive impact on the community and also on the young volunteers who would learn more about children with DS.

M5 asserted that Instagram was also a very useful means of connecting with other mothers, helping their children in the early stages and providing EIS at home, especially training in motor skills, language, and social and control behaviours:

The valuable information on Instagram helped me a lot in providing natural and language therapy to my child when I am at home (...) Instagram is very useful for mothers who have a strong will to educate and train their children.

Moreover, M5 reported that she managed to use Instagram, Snapchat and WhatsApp to discover the most important free services provided to her child and the dates of the events and seminars on DS. It was not as easy for M5 to use Snapchat as it could not save images in the old update; so useful information and photos were lost. M5 explained that she limited her WhatsApp groups to a few mothers or specialists as she did not want to have too many participants in the groups.

M5 also talked about a problem encountered during the use of Instagram. She could not always post clips of her child's training that required her presence as her conservative family would disapprove:

My husband and my family do not accept me showing my picture on Instagram, even if I keep the Hijab; so, I needed my husband a lot while filming my child's exercises to put her on Instagram, but he's always busy and this hinders efforts to help other mothers.

M5 made it very clear that social media was an essential tool in the training of her child:

Social media helped me and other mothers to know what EIS our children needed and also provided valuable scientific material, especially given the lack of early intervention centres in KSA. In addition, these media helped us find out which schools and centres are useful for our children, at a time of increasing numbers of private schools that rely on profit only and do not provide integrated educational services.

According to M5 there should be special sites on social media that focus on providing advertising services for children with DS; this would contribute to the exchange of second-hand tools which are used by parents to train their children in the early intervention stage; for example, special cards, training aids for motor skills, tools for training of fine motor skills, armchairs, auditory and optical apparatuses, and also used books (whether translated books or books that rely on the experiences of parents). Ideally, everyone can view the tools that they own and contribute to the increase of collective and voluntary work among members of the community.

Finally, M5 hoped that government ministries, such as the Ministry of Media, the Ministry of Education, the Ministry of Health and the Ministry of Social Affairs would take an active role in supporting groups on social media that provided services for early intervention in KSA. That would take some of the pressure off parents and specialists who currently have all the responsibility of providing the care to children with DS.

5.2.6 MPS

She is a housewife who has two children. The second was born with DS. She said that the pregnancy was normal. After the baby was born, however, the doctor explained to her that her child was suffering from hypothyroidism. She confirmed in her interview that she did not know anything about it. After leaving the hospital, she noticed that her child was different from his older brother, both in terms of breastfeeding and crying. His muscles felt softer and he had a frequent rise in temperature. Therefore, she had to go back to the hospital to follow up on her baby's health. That was when a specialist in the emergency department told her that her child had DS and he needed heart surgery; it was not hypothyroidism as the obstetrician had told her.

MPS explained that after hearing about her child's condition, she was sad and shocked. She did not appreciate the way in which the news had been communicated to her and the way in which she had been treated by the doctor during her pregnancy. As she spoke, there were tones of sadness and anger in her voice:

Why didn't the doctor inform me early during my pregnancy so that I could prepare myself and educate myself about my child's condition; so that I could help him directly? Why don't we have that right?

She also said that she was keen to find EIS such as physiotherapy and occupational therapy to help her child. After she gave birth, she attended a special centre for physiotherapy services and continued treatment for 4 months. These services had a significant financial cost and she tried to learn some basic aspects of training. Her friend advised her to use social media to learn more about DS.

MPS confirmed that she was happy when she used YouTube as she found many videos useful for her child's development of motor skills. She said, "I was watching videos on YouTube and learning. After that we applied the exercises with my child. I have benefitted in an amazing way".

YouTube also proved useful for her child's language training as she found many relevant clips from a speech therapist. There were specific songs and music that attracted the attention of her child, thus helping her to teach him how to pronounce. Also, the occupational therapy helped her immensely with the education and training of her child. She confirmed these points by explaining:

I learned how to strengthen the tongue muscles from YouTube as it is a basic step before teaching the child to pronounce, especially for children with DS.

She confirmed that she obtained useful information during the intervention phase with her child, both for the motor and linguistic skills and for daily life. She created a special Instagram account in the name of her child, enabling her to communicate with a large number of mothers in KSA and abroad.

She shared her experiences with them and helped new mothers of children with DS to deal with their concerns in the early months of life, especially with the difficulties of nutrition and muscle weakness that needed quick intervention. She described her various uses of Instagram:

I help mothers a lot by providing scientific material or advice, but I refuse to show my child's image during the training. I am afraid of envy: my child is very wonderful and has amazing skills, so I am afraid for him as many mothers might compare the performance of my child with theirs. So, I attach pictures of my child only in Snapchat, within my family and friends only.

MPS said she was able to communicate with many mothers in the USA and Canada, who helped her by providing information to support her child and also to assist mothers who could not read English. She explained that she had benefitted greatly from the expertise of specialists. However, she added that she also experienced stress, especially when it came to consulting specialists such as doctors, occupational therapists and behavioural specialists about the problems faced during the training of her child.

MPS would like to participate actively on Twitter. However, she already spent a lot of time on YouTube and Instagram daily. She said, "I consider Twitter as a consulting office which always helps me in emergency situations". Like the other mothers, MPS emphasised the role of social media in helping her access information and training, and educating her about EIS and its importance for children with DS. In addition, the use of social media has helped her to solve the problem of high costs of private centres offering EIS such as physiotherapy, occupational therapy, speech therapy and counselling for behavioural therapy. She also said that through the use of Hashtag on Twitter, communication with the government had become easier and faster.

Also, through Instagram and Snapchat she was able to identify the dates of lectures and seminars related to the subject of EIS and how to help children. She also stressed that the activity of mothers on social media was a major reason for the improved situation of Saudi children with DS. Previously, such children were rarely seen.

Through social media, their presence has become more common in the community. However, some people still make fun of these children, especially on Twitter or Instagram. She emphasised in her interview that she wanted the special education departments to take a more active role on Twitter and Instagram, with both financial and logistics support, in order to enable

those accounts to raise awareness of DS in the community and also to create a link between the parents of children with DS:

We need a budget to support some volunteers in social media to organise field meetings that volunteers pay for from their own account, so we want greater support from the government and special education departments in all regions of KSA.

5.3 Responses of the Teachers' Group

This section focuses on the teachers. They described their professional and academic backgrounds and explained how they dealt with a large number of mothers and society in general through social media. This section also shows many of the experiences and feelings of the teachers regarding early intervention services in KSA and the lack of services and support. The paucity of EI centres and support services has pushed teachers towards using social media as a source of support and information while dealing with young children with DS. The interviewed teachers provided useful information about their use of the various media platforms and the most important challenges they face when utilising social media and dealing with mothers and other members of society. Teachers have raised sensitive issues when mothers deal with them and threaten them while displaying images of children through social media. The teachers also compared social media with traditional media. They explained that through technology, it was easier to communicate with the government. In the following narrative, the reader will discover many topics related to the subject of the study as well as many other issues related to the field of special education.

5.3.1 T1

She holds a Bachelor's degree in Special Education. She has 7 years' experience of working with children with DS and uses social media at work and at home. T1 stressed that social media has contributed significantly to finding valuable information for teachers and mothers to help children with DS, especially in the early stages of life and to develop a number of skills such as "language skills, motor, behavioural, social, cognitive, and daily life skills". T1 also highlighted the role of social media in helping teachers to look after and train children with DS, especially given the lack of early intervention services in KSA:

You know that early intervention in KSA is emergent and not totally satisfactory currently. There are not enough early intervention centres for all areas of KSA and even the few centres in Riyadh lack the availability of integrated services and a team specialised in physical therapy, language, career, psychological, social issues. So, we as teachers need the team but we do not find this available; at the same time, we do not have the skills to work in these other specialised fields. But fortunately, the presence of social media has contributed to increase our practical knowledge of how to help children with DS and to try to solve the problem of lack of teams for EIS.

T1 also noted that social media encouraged the emergence of many volunteer groups that oversee the establishment of activities to raise awareness of DS, within the community, whether through the media or in field meetings within the community, for example, in public markets, schools, and hospitals. She also confirmed that mothers, teachers and all specialists contributed through social media to the formation of an integrated work team both inside and outside KSA. This team work has contributed to the exchange of information and experiences and encouraged consultation among parents, teachers and specialists:

By using Instagram and Twitter we have a specialised team and also a volunteer team of mothers and teachers and some members of the families of children with DS, such as brothers, cousins, and other relatives.

T1 reported that she used some social media platforms such as YouTube, Instagram and Twitter, and regarded them as the most popular platforms, followed by WhatsApp and then Snapchat and finally various Forums. She added that social media helped her communicate with a large number of mothers with DS children and enabled her to help them, whether in training children, answering their questions or raising awareness about how to deal with their children.

In addition, T1 was able to exchange experiences and information with teachers and specialists in the field of language and physiotherapy, occupational therapy and psychology, both inside and outside KSA. Such an exchange enhanced her own knowledge of DS:

My use of social media has contributed to the development of my knowledge and to add information from the experiences of others that I have studied at the University.

Also, she added that through social media, teachers and specialists were able to serve a large number of mothers in villages and areas away from the services of early intervention and special education. Specifically, they provided practical advice and answers to their queries:

Social media provide teachers with information and tangible experiences (such as audio, visual, kinetic) and this is a more realistic and direct learning than the abstract and theoretical information in some books.

She explained that social media helped her when she felt the pressure of work and needed creative ideas. The various social media platforms have provided her with ideas that she has applied in the classroom with her students. She has also shared her own experiences and ideas through social media.

T1 talked about her use of YouTube especially in English. YouTube videos have enhanced the way in which she trains the children, especially in terms of motor skills and language:

YouTube is very significant because I first watch the exercises that are provided for the children and then I apply them in the classroom where the results are very effective.

She said that YouTube helped her greatly to identify and formulate goals for children in early life to train them in functional motor skills, daily life skills, and behaviour modification, in addition to learning ways to attract their attention. She asserted that the songs and storyboards on YouTube were very helpful. By using YouTube, she was able to create attractive and original storyboards appropriate to the needs of children in the early intervention stage. These storyboards have helped to develop the children's use of language and their daily life skills. She commented that

YouTube has given me an opportunity for creativity and I found that it was easy to teach children in tangible and attractive ways.

T1 expressed her admiration for YouTube in English, noting that there were many clips from the mothers of children with DS, from teachers, physiotherapists and other staff working in EIS

I benefitted a lot from YouTube, especially during the training of children to pronounce the alphabets correctly; I have benefitted from YouTube more than from a speech specialist in some of the centres.

On the other hand, T1 criticised the lack of Arabic clips on YouTube. She believed that the limited number of videos in Arabic was due to the strong reservation of some mothers and their sense of shame about posting their children's clips. In addition, some mothers could be concerned that comparisons would be made with their child, thus giving rise to a feeling of envy.

T1 explained that as a teacher, she had the experience of dealing with many mothers. Some mothers were active in developing the skills of their children with DS and contributed to the provision of EIS. Such an approach had a positive influence on the child's skills and development.

Furthermore, T1 reported that she had been verbally abused by one of the mothers and threatened that they would file a complaint to the Ministry of Social Affairs if she posted pictures of her child on social media, hence forcing the teacher to blur the images of the children to hide their faces. Such an attitude can hinder the children's progress:

I feel sorry for my students that it is not possible to fully document these important milestones of their development.

T1 explained that her use of Instagram had allowed her to interact with several mothers who were active with their children, either as voluntary work teams or as participants in raising awareness in the community, both in KSA and abroad. The mothers posted diaries of their children and showed how they trained them at home. T1 reported that Instagram was very useful in exchanging experiences and presenting enquiries between mothers and teachers and specialists in the fields of early intervention. She added that through Instagram and the follow-up experiences of mothers, she was able to correct some of the erroneous information that had been circulating among mothers and raise awareness among them about how to deal with their children.

T1 said that her students were happy and felt motivated when they saw themselves on Instagram. Such feelings reflected positively on their performance in class. T1 therefore emphasised the importance of educating the people and encouraging them to use Instagram and publish their children's diaries without fear of negative responses from society or embarrassment. Moreover, her communication with specialists and professionals in the field was of significant value to her. At times, she had discussions with the specialists about the problems which appeared in the classroom and she received practical advice and psychological support from them.

On the other hand, T1 expressed some concerns about communicating with mothers through Instagram:

What worries me most is to know whether the mothers are applying the advice and information I provide to them or other specialists by means of Instagram and other social media. I really think a lot: do mothers do it?

T1 argued that the attitudes of some mothers were an obstacle to the progress of their children. These mothers were ashamed to share posts of their children's exercises and their failures during the initial stages of training. They would only share the pictures showing their children once they had fully mastered the given skill. This provided a fake picture of the situation and made other mothers feel frustrated and discouraged. She added that some mothers used religion and the customs of the Saudi society as the reason for not showing pictures of their children on Instagram. According to T1, the issue is not religion but the mothers' own shame and fear of other mothers' envy.

T1 explained Twitter's important role in helping her learn more about EIS: it facilitated her access to the right information from specialists. She stressed that Twitter was a reliable scientific reference as the information came from a large number of specialists, doctors and various segments of society. There are a number of specialists related to EIS, such as doctors, physiotherapists, occupational therapists, psychologists, social workers, behavioural therapists, university professors and other professionals in the field of special education. In addition, she reported that she followed some specialists on Twitter in order to learn from their expertise in the field of EIS. Through Twitter, she could thus benefit from some of the ideas put forward and apply them in her work. She said:

Twitter has a large number of specialists from whose expertise I have benefitted and who provide academic information on the importance of EIS for children with DS and also, they know the right way to deliver these services.

She added that through Twitter she was able to learn the latest training and education methods as well as know about new books in the field of EIS. Knowledge exchange among specialists has also enriched her understanding of DS. T1 stressed that the information on Twitter was constantly updated and this was not available in some social media platforms such as Forums. Also, she pointed out that through Twitter it was possible to access and share information about the most important annual and monthly events, seminars and lectures held in KSA or in the

Gulf countries such as Kuwait, Qatar, Bahrain, or in Arab countries such as Egypt and Jordan, as well as in USA and Europe.

Furthermore, T1 emphasised Twitter's role in supporting a large number of teachers and mothers of children with DS to deliver their demands and needs to the government directly and quickly through Hashtag. Mothers would rely less on traditional forms of communication with the government where it could take years for their demands to be met.

She said:

I participated in Hashtag, including supporting the residents' claims to open early intervention centres in KSA, and also cancelling the financial fees for children with special needs in the private centres where the government has paid the fees. And also, to raise sensitive issues that occur in centres—such as the sexual harassment of children with special needs and campaigning for strict laws.

T1 added that she has not only participated in Hashtag (#) but also encouraged mothers to put all their demands and needs to government officials through Hashtag. She said she and her fellow teachers use Hashtag to deliver their demands to the government, stressing that some of these demands had been met and some were still on the waiting list. But generally, her demands to the government were attended to efficiently.

T1 also explained that she used WhatsApp to help some mothers and to respond to their enquiries. She preferred the private response service because many mothers were ashamed to show their children's problems to large groups on WhatsApp:

With WhatsApp, mothers of children with DS interact with each other more than the teachers. However, when some of the mothers communicate with me they prefer special services in WhatsApp. Although I have tried to encourage mothers to speak transparently and openly, everyone in the group wants to hear and learn, but unfortunately some mothers strongly disagree.

She added that through WhatsApp, she had been able to transmit her experiences and information gained from YouTube, Twitter and Instagram to a large number of mothers in KSA. T1 confirmed that she used Snapchat to increase her own family's awareness of the nature of her work with children with DS. She said her family did not want her to work with these children because they thought they were aggressive and dangerous. But she managed to change her family's negative attitudes by sending daily pictures of her performance with her students:

Through Snapchat I was able to change my family's negative attitudes and views on children with DS and their ability to learn and even encourage them to enter the field of special education (...) As a result of broadcasting my sessions with my students on Snapchat I have gained my parents' support as a teacher of children with DS and I feel very proud of this accomplishment.

During the interview, T1 also referred to the status of the forums. She explained that she did not participate actively in these forums, but rather read what was published. She said that the forums were previously more active. T1 asserted that currently the information and training methods provided on forums were outdated and sometimes wrong. For example, a forum stated that a child must be beaten so as to control any bad behaviour. She also commented on the negative attitudes of some teachers on forums who put forward unacceptable views such as “these children will not benefit from any training or effort ... I get tired without any benefit”. T1 commented:

These words are frustrating for parents when they hear teachers say that. Therefore, these discussions should be prevented in forums (...) when I hear the words of frustrated teachers, I feel that I am better than them and continue to develop my skills to help mothers and children with DS.

T1 reported some of the problems she faced when using social media, citing the technical problems of poor internet. Due to work pressures and demands from mothers on social media, T1 had to work late hours. This has affected her health and led to a lack of sleep. In addition, she has spent significant time translating the information on some of the social media platforms. She argued that the current level of translation was weak and in urgent need of development and support from bodies responsible, such as the Ministry of Media.

T1 concluded her interview by confirming that social media was much better than traditional media, such as television programmes that were sometimes censored and limited in information. In contrast, she found social media to be transparent, realistic and varied. She added that the Ministry of Media should invest more in social media and maintain a database for EIS. As a result of the efforts and experiences of a large number of mothers, teachers and specialists with an interest in early intervention, social media has become a useful solution in the light of the lack of centres offering early intervention in KSA.

It should be the responsibility of the Ministry of Media to check and control social media platforms and eliminate false accounts that harm and exploit people with special needs:

Community members should contribute to enriching social media with audio and video clips on how to deal with children with DS, and the government must formally support this work.

5.3.2 T2

She holds a BA in Special Education and is one of the most recent graduates from the Princess Nourah bint Abdulrahman University of Riyadh Early Intervention course. This course is a new specialisation in Saudi universities, especially in the Department of Special Education. T2 reported that she was fortunate to be one of the graduates who had the opportunity to study intensively in this area.

T2 confirmed at the beginning of her interview that social media has played a major role in her public life and also in her field of work. Through social media, she was able to identify many specialised people inside and outside KSA, thus contributing to her knowledge and the development of her career skills, especially in EI and help for children with DS. Also, she stressed that the information and experience gained from the various platforms was more useful than that provided by teachers and specialists:

I benefitted a lot from the information on social media, more than from my colleagues, teachers or specialists; really social media served me well, in the absence of early intervention centres and an integrated team in KSA.

T2 reported her first use of social media through Instagram with volunteer groups consisting of many female graduates. T2 said she was able to help several mothers in Riyadh and abroad, in remote areas and villages, by communicating with them and helping to answer their questions about how to train their children in early life in a number of skills, such as language skills, fine and motor skills and daily life skills.

In addition, T2 and her volunteer group have used Instagram to increase awareness of DS and to provide illustrated instructions on each EIS and the importance of access to these services for children with DS.

T2 added that she was a volunteer in a large project through social media called "one community," which included several specialists and volunteers. T2 said that she was responsible for a section called "Consult us", based on the provision of free consultations for all people with disabilities and providing services on Instagram, Twitter, and Snapchat. Each section in the project was responsible for a group of volunteers according to their area of residence in KSA:

The supervisor of this great volunteer project is a person with language difficulties and problems in his life because of lack of awareness in the community. He sought to develop the awareness project through social media and wanted to open the door to free consultations for all people and all kinds of disabilities. So, I work with pride with this volunteer project team.

T2 explained that her role in the team related to co-ordination: receiving parents' queries which were organised and sent to the relevant specialists and doctors who then replied directly to the parents via Twitter. T2 reported that her role in coordination helped to increase her knowledge and expertise as she had a knowledge base in a number of other areas related to EIS (such as behavioural therapy, speech therapy and physiotherapy). Through Twitter, she was able to

direct mothers to the best hospitals and centres providing health services, speech therapy or physical therapy. Also, she raised the awareness of the families of children with DS, and she explained to them the importance of demanding their rights from the government. She encouraged the use of Hashtag to demand more early intervention centres:

Through Twitter I aim to educate families to use Hashtag because some of them do not understand the strength and impact of the media impact on the response of the government.

T2 explained her experience and support team on Twitter and Instagram. The team gathered many locals and met them face-to-face to answer any enquiries. She went on to explain:

A father came to us and told us that he had prevented his child from leaving the house for 3 years and expressed his frustration with the lack of EIS.

However, through Twitter he became aware of some events concerning children with DS. He contacted the account holder of the advertisement and soon became an active volunteer in the team who raised awareness about children with DS.

She added that through Twitter, Instagram, Snapchat and YouTube, she was able to gain a lot of information and ideas that helped her train children and educate their families. Also, she learnt about various parts of the training of children with DS such as speech, physical, occupational and behavioural therapies. She explained that some groups in social media specialised in the presentation of exercises and steps to teach the child the most important basic skills step by step.

T2 said that she tried to apply the ideas and exercises from these groups. She confirmed that this reflected positively on the performance of her students in the classroom. She also disseminated this information among mothers, colleagues and teachers in order to share the benefits:

I am doing extra work, not only as a teacher, but also as a speech therapist and occupational therapist which does not yet exist. This situation forced me to follow the information provided by social media specialists and then try to apply the exercises when working with my students in the classroom. My students have benefitted a great deal from this and I will try to continue until we have early intervention centres and the work team in KSA.

She added:

I have benefitted immensely from training students to develop fine and motor skills and precision as well as visual kinetic synergy, thanks to the information and creative ideas found in social media.

Social media platforms also kept her up-to-date about lectures, seminars and events associated with (WDSO). She explained that Snapchat had played a major role in the direct coverage and dissemination of events, which helped many mothers and teachers to follow the event at the same time and to document images very quickly. With regard to Snapchat, T2 added that it was used to educate relatives and colleagues about children with DS by sending instant pictures of activities taking place within the school.

She also stressed the role of social media in encouraging creativity and innovation in the preparation of educational aids for children with DS. She explained that she had benefitted from the simple materials available on the various platforms and used them appropriately, which held the attention of children in exciting and innovative ways. In this regard, she said that YouTube in English was very useful, especially those clips about mothers' experiences of using household raw materials to train their children. Such videos had encouraged T2 to imitate these ideas and also to add new ideas appropriate to the goals of her students.

T2 was very keen on Pinterest, saying that she used the site to download images of different teaching methods and learning tools for teaching specific skills in the classroom. She referred to it as an “electronic library” and used it as a reference for her future plan to start a YouTube channel. T2 noted that

By using Pinterest and YouTube I have created multiple educational programmes and learning tools to help develop linguistic, cognitive and motor skills for use in a classroom and I feel as though I am a professional program designer. In the future, I plan to start my own YouTube channel, which will show people how to design educational materials used in a classroom environment.

T2 also presented a number of issues and challenges she faced when using social media. She noted the negative attitudes displayed by some mothers in social media who repeated statements regarded as unacceptable such as “you do not need to teach a child with DS because he will not understand”.

T2 said that such attitudes may be due to the shame or excessive protectiveness of some mothers. In addition, some mothers did not want to show their child's diary or useful training methods, for fear of envy and the evil eye, a common belief in Saudi society. T2 also pointed out that some mothers claim that dealing with a DS child is very easy, thus conveying incorrect ideas:

The problem of the ignorance of some mothers appears a lot in some villages, and some mothers for the family name's sake.

T2 was also concerned that mothers were improperly applying the advice and training given by specialists, teachers and others on social media:

I find a large number of mothers asking questions in social media and getting the right answers, but I am concerned about the level of these mothers' application of those tips with their children at home; I really do not know if there was a proper application!

In this context, she said:

Home visits intervention should be activated in EIS in KSA, in order to train mothers and to ensure that they apply skills and help their children in the right way.

T2 explained that she struggled within her work environment because some of her colleagues had a negative influence and discouraged the other teachers from investing themselves fully in training the children. They claimed that the children would not make significant progress because of their condition. She had received comments to that effect, such as “You are doing

this to make yourself look good to the parents and school administration not because you love or care about your students”.

She also mentioned that some people created fake accounts just to make fun of the children or exploit the mothers and their children for financial gains. Therefore, T2 suggested that there should be an official role for the government and the relevant ministries such as the Ministry of Media to establish strict penalties and laws and control of such sites. She said:

We need an official commission that punishes violators in social media sites (...) There is a need to increase the level of awareness in the community through social media and members of the community must learn about children with DS.

T2 referred to another problem affecting the use of social media use: frequent internet and communication disruptions, making uploads and downloads difficult. Also, she noted that there were problems of translation, which did not help in providing information clearly and accurately. In addition, the problem of time was mentioned: T2 spent a lot of time on social media, thus affecting the time spent with her own parents and relatives. Also, she mentioned health problems and hormonal disorder caused by lack of sleep.

T2 expressed her wish that social media would continue to evolve as a useful source of information on EIS for families of children with DS and other disabilities. She pointed out that the role played by the Ministry of Media towards these means was still unsatisfactory. There was a need for more organisation, co-operation and attention from government agencies such as the Ministry of Media and the Ministry of Education, especially the Department of Special Education.

5.3.3 T3

She is a teacher in the field of special education, who holds a Bachelor's degree and has 6 years' work experience of a number of disability categories such as DS, autism and movement disabilities. T3 confirmed at the beginning of the interview that the activities of mothers were a major factor in the emergence and development of social media in the field of early intervention. The services provided by the government were not satisfactory for all, despite the urgent need for their availability. She explained that there were many enquiries from mothers and there had been an increase in the number of specialist accounts and doctors on Twitter and Instagram. Also, she said social media in the last three years had reached the peak of its development in the quality of information available to serve all categories of disability such as DS, autism, hearing and visual disabilities, and motor disabilities, across all regions and villages of KSA.

She also noted the efforts of many teachers and specialists through social media to raise awareness within Saudi society, thus changing the perception of disabled individuals compared to previous years. People with disabilities were rarely seen in the community because of their parents' fear of the negative responses from some people. Nowadays, however, social media

has given a voice to disabled people and made their presence more visible online and in various community facilities, such as markets, parks, schools, mosques and elsewhere.

T3 pointed out that she first used social media in 2010 through reading and seeing forums that offered a lot of discussion and valuable information, whether from mothers or specialists. According to T3, the forums have recently become less popular and the information in them tended to be old, duplicated, or wrong. Twitter and Instagram have overtaken the forums as they allow more people to interact quickly. T3 reported that she used some social media platforms (such as Instagram, Twitter, YouTube) to communicate with a large number of educational specialists in the field of special education, or specialists in the field of early intervention. In addition, those social media sites are popular with teachers and mothers who have children with DS. T3 also mentioned that she has benefitted from the English sites, which were rich in useful information and practical steps in training children with DS. She has applied several ideas from these platforms to her classroom.

T3 explained that she used Instagram to benefit from the exchange of experiences with fellow teachers and to obtain the most important exercises for children with DS, such as the development of language skills, and motor, behavioural as well as physical therapies. She added that she was following some accounts of children with DS in Gulf countries such as Kuwait. These accounts are more open in the presentation of pictures and diaries, in contrast to many accounts of DS children in KSA. Some Saudi families refuse to share pictures of their children out of shame, or for fear of ridicule and envy. T3 strongly criticised the negative attitude of some people who did not display their children's pictures and stressed that this would negatively affect everyone, especially mothers who would like to understand how to train children. T3 reported that she communicated with doctors and specialists to get effective advice on any behavioural, linguistic or other problem faced in class:

When I have a problem in the classroom, I am going to use Twitter because I am sure there are a number of experienced specialists who have benefitted from consulting them a lot.

She added that she had benefitted from advice from fellow teachers or speech therapists to train children with DS: "Twitter is a beautiful and large world".

T3 compared Instagram and Twitter:

Instagram is a personal site for each individual to add images and interact with others, whereas Twitter is an efficient venue for the exchange of information with specialists.

T3 pointed to the privacy of using Snapchat for family and friends, or to follow the diaries of children with DS taught in the centre and to see their development at home. YouTube was also valuable to T3, in that it provided her with useful resources for the design and preparation of educational tools to attract the attention of children and train them properly.

She mentioned her own experience with her colleagues, who had benefitted from some creative and entertaining ideas found on YouTube, such as fashion shows to help improve the children's social skills, overcome their fears of communicating with large audiences and develop their motor skills when designing and creating clothes for the fashion shows.

On the other hand, T3 strongly criticised the non-specialists who copied and pasted the information in social media in order to increase the number of their followers, to advertise medical or educational products, or to promote a centre's special services for financial gains. Therefore, T3 thought that it was essential for the government to have some control over special education sites in order to protect information and beneficiaries from intruders and immoral transactions. She also proposed that there should be a supervisor of educational sites for special education run by academics in universities.

Although T3 said that social media was really useful, she had been less active on it recently due to the demands of work and family. She found it difficult to manage her time on social media and currently used it more for a follow-up than active interaction and participation. However, T3 said she was trying as much as possible to encourage mothers to use social media:

I am keen to increase the awareness of mothers in public places such as markets, hospitals and gardens about the importance of the use of social media in the field of early intervention and I have explained to them that they could benefit from valuable information available on social media, even if they do not have early intervention centres.

T3 concluded that social media allowed

Freedom of dialogue, discussion and questioning, which are effective factors for the emergence of more realistic information and experiences rather than the theory we find in books.

5.3.4 T4

She has a bachelor's degree in Special Education from King Saud University and has 7 years' experience of working with children with dyslexia and DS. T4 said she had been helping children since her time at university. She helps mothers and their children with learning disabilities to read and write in her home, which has contributed to the acquisition of many teaching skills, relying on the use of information from the internet and social media. T4 explained her views on social media in these terms:

Social media is the technology at present that has facilitated access to information and it's spread around the world; it's the present and the future.

T4 reported that social media has made communication between teachers and specialists in fields related to EIS such as doctors, physiotherapists, occupational therapists and speech therapists easier and more flexible, which has in turn facilitated counselling and working as a team through the internet. T4 said she was communicating with a number of specialists outside KSA, increasing her access to new and useful information to help children in their early stages with DS. T4 explained that she had begun to use social media since her time as a student, taking advantage of the academic information on Twitter:

When I was first using Twitter, I was keen to follow official accounts of specialists, academics, associations and groups interested in children with special needs. I benefitted from the discussion and information; it enriched my knowledge which I acquired as a student at the university.

For a number of reasons, T4 considered that Twitter was the most suitable type of social media:

Twitter is the best and beloved to my heart because it has a lot of information presented in a short and clear way that is available to all users. The majority of the members of the community and a large number of families of children with special needs and specialists share meaningful and useful discussions. It also makes it easier to search for usernames by typing a person's name and quickly you can find an account. It is also easy for us to deliver the demands to the government and the departments concerned with special education by using a Hashtag.

T4 reported that she had benefitted from Twitter, by finding a lot of useful information on EIS and the provision of essential services such as physiotherapy, occupational therapy, and language therapy. T4 noted that she was able to communicate directly with specialists in these areas and learn how to provide services, although these were rare in schools and centres of special education. She pointed out that "Twitter contributed to finding a link between specialists and teachers, which helped in the exchange of knowledge and information".

She added that there were many mothers on Twitter. This significant Twitter population made it possible to learn about DS and share valuable experience and training tips. Specifically, she noted that:

Twitter helped teachers and mothers to learn about important events and seminars on the EIS of children with DS. Learning about these events is easier compared to the time before the emergence of social media.

T4 also confirmed that some forms of social media (such as Instagram, YouTube, Snapchat and Forums) had played a role in increasing her knowledge and support for those working with children with DS, especially at the EI. She explained that she was able to follow the accounts of specialists and some mothers in other countries. She then transferred this information and useful ideas to her Instagram account, after translating the subjects and taking into consideration the Saudi culture. This approach had helped the mothers in KSA to benefit from the information available abroad. She explained, for example, that it was possible through social media to explain clearly in pictures and words the steps involved in the training of a child to develop his motor and language skills. In addition, creative approaches have helped to train the children in practical ways:

There are some mothers who communicate with me through Instagram who provide feedback about their application of ideas and exercises which have been given to them to develop motor skills, strengthen muscles and also language skills.

She added that through Instagram, she sought to educate mothers about the importance of providing EIS, stressing that some mothers had no knowledge of the importance of these services in improving the performance of their children in the future. T4 also mentioned encouraging mothers to use social media to learn about their children's training. This would help them save money because of the high prices of therapies offered by private centres. T4 said that social media also partly made up for the shortage of early intervention centres and the lack of home visits.

T4 cited an example of one mother living in northern KSA, who became known to her through Instagram. This mother shared information about the condition of her child and asked T4 to help her in the home training. T4 explained that she co-operated with the mother, who came to Riyadh, and stayed for 6 months. During this time, T4 taught the mother how to help her child with a number of motor and linguistic skills. The child's performance improved significantly:

I have been keen to provide the mother with all the social media sites that are useful in training her child at an early age. So, the mother has benefitted a lot and she is still communicating with me through Instagram.

T4 pointed out that she had benefitted from platforms such as Instagram and YouTube in terms of creative ideas in the design of educational aids to help her pupils to strengthen the skills of major mobility and other training needed in early life. In the same context, T4 confirmed that the information on YouTube in English has helped her greatly during the planning of goals and provided effective training strategies for use with DS children and also in the design of learning tools. T4 also pointed to the use of YouTube for correct pronunciation through the videos and songs attractive to children with DS:

YouTube helped me to acquire brain games to develop the sensory perception of children with DS who are one or two years old.

In addition, T4 explained that her use of Snapchat was limited to keeping track of the diary of some children with DS at home, especially those whose target was to modify their behaviour. T4 described how Snapchat provided a link between the mothers and her and also a sense of continuity between the centre and home:

Some mothers send me Snapchat about their children's diaries, which makes me feel close and able to understand the problem and find appropriate solutions to it.

T4 also confirmed that she used WhatsApp, but it was limited to communicating with speech therapists who provided her with advice on the language training of her pupils in class. She explained that she did not use WhatsApp with mothers as they would expect quick responses. She said she was dependent on Twitter, Instagram and Snapchat in communicating with the mothers. She asserted that they were more formal and useful to all mothers:

From my personal point of view, Twitter, Snapchat, Instagram have contributed to the elimination of the role of Facebook, which is not used by teachers in KSA, compared to teachers in other Arab countries, who use Facebook on a daily basis.

Moreover, T4 explained the current status of the forums, which were useful when they first appeared. She said that during the period of her studies, she got useful information on DS and teaching the children with DS on the forum. However, T4 claimed that the forums were currently outdated with sometimes incorrect information and advice. In addition, there were negative responses from some of the teachers in the discussion forums, where the teachers were very frustrated and did not accept the idea of EI for children with DS. Typically, they would repeat negative statements: "We cannot teach them ... We will waste a lot of time in training ... It's hard work and difficult".

During the interview, T4 clarified some of the problems she faced while using social media. She mentioned that the most important problem was the refusal of some mothers to portray their children and make them visible on social media, on the pretext of fear for the child. However, some families accepted posting clips of their children, but only after they had mastered a given skill. They would refuse to post videos of the child since the beginning of training as then they were ashamed of their performance. T4 believed that such an attitude was detrimental to other mothers who had to learn and see the steps involved in training.

T4 suggested that mothers could shoot with flash action to hide their child's face but they should not deprive other mothers from watching the training. T4 was not convinced when some mothers claimed that they were not allowed to take photographs with the child during the training sessions:

If some mothers refuse to present pictures of their children, they can hide their children but do not hide their skills.

In addition, T4 explained another problem encountered during the use of Twitter and Instagram: the presence of intruders who did not specialise in special education and gave unreliable information for financial gains. Therefore, T4 suggested that there should be monitoring bodies from the Ministry of Information to reduce the violations or financial exploitation of the families of children with DS. T4 also stated that on a personal level she found it difficult to manage her use of—and time on—social media. Her inability to manage her time on social media has led to problems with her parents, leading to failure to communicate with family members and medical problems (fatigue, sleep disorders, sleep deprivation and malnutrition).

T4 concluded by emphasising the role of social media in providing written and illustrated information on children with DS, as well as the benefits of EIS for all types of disabilities:

I hope in the future that the number of users of social media will increase, whether from families or individuals with disabilities, because EI will not develop in a meaningful manner, except through social media.

5.3.5 T5

She is a teacher with a Bachelor's degree in Special Education, who has two years' work experience. She said she refused to specialise in physics and chose Special Education because of her 13-year old brother with DS. He was a strong reason for her to choose to focus on special education. She explained at the beginning of her interview that she used forums, where she found incorrect information such as the opinion that children with DS will die early. She expressed her feelings at that moment by saying:

I was crying a lot and I felt like I would collapse when I read in forums that a baby with DS dies at the age of 18 years. Every night I go to my brother's bed and see him and I cry so much I cannot control my feelings and I cannot believe it! I say to myself: Will I lose my little brother? At the same time, I was saying, I do not want to love him and then see him die.

She said that thanks to her studies in the Department of Education she realised that this information was outdated. Previously, the medical services provided to children with DS were inadequate and led to delays in heart operations, which was the most dangerous threat to their lives. This is why T5 began to work as a volunteer in educating community members about the children with DS via social media. She said that she taught her mother how to use Facebook, communicate with specialists and form work groups with a number of mothers outside KSA. Twelve years ago, Facebook was more widely used by some members of the community in KSA than now.

T5 said that as a result of her experience with her brother and her interest in working with him and other children with DS, she increased her use of social media such as Twitter, Instagram, YouTube, Snapchat and forums. She confirmed that the forums presented information that had not been updated for 12 or 13 years. T5 therefore tried to correct such information through her participation but stated in the interview that the status of the forums was still bad. Forums sometimes contained “discouraging and useless” discussion by some teachers working with

children with DS. For instance, some people claimed that it was useless to educate children with DS regarding prayers and the mosque as they would not be aware of religious matters. T5 explained:

My brother is now 13 years' old and he can learn everything and go to the mosque with his brothers and pray. I think the problem is not with people with disabilities, but the real problem is the thoughts of some negative people who lack rationality and humanity.

T5 also criticised the current status of the forums:

The forums — compared to other social media — do not have sufficient information and experience to develop the child's training skills necessary for him in the EI.

On the other hand, T5 showed her admiration for Twitter, Instagram and Snapchat. She pointed out that Twitter played a major role in helping her to communicate with specialists and doctors, as well as with a large number of mothers of children with DS and their relatives. She was able to recognise the importance of EIS for children:

In the past I thought that early intervention could only be offered in private centres, but through Twitter and Instagram, I found a large number of physiotherapists, occupational therapists, and speech therapists who were working on explaining the training steps for teachers and mothers, which could be applied anywhere: at home or school.

T5 added that their use of Twitter contributed to correcting erroneous information about children with DS and explaining the facts about these children, thus enhancing their training in the centres. She added that she was able to ask questions and receive urgent advice from several educational counsellors, which reflected on the development of her performance and enriched her ability to help other mothers in the centre, or through other social media platforms:

When I have a problem in training children, I go directly to the presentation of this problem on Twitter and find effective solutions in the application, which enables me to provide feedback about it to benefit others.

T5 also confirmed that she had benefitted from the use of the Hashtag on Twitter, in order to demand that the government make the medical services available to all hospitals in KSA. The government's quick response through a royal order emphasised the provision of free and fast services for this category. This reflected positively on the feelings of parents who had children with DS. She noted that “through Hashtag, the delivery of our demands as teachers to the government has become very rapid”.

T5 also explained that the special user accounts for the preparation of teaching aids, frequently found on Twitter, Instagram and YouTube, have helped teachers in thinking and creating educational tools to develop children's linguistic and motor skills. She noted:

There is a clear explanation of the sound and image of the preparation of educational aids and their role in the development of the skills of the child; I use these sites a lot; it is limited by the pressure of work and I participate to enrich my thoughts as a teacher.

T5 has also made voluntary contributions to Twitter to serve other researchers: by participating in answering electronic questionnaires, by virtue of her role as a teacher and sister of a DS child. She explained that there was collective co-operation between researchers and research participants. She stressed that Twitter was an effective means of scientific communication with specialists and an opportunity to access the latest information about the applications of EIS outside KSA. She remarked:

I see and feel in the social media the real collective work, it is more than your find in the centres or schools. We work as a team and as one family on Twitter.

She also explained that through Instagram she was able to identify how to provide physiotherapy and functional services for children with DS. She is a teaches children aged between two and three. There are no EIS such as physical, functional and language therapies for this age group, forcing T5 to play the role of the specialists in order to help children at this early age.

T5 confirmed that she was communicating through Instagram with a number of specialists outside KSA, in Arab countries such as Egypt, Jordan and others, thus benefitting from their experiences. She also confirmed that it was now easy to get information, voice recordings and relevant clips on Instagram or YouTube. T5 compared the Arabic and English versions of YouTube. She thought that the English version was much better with more relevant information and advice from a large number of specialists in terms of training children in various skills of mobility, daily living and language and in the control of undesirable behaviour:

YouTube in English provides more useful and realistic information, as I can see how EIS are provided for children with DS, whether through home visits or through centres which specialise in EI ; it is amazing work. I am very keen to follow up these sections, which unfortunately I cannot access on the Arab sites (...) I also acquired from YouTube many ideas for the design of methods of education that were appropriate for the children to develop some language skills and sensory perception.

T5 explained the weakness of YouTube in its Arabic version; there were negative trends by some mothers in KSA who refused to portray their children in physical, functional or language therapy sessions because they felt scared of the reactions to their child and felt ashamed:

From my personal point of view, there is no convincing reason to refuse to portray children with DS and add them to YouTube or Instagram, because the other mothers need to learn and benefit from the experiences of previous mothers. From my personal point of view, based on real experience, most of the rejection comes from families known and famous in KSA for fear of shame.

T5 concluded by stressing that social media served DS children by identifying them within the communities and also supporting their families and teachers in obtaining a good database for the application of EIS in the absence of applications in the field. Through social media, everyone can apply EIS at home. They are also available to everyone who wants to know the dates of scientific events and seminars. The direct broadcast of those seminars for families in their homes through Snapchat or YouTube is another possible improvement:

Social media has been able to solve problems of mass media, such as television programmes that lack community awareness and are subject to censorship and limited programmes. In contrast, social media provided a real awareness of materials derived from the experiences of families and specialists, which increased the level of awareness of children of DS and raised awareness of the importance of access to EIS in KSA. Nevertheless, we still aspire to the development of social media information and video clips, in addition to the support of the government.

T5 said that there was an urgent need for logistical support from the Ministry of Media, through increased monitoring of social media accounts and the development of penalties for those who exploited the families of children with DS. In addition, she argued that it was important to improve the low level of translation on social media. The current weak or inaccurate translations prevent people from benefitting from the experience of other developed countries in the field of EI. Finally, T5 stressed that the use of social media took a lot of time:

Although social media consumes most of my time, my family and I feel happy. We will continue to work as a team to raise awareness in the community of the importance of providing EIS for children with DS and all other disabled children.

5.3.6 TPS

She holds a Bachelor's Degree in Special Education and has experience working with children with DS for a year and a half. She said she was using social media to help her provide EIS as it was difficult to find specialists in centres:

As teachers we have a larger burden, where we are physiotherapists, occupational therapists, speech therapists. We must solve the problem by using social media which facilitates our rapid action and our ability to help children at an early age.

She teaches children aged between two and three. At this age, children need to develop their motor and language skills. She explained that she was constantly using Twitter to communicate with colleagues and specialists in various fields related to early intervention such as doctors, language specialists, physiotherapists and occupational therapists.

She stressed that the presence of specialists on social media had contributed significantly to providing relevant knowledge to the public, including mothers of children with DS and teachers, especially with respect to EIS for children at home. TPS added that she was able to use Twitter through Hashtag to forward requests to the government and put pressure on them to open schools in remote areas as well as early intervention centres and to employ EI teachers who graduated from the Princess Noura University. However, she noted that the graduates were not employed although there was an urgent need for their services as intervention specialists in early intervention centres.

In the same context, TPS explained that she had been able to benefit from Instagram, especially in helping mothers to train their children in the day-to-day skills, language and movement; correcting errors that parents might make while dealing with children and also changing some negative trends, whether related to the mothers themselves or other members of society:

Instagram contributed to the visibility of a large number of children with DS. We are seeing their diary on the accounts of Instagram. 10 years ago, or more, Saudi society had seen few of these children — in hospitals only. Now we are seeing them in markets, parks and streets, and everyone knows about them because of social media that has contributed to the understanding of this condition.

TPS added that there were several advertisements—both on Instagram or Snapchat—about the dates of important events, such as (WDSO) and useful information about open seminars and meetings taking place in public spaces, especially in the large and famous malls in Riyadh. In addition, TPS specified that she communicated with teachers and speech specialists inside and outside KSA. She said she was following Instagram accounts in Turkey:

I have accounts for specialists in Turkey. There are a lot of creative ideas from the teachers in making effective training methods for children with DS that I benefit from, especially in the development of fine motor skills and muscle strengthening. I try to learn and then develop some ideas to become more innovative and to match the situation of my students in the classroom.

She added that she used forums to have discussions with teachers and to find solutions to control the difficult behaviour of children, such as screaming and aggression. She explained that the forums had now become almost substandard for two reasons: (1) people tend to use Twitter and Instagram because there is a lot of interaction, activity and immediate responses; and (2) the administrators of the forums do not update the information so there is a lot of old and incorrect information; in addition, there is a lack of scientific documentation of the information: “Forums are copied and pasted without documentation or reference”.

TPS expressed the challenges she faced when using social media. The most important issue was the significant time spent on the platforms. This caused problems with her husband and her family, as she spent more time communicating with others and wasting opportunities for social interaction with her family.

She also said that she was upset about the presence of some people on social media whose aim was only to ridicule or laugh at the way children were trained or called them names such as “Mongols”. Such an attitude was hurtful and sometimes triggered disputes between the participants and the owners of the Twitter or Instagram accounts. As a result, some people stopped adding pictures to the detriment of DS children:

We want the government to establish deterrent laws for such abusers ... They must know that they might become parents of children with disabilities in the future. They must stop these socially unacceptable arguments that hurt the feelings of mothers.

She added that there was an immense reservation by some mothers in the presentation of clips depicting the training of their children for fear of shame and envy:

I personally fear that the reason offered by some mothers is not true—that they are afraid that their child will be envied! They may have a sense of stigma of society.

TPS concluded by saying that there should be an effective role for the government, and Special Education departments and the Ministry of Media in supporting and developing social media, which has become an alternative to the almost non-existent early intervention centres and activate the role of home visits. She added:

Social media has been and continues to be a big factor helping us as teachers to provide EIS for children with DS and also a great reason to educate parents about the rights of their children and to know about local and international laws and regulations. We need to educate mothers by using social media because it is a useful and inexpensive alternative.

5.4 Chapter Summary

This chapter presented the background and concise responses of the individual participants including their attitudes, experiences, and feelings. The narratives, which are not literal translations, have been kept brief and organised sequentially, making it easier for the reader to see the most important topics raised. There is still a wealth of interview data that has not been tapped into here. The focus has been on data relevant to the research questions. In the next chapter, the individual responses presented above are organised as themes. The thematic analysis (TA) of the above data will highlight the most pertinent issues raised by the participants, enhance our understanding of the role of social media in the provision of EI and provide the basis for developing a theoretical framework for this study.

Chapter Six: Findings: Thematic Analysis

6.1 Introduction

The responses put forward by the mothers and teachers can be organised in terms of the common themes and sub-themes. This chapter provides a thematic analysis of the interviewees' opinions. The participants in the current study made reference to mothers or teachers in general in Saudi Arabia who shared similar situations and worked with them as groups through social media. To make a distinction between the participants and the wider community of mothers and teachers of children with DS, I developed a coding as follows: (1) MG – refers specifically to the group of mothers in this study and (2) TG – refers specifically to the teacher group in this study.

As explained below, five themes and several sub-themes emerged from the interview data. Each theme will be discussed in turn.

6.2 Thematic Analysis

Theme 1: The Importance of using Social Media

All the participants highlighted the significance of social media in their daily lives. The first theme relates to the importance of using social media and can be further divided into three sub-themes, as shown in Figure 6.1. The participants stressed that social media had contributed significantly to providing clear, uncensored information and realistic experiences. Interviewees further pointed to the fact that social media provided fast and easy access to information for parents living in remote locations that were almost devoid of any EIS or special education. Also, social media enabled fathers to get more involved in the care of their children and to work alongside the main carers: the mothers.

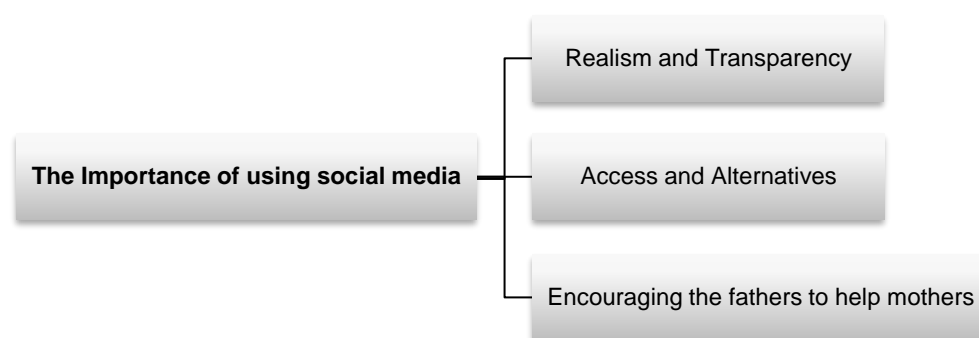


Figure 6.1 Theme 1 and its sub-themes

Sub-theme 1: Realism and Transparency

The participants in this study were all enthusiastic about the use of social media. Online platforms allowed them to support children with DS in a realistic and well-defined manner. The participants compared mass media outlets, such as television and newspapers, with their use of social media. They confirmed that mass media did not serve them as they had hoped and was limited. In contrast, social media provided a clear image and a realistic representation without any restrictions, thus helping to raise awareness about children with DS and their needs. In addition, social media has become a respected reference for the parents, the specialists and the general community. It has even become a way to contact and to communicate with the government because of its transparency and its realism.

According to M1, M2, M4, M5, T1 and T5, television portrays a formal and unreal image of DS, sometimes just to appeal to the compassion of society. The topics presented and discussed are not always significant to the real-life situations of DS children. Sometimes the important issues are censored, or they are presented with too much idealism. In contrast, social media platforms address the topics and issues that are relevant and real to DS children, their parents and their teachers.

Social media has enhanced the quality of the information available on DS, raised the awareness about the condition in Saudi society and highlighted the need for more EIS. M4 pointed out that "Mass media is just a manifestation of protocols, where a famous person and a child with DS appear to attract the compassion of society. Nothing else. While social media is defined by its realism".

Sub-theme 2: Access and Alternatives

Another sub-theme under "Importance of Social Media" is the easy access to the information about early intervention in more remote areas and villages, that is encouraging mothers and teachers to help children with DS. Also, social media offers an alternative solution, given the lack of providers of early intervention services in KSA. In some ways, social media helps solve the problem of the inadequate EIS and the expensive fees for early intervention services, such as physiotherapy, language therapy and behavioural therapy, which function separately in the private centres. Some families in KSA are not able to pay the costs of these special treatment sessions; some of these families are located outside Riyadh, either in villages or other areas where there are no EIS or even any schools for special education. Social media plays a major role in supporting them and facilitating their access to the services with little effort and time. M1 confirmed:

There is no excuse for parents to say that there is a lack of early intervention services in KSA, because these days, thanks to social media, families are able to use the media to serve their children ... Personally my child did not attend any EIS, except attending hospital visits; however, I was able to provide him with the correct training using social media.

T1 also referred to the role of social media in helping teachers to serve children with DS, given the lack of early intervention services in KSA:

You know that early intervention in KSA is unsatisfactory. There are not enough early intervention centres for areas of KSA and even the few centres in Riyadh lack the availability of integrated services and a team specialised in physical therapy, language, career, psychological, and social issues. So, we as teachers need the team but we do not find this available; at the same time, we do not have the skills to work in these other specialised aspects. Fortunately, the presence of social media has contributed to increase our practical knowledge of how to help children with DS and to try to solve the problem of a lack of teams of EI.

Sub-theme 3: Encouraging the Fathers to help the Mothers

In Saudi society, mothers have the responsibility of caring for children at home and following their academic development whereas fathers play a less important role in the education of their children. Therefore, some fathers do not tend to help their wives and look after the children. This theme shows that social media is a contributing factor in encouraging some fathers to become actively involved in their children's care, e.g., in training their children or attending seminars and awareness programmes. They also provide emotional and logistic support to their wives and even participate in volunteer work. According to M1, M2, M4 and M5, social media has played a significant role in encouraging the children's fathers to work alongside the mothers to help and support their child with DS.

Also, through social media, fathers can connect to others in the same situation and present their own experiences with their child to help other families. M2 said that because of her use of social media, her husband has become more enthusiastic about helping her and searching for information that would benefit her child, especially in the early stages of his life. She said that her husband was now one of the most influential users of social media because of his activities and voluntary services in support of children with DS and in informing other fathers of the importance of helping and supporting mothers. Also, M3 said:

I worked personally to help my child with the help of my husband, despite the lack of early intervention centres in Riyadh. However, social media was the best logistical support for me at a time when I needed a lot of information and needed to understand the correct scientific methods.

TG also pointed out that some fathers had been interacting with them via social media to learn more about DS and to support their children and their wives. The presence of fathers on social media platforms has been crucial in helping to further raise awareness about DS:

I notice positive changes in the role of the father in social media — perhaps this is one of the most important social media pros that encouraged the fathers to appear and help the mothers. (T2)

Theme 2: Advantages and Preferences for Types of Social Media

This theme focuses on the various social media platforms frequently used by the interviewees, as shown in Figure 6.2. The interviewees have explained the reasons for their preferences and dislikes for the different social media forms, as discussed below.

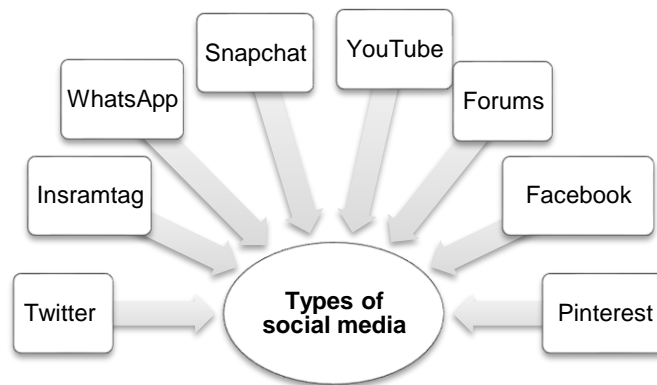


Figure 6.2 Theme 2 and its sub-themes

Twitter

MG confirmed in their responses that Twitter has played a major role in helping them, providing them with information on EIS and allowing them to communicate directly with specialists. It was also beneficial in aiding GM in putting their demands forward to the government:

Prior to the emergence of social media, I had to go personally to the Ministries concerned with the service of my child, such as the Ministry of Health or the Ministry of Social Affairs to know the rights of my child from the state and also know the services provided for him and to answer my questions about my child. Using Twitter, I am now able to communicate with specialists, within the Ministry and the government from inside my home. Taking action before the use of social media would take a longer period of time. (M1)

Furthermore, the importance of Twitter as a tool of communication with the government was highlighted by M1, M2, M3 and M5. All these mothers use Twitter as a social media platform to express their needs:

We as mothers ... if we want to search for the right scientific information we go directly to Twitter because we trust the specialists there, but when we want to get personal experiences with children, we use Instagram and Snapchat. (M2)

M5 gave her opinion on the importance of Twitter for her as a mother and for her colleagues who are mothers: "Twitter is powerful because it is more specialised, accurate, widely used and available to segments of society". M1, M3 and M5 compared Twitter and Instagram, explaining that Twitter was easier to use than Instagram in terms of reading and writing. They also stated that they had had issues uploading images onto Instagram, which required the use of special apps.

The TG's responses were in concordance with those of MG in that they also agreed that Twitter was the most important type of social media for them to use. TG also highlighted the presence of a large number of specialists in the field of special education from whose experience and expertise they can benefit. Like MG, TG used Twitter to communicate with the government and ask them to provide early intervention service centres in Riyadh and other regions of Saudi Arabia, especially in the more rural areas. Moreover, TG pointed out that Twitter allowed them to gain the correct scientific information and they were kept better updated on new research and new information on DS and also with the latest books, upcoming lectures and conferences on special education. In this respect, T1 reported that "Twitter helped me know how to apply the behaviour modification techniques for the kids in their early stages and also allowed communication between me and the language and speech specialist when my students needed it".

Instagram

Instagram is also a popular platform for MG who argued that Instagram was the place to meet a large number of other mothers in similar situations and to exchange information and discuss experiences. In addition, MG explained that Instagram was a useful tool for them to document their child's progress through the upload of pictures and to explain the steps in the training of certain skills necessary for the child, such as training in motor, language and general daily life skills. MG saw Instagram as a solid reference point with valuable visual information in KSA, the Arab Gulf states (in Kuwait, the UAE, Qatar, and Bahrain), some other Arab countries such as Egypt, Morocco, Sudan and Jordan, as well as America, Canada and even some of the European countries, such as Britain, Sweden and Switzerland:

Instagram has the advantage of saving information and images which can be referred back to at any time. Whereas on Twitter — due to a large number of people constantly adding images and information — valuable information can be lost quickly. (M5)

Instagram contributed to the spread of useful information and skills when training a child for a large audience of mothers. This helped contribute towards increasing communication between mothers within KSA and overseas.

These views were echoed by TG. They pointed out that through the exchange of step-wise training tips and pictures, Instagram allowed the mothers to support their children and to deal with some issues. T1, for instance, was able to keep in contact with several mothers (especially those from rural areas), to help them with behaviour modification techniques, to give them advice and to offer ideas on how to strengthen motor skills and help with the pronunciation of letters and especially to correct any inaccurate information they may have received. Instagram was preferred over Twitter in specific circumstances: Instagram is a personal site for each individual to add images and interact with others, whereas Twitter is an official venue for the exchange of information with specialists.

Additionally, TG favoured the use of Instagram for their contact with people in foreign countries. They found that the platform provided new and effective methods and skills when training children with DS. It also provided advice and guidance to mothers in their child's early developmental stages. According to T4, the use of both Instagram and YouTube, especially from the global sites, would allow teachers to work more effectively with their DS children, especially given the lack of early intervention services in KSA.

WhatsApp

WhatsApp was also a popular platform among MG. M1 and M3 agreed on the many benefits of WhatsApp. M1 explained her experiences when she set up and supervised three different group chats on WhatsApp. The first group was for exchanging information between the mothers and the professionals, the second group enabled the mothers to share their own experiences with one another; lastly, the third group chat was designed to announce and advertise useful events and seminars about DS in children, and to encourage the mothers to attend and to participate in the various events. M1 expressed her great admiration for WhatsApp, through which she worked with a group of volunteers to set up groups in Riyadh and then expanded to other various regions of KSA and the Gulf countries such as Kuwait, Qatar, Bahrain and the UAE, as well as Arab countries such as Morocco. M1 also explained some of the positive aspects of the use of WhatsApp: it helped to send out the invitations for awareness-raising events and free consultations that are provided by the specialists in the field of special education within the community. In addition, the groups which used WhatsApp exchanged information and experiences about DS, shared advice on dealing with specific issues, raised awareness among the new mothers and provided them with psychological and emotional support.

However, the use of WhatsApp was also seen as somewhat problematic. M3, for instance, had a tendency to compare the performance of her child with that of other children. She was able to overcome this problem thanks to one of the special education teachers who had explained that each child had strengths and weaknesses and cannot be compared to others. As for M2, she believed that the chat groups on the platform were too big with most of them including between 60-200 mothers. It was sometimes difficult to keep up with the pace of the messaging. Also, the participants in the chat tended to go off topic many times—talking about other issues rather than the children, thus wasting a lot of time.

As a remedy for these issues, M2, M3 and M5 suggested that group chats in WhatsApp should only include up to a maximum of 10 mothers each. It would thus be more organised, everyone would be able to take full advantage of the exchanges and the distractions and digressions could be kept to a minimum and dealt with more effectively when problems did come up. M2 and M5 also stated that it would be beneficial if the group chats were to be supervised by a specialist in special education in order to prevent the propagation of any incorrect or otherwise misleading information.

TG also described WhatsApp as a useful and easy-to-use platform that was widely available. However, they also thought that there were several problematic issues with its use. For instance, some mothers would expect the teachers to respond immediately to their queries, while others would communicate with them at inappropriate times of the day. This would sometimes lead to embarrassing situations for TG.

Nonetheless, T2, T3, T4 and T5 argued that WhatsApp was useful in their interactions with professionals and specialists, whether in the field of special education or physical therapy or language. However, T2, T3, T4 and T5 confirmed that the interaction between mothers by means of WhatsApp is more effective than communicating with them in other ways. Though TG did not find WhatsApp ideal for communicating with parents, some mothers preferred to use the platform for communicating with them:

Some mothers prefer to communicate with me with WhatsApp through private messages, although I prefer to keep them in groups to benefit everyone. Unfortunately, there are mothers who are ashamed to show their child's problem in the group and yet I try to use WhatsApp to support mothers. (T1)

Snapchat

M1, M2, M4, M5 and MPS believed that Snapchat was a more personal social media outlet. Snapchat was used more in a family environment and to raise awareness among their relatives, and more importantly to change the negative attitudes of some of their family members and close friends towards children with DS. It is used as a platform for MG to show that their children are able to learn and develop just like other children. For instance, M3 posted pictures and clips of her child to many mothers who follow her on Snapchat, so that they could follow the development of his language skills and his daily exercises. Such posts were usually followed by discussions on the ways to train the children. She also confirmed that Snapchat operated as a tool for distance learning through workshops broadcast live from some Gulf Arab countries such as Kuwait (3 training sessions per week for 3 months). M3 recorded these workshops which were led by a famous speech specialist.

Snapchat also proved to be a useful platform for TG. They used it for three reasons: (1) to follow the children with DS in their daily life at home; (2) to announce events regarding children with DS such as seminars, conferences and celebrations such as World Down Syndrome Day, and if the teachers were not able to attend then they could view live clips from the event; and (3) to help raise awareness amongst the teachers' close family and friends about children with DS and to help provide new EIS:

Through Snapchat I was able to change my family's negative attitude and views on children with DS and their ability to learn and even encourage them to enter the field of special education (...) As a result of broadcasting my sessions with my students on Snapchat, I have gained my parents' support as a teacher of children with DS and I feel proud of this accomplishment. (T1)

YouTube

M1, M4 and MPS confirmed that YouTube was the most beneficial social media platform for them. This was especially the case in the early stages of development of their children (between 2-12 months) due to the lack of information on early intervention services in Riyadh. M1 and M4 were able to form friendships with other mothers from outside KSA, such as Canada and Switzerland. Through YouTube clips, they have acquired new ways to help strengthen motor skills, learnt more about physical and functional therapies and the development of cognitive skills:

I learned how to strengthen the tongue muscles from YouTube as it is a basic step before teaching the child to pronounce, especially for children with DS. (MPS)

TG were also enthusiastic about YouTube and emphasised its effectiveness in supporting them to gain more factual and practical information and expertise. Through YouTube they could watch specialists perform physical and functional therapies and practise language and speech skills. Such clips encouraged them to apply innovative methods and ideas to their teaching. TG highlighted that they used YouTube clips in the classroom as an interactive educational tool for students with DS. By watching clips students could acquire a number of linguistic, social, motor and cognitive skills. In addition, T1, T2, T3 and T5 emphasised that YouTube clips from Western countries contained more beneficial information and content compared to the Arab YouTube videos.

Forums

MG pointed out that in their early days, the forums were useful and included numerous participants with whom they could discuss the needs of their children and exchange information and advice about useful motor and linguistic exercises for their children in early life. MG agreed on the role of the "Medical Genetics Forum", which contained reliable information; it was a good source of support for mothers and provided them with advice on how to intervene early with their children. According to MG, the Medical Genetics Forum, which is supervised by a paediatrician and other specialists in the field of special education, has contributed to raising awareness about the nature of working with their children. The forum creates and distributes a large number of useful booklets both inside and outside KSA. It provides annual awareness campaigns and brochures focusing on EIS for children with DS. However, MG were dissatisfied with the general standard of the forums which had previously been kept more up-to-date. MG indicated that foreign forums were more useful than Arab ones. M4, M2 and M1 criticised the development of special education forums in KSA for lacking updates, containing incorrect or duplicate information, and missing references for the information. This was leading to a lack of confidence in other content that was posted in those forums.

TG agreed that forums were less efficient than they were at the beginning, as the information contained therein had not been updated in some cases for close to ten years. Special education forums have been effective and were a reliable source of information from 2005 to 2010. Also, the number of people watching forums has dropped significantly after the emergence of Twitter and Instagram.

Facebook

Participants in the study described Facebook as one of the platforms that they used quite infrequently. It was mostly utilised to review the experiences of other mothers, and teachers from Arab countries. For instance, although M1, M2, M4 and M5 did not use Facebook themselves, they specified that their non-Saudi friends from other Arab countries such as Egypt, Jordan, and Morocco did use Facebook more often and encouraged them to do likewise. However, M1, M2, M4 and M5 felt that Twitter, WhatsApp and Snapchat provided them with sufficient information and adequate support:

I started using Twitter and I love it far more than any other type of social media. As for Facebook, I feel reluctant to use it and don't feel it is safe. (M3)

However, M3 does use Facebook. Through this platform, she met a mother in Egypt who produced training tools for her child from household materials. This Egyptian mother provided M3 with useful information and innovative ideas to train her child in language skills and daily life skills such as eating. As for TG, they pointed out that they never used Facebook. In fact, they started using social media for their work when Twitter was first founded.

Pinterest

The usefulness of Pinterest was highlighted by only one participant, T2. She used the site to download images of different teaching methods and utilised them as learning tools for the teaching of specific skills in the classroom. She enjoyed using Pinterest and referred to it as an "electronic library" that is ideal as a reference for her future plan to start a YouTube channel.

Theme 3: Benefits of Using Social Media

The third theme that emerged from the interviews relates to the benefits of using social media. All the participants agreed that social media was valuable for the training of their children, especially in terms of early intervention. This theme has been divided into seven sub-themes, as shown in Figure 6.3.

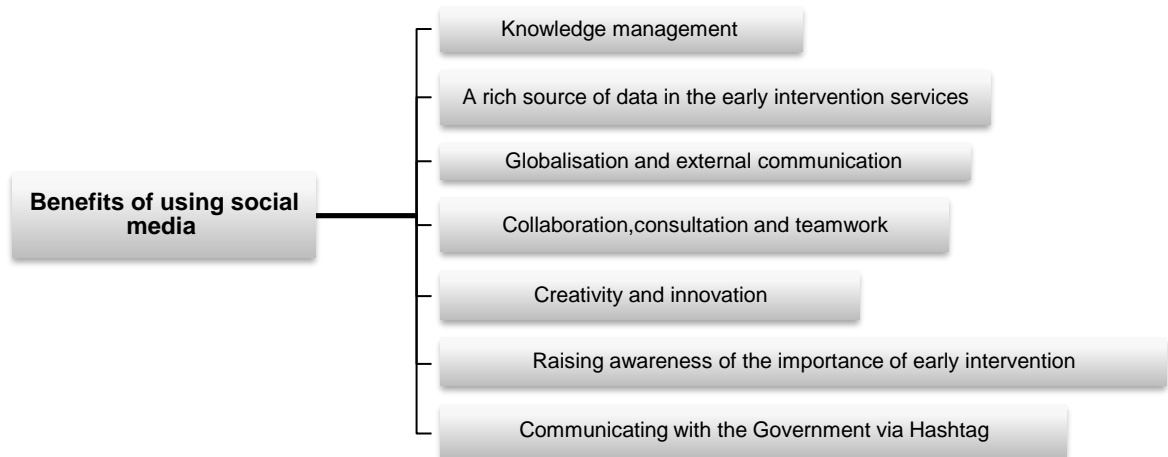


Figure 6.3 Theme 3 and its sub-themes

Sub-theme 1: Knowledge Management

Social media has allowed MG to acquire up-to-date knowledge about their children's condition. It has also assisted them in the acquisition of new and effective skills in dealing with their children, especially in the early stages of their development. The mothers pointed out that the EIS were crucial but severely lacking in KSA. MG felt that social media was a platform to communicate with a large number of specialists such as doctors, speech therapists and physiotherapists to help deal with their children with DS. The platforms were particularly useful for MG in KSA to interact with mothers from over the globe who had relevant skills and new and creative ideas when dealing with children with DS, specifically in terms of EIS:

Through the use of Instagram, I was able to acquire new experiences from other mothers and to share this information further. I learned different training methods to help support my child in her language and motor skills, in physical therapy as well as in the modification of undesirable behaviour. (M2)

In the same context, M3 and M1 added that Instagram had helped them follow up on the methods that an American mother used and they applied them to their own children, which produced excellent results. In addition, M1 and M3 mentioned that they would also record their child's progress and upload it on Snapchat or Instagram, with the hope that it would benefit other mothers too. M4 also used social media to support other mothers:

Every week, I pick an educational goal to teach the child, for example, learning alphabet sounds using my previously successful experiences and skills. I receive feedback about my videos and step by step images are useful and help support people. This gives me great pride in being able to help other mothers.

TG believed that social media was an effective communication channel for the exchange of information and experiences among themselves, as well as with specialists in different fields relating to special education. Also, through direct contact with specialists in and out of KSA, TG were able to enhance their knowledge of DS and improve their teaching practices for the benefit of students.

TG pointed out that they have been able to use social media as an effective means of acquiring useful knowledge on how to provide EIS for children with DS, as well as sharing this knowledge and experience with each other, with parents of children with DS or with specialists who are interested in caring for the children. TG stressed that social media was a “real saviour” for them and that in some ways: it almost made up for the lack of speech therapy and other specialised centres for people with DS. Social media played a key role in allowing TG to reach out to these specialists. TG benefitted especially from the methods, training and knowledge in EIS in several areas: speech therapy, physiotherapy, occupational therapy, sensory perception, behavioural modification and the development of major and minor motor skills in children with DS.

Sub-theme 2: A Rich Source of Data in the Early Intervention Services

The participants stressed that social media has already become a major source of reliable information on how to provide EIS for children with DS; nonetheless, they criticised the lack of centres that specialised in EI and the shortage of qualified personnel to start up these centres. M2 explained how her husband worked together with a number of doctors and specialists through Twitter to publish annual books on EI for children with DS from ages 1 to 5. She added that these well illustrated books showed how to train children in the early stages of development. The explanations were kept simple so that parents could easily understand. The books have been distributed inside and outside KSA in the Gulf countries such as Kuwait and Qatar and there is still a large unfulfilled demand from other Arab countries.

M1, M3 and M4 stressed that interactions between parents, teachers and professionals on social media were an important source of information. The information was not limited to written words but was also made up of images, videos and audio clips and was accessible to a wide audience, ranging from educated to non-literate mothers. Moreover, MG stated that through social media they were able to correct some of the wrong and preconceived ideas that other parents had about DS.

Furthermore, M1, M2 and M4 underlined the ease and speed with which information could be relayed via social media. They referred to social media as an “electronic book” that was more beneficial than paper books. M4 went on to explain how she contributed towards building a large database of information on Saudi websites by collecting and translating information from foreign sites such as USA, European, Canadian and even Swedish sites and then adding them to Arab social media. Thus, other mothers were able to benefit from the advanced and different methods applied in the training of children with DS.

However, M4 criticised the level of knowledge and understanding of some of the early intervention service centres stating that what was available online was far more beneficial and reliable than what was practised and endorsed by these centres. Social media such as Instagram include a large number of experts and also personal experiences of some foreign mothers from USA and Canada who provide different and sometimes more effective methods and practices.

The TG's views were similar to those of MG on this subject, stressing that social media was an effective source of information when dealing with children with DS, especially during the early stages of development. All TG agreed that Twitter was the most reliable resource for scientific information, because of the presence of several specialists in the field of special education who were available to answer queries from parents and teachers.

Also, through the use of Twitter, TG were notified about the release of the latest scientific books related to early intervention, in Arabic and in other languages. This contributed towards the development of theoretical knowledge and practical skills when dealing with a child in a classroom environment.

Sub-theme 3: Globalisation and External Communication

Globalisation and external communication were some of the most significant benefits of social media according to the participants. Communication globally is considered important because it has brought new and advanced methods, skills and experiences into KSA. External communication can be divided into three main aspects, as explained by the participants: communication within regions and villages of KSA; communication between KSA and the Arab Gulf countries such as Kuwait, Qatar, Bahrain, UAE and also with Arab countries such as Egypt, Jordan, Morocco and Sudan and global communication between KSA and foreign countries such as USA, Canada, United Kingdom, Sweden and Switzerland.

M2, M3 and M5 stated that social media helped them to reach out to remote areas of KSA, especially in southern regions of KSA such as Taif, Abha, Jizan and Najran, where there is a scarcity of EIS. In some places, speech therapy and physiotherapy are available in private centres, but at a high price which is not accessible to many parents. M1 explained how Twitter can be used to communicate with doctors outside of KSA:

Through Twitter, I found a doctor in Germany and then travelled there with my child to get help concerning her sensory perception, which she had issues with, as well as developing her motor skills.

M3 also supported the benefit of external communication saying that "I was able to get to know a mother from Egypt through Instagram and Twitter; we exchanged information and personal experiences". The Egyptian mother provided innovative ideas where the materials available at home were used for the training of the child.

M4 had a similar experience to M3. She was in contact with an American mother who taught her more than the special education teachers in KSA. She learnt how to communicate with her child in a step-by-step manner.

M4 also discovered a different way to communicate visually with her child and many new ideas that she could easily try out using the tools she had at home. M2 explained her experience with an Arab family from Jordan whom she met on Twitter. The family had twin sons with DS aged 48; M2 visited the family to see their daily lives and how they coped with their sons. Previously she had heard that children with DS died at a young age and was worried for her own child; however, once she had met the family, she felt reassured.

The TG's views were similar to those of MG. They confirmed that social communication allowed them to communicate with experts inside and outside of KSA, which contributed to developing their skills as teachers and acquiring new information from different educational environments. T1, T3 and T4 mentioned that the lack of early intervention services in KSA forced them to develop their skills: they learnt to be speech therapists and physiotherapists at the same time. The teachers said that they communicated with female specialists in Egypt and Jordan to benefit from their experience and enhance their training methods.

Sub-theme 4: Collaboration, Consultation and Teamwork

The participants emphasised that by bringing together different specialists, social media helped them work together as a team in order to help children with DS. Such a wide range of specialists is not available in school grounds or special education centres. This team of integrated specialists, people with visual and motor disabilities, parents and teachers facilitates the successful training and support of children with DS. M1 explained that by means of social media, mothers were able to form voluntary teams to help each other. One of the most important forms of co-operation was that mothers in Riyadh assisted other mothers in remote villages through WhatsApp. For example, mothers in rural areas will receive prescriptions for medicine that are not available in their local free pharmacy. These mothers are not able to pay for the medications so they send images of the medicine via WhatsApp to mothers in Riyadh, where the hospitals and drug stores have a larger inventory of free medicine. The mothers in the city will then post the medicine to mothers from the village: this is important and valuable to mothers who live in rural areas.

M1, M2 and M4 explained their individual involvement in helping out other mothers. M4 explained how she would attend lectures and workshops in USA and when she returned she would send the papers, pictures and videos to the other mothers who had not been able to leave the country due to their circumstances via Twitter and Instagram. Similarly, M2 would record the lectures and seminars she attended and send them via Instagram to those who were not able to attend so that they could also benefit.

M1, M2 and M4 have also been involved in the distribution of books and brochures by post to mothers inside and outside KSA, after identifying their addresses through WhatsApp. In addition to helping each other, they also made one another aware of centres that focus on supporting children with DS. MG commented on the advantages and disadvantages of the different centres on social media.

Moreover, social media provides a space for exchanging practical information between mothers. For instance, M2 said, "Through Twitter, my husband and I were able to find out about the best child booster seats for my son and we tried to order them from outside of KSA". She posted pictures of the product online, which led to many people asking her where and how she had acquired such a useful and high-end product. M2 also explained how another mother was having some problems and she and her husband worked together as a team to try and help her. She went on further to say that her older children also played a key role in spreading awareness of DS in children on Twitter via images and video clips.

In addition, M1 explained how she worked with a group of mothers as a volunteer group to help spread awareness of DS in young children and to further enhance their own knowledge. Different roles were divided between the group and each member of the group had a role based on their strengths and skills. For example, one mother who spoke fluent English translated YouTube clips and audio clips and distributed them amongst the mothers. Another mother with strong connections with people in the government was assigned the role of communicating the needs of the group to the ministries in KSA.

MG agreed that social media contributed to quick and free consultations with a doctor or specialist. This has proven to be beneficial as free government funded special education services are limited, while those provided by private centres are expensive. Thus, social media can be greatly advantageous in creating almost immediate and effective communication channels between the parents and the consultants. MG expressed their appreciation and gratitude for the recommendations available online and stated they had benefitted greatly from the advice they received from the experts.

As for TG, they argued that social media encouraged them to form an online team, which included volunteers such as parents, teachers, and specialists, on various sites such as Twitter and Instagram. The online groups are supervised by doctors or university professors, and people with disabilities contribute towards the websites by raising awareness and offering their own personal experiences. The online team works to raise awareness in the community by informing people of lectures and events targetted at the carers of children with DS. TG noted that all these events and lectures have been funded by the volunteers on the team; the group is not supported by the government and is being completely financed by themselves only. The pressures imposed by this self-financing can be problematic at times.

In addition, these online teams also work to create workshops between specialists such as physical, functional and speech therapists and parents along with teachers in order to facilitate the exchange of information. Also, TG use WhatsApp amongst themselves to discuss and exchange scientific research with one another, thereby creating a larger database of information between them. T5 stated that she and her colleagues also participated in studies by university researchers by filling out questionnaires or taking part in one-to-one interviews that relate to the field of special education.

TG also highlighted the effectiveness of the online counselling on social media sites that are provided by numerous specialists in various fields related to EIS in children with DS, which includes academics in medicine, psychology, sociology, physiotherapists, occupational and language therapy. These specialists have contributed to answering the needs and queries of teachers, parents and anyone who requires information or a consultation. Such a service is crucial, especially in light of the lack of special education centres in KSA, particularly in rural areas, where there are few centres. The consultations are essential in correcting any misinformation that has been given, or any wrong practice by teachers or parents as it enables them to acquire up-to-date information.

Sub-theme 5: Creativity and Innovation

MG found that social media has encouraged them to be creative by introducing ideas and creative solutions to solve their children's problems, especially in the early years of their life. In addition, they were making use of raw materials available in the environment in order to create effective teaching or training methods to stimulate the children's learning and linguistic skills. These creative ideas were useful in enhancing the quality of their children's home training and also helped cut down on the costs of buying materials needed for the training. M4 explained that

On YouTube, my attention was attracted by some mothers outside Saudi Arabia who used simple means from home to train their children on motor skills, such as using a laundry basket, candles and empty boxes where things were put to catch the child's attention. So, I tried to imitate them and devise ways to teach my child some skills using simple means which I developed myself. I felt the increasing desire to think creatively and constantly innovate in the manufacture of training methods on different skills and the participation of other mothers in my experiences through Instagram.

M1 explained that she observed the design of websites and went on to display her own skills by creating advertisements for events for children with DS. She would then publish them on social media sites such as Twitter and Snapchat to help raise awareness. For M1, social media opened a horizon of new experiences and reduced her fear that her child would not progress due to his disability. Overall, the mothers agreed that social media encouraged them to be positive and provided them with great support.

As for TG, their responses showed that YouTube played a significant role in comparison to other platforms in encouraging them to innovate and design effective teaching tools to train children in terms of language skills and mobility. The clips were attractive and encouraged them to achieve the desired goals. In addition, YouTube in foreign sites contributed to the development of ideas of the teachers who tried to get some creative ideas and try to use them according to the Saudi environment and use and then produce other ideas more creative and useful. TG pointed out that YouTube helped in garnering the attention of children with DS through songs and appealing music, which was essential in ensuring their successful training. YouTube played a vital role in introducing many new and effective training skills. TG creatively compiled a number of videos and stories based on sound, music and attractive images, where they take into account the set educational goals and desired learning outcomes.

T1 also compared language training on YouTube with training from language and speech specialists. She confirmed, from her practical experience, that language training using YouTube clips is more effective and creative than training a child with a speech therapist who only works for a specific time. The teacher can use YouTube all the time in a variety of ways and this makes the training more engaging, innovative and successful than the traditional methods. In the same context, T4 and T5 described how YouTube helped them create attractive mental games to develop children's sensory perception. In addition, the teachers found effective educational aids to develop both fine motor skills:

Using Pinterest and YouTube, I have created multiple educational ads and learning tools to help develop linguistic, cognitive and motor skills to use in a classroom and I feel like a professional ad designer. In the future, I plan to start my own YouTube channel showing people how to design educational materials for use in a classroom environment. (T2)

T3 also referred to her own experience with her colleagues, where they benefitted from some creative and entertaining ideas that they found on YouTube, such as fashion shows to help improve the children's social skills. She said:

We have been holding an annual ceremony for fashion shows by young children with DS in order to support them on the social side and a large number of people and some officials in the community attend the celebration. This is one of the creative ideas that has been implemented in the centre through our constant follow-up of social media and the knowledge of every new thing offered to children. The results were amazing for the children themselves and their families as well.

Sub-theme 6: Raising Awareness of the Importance of Early Intervention

All the participants in this study said that social media played an important role in raising awareness about children with DS, especially about the critical importance of EIS. Within the community, children who have learning difficulties are viewed negatively and are deemed to be incapable of learning effectively and generally display behavioural problems. MG firmly stated that by posting their children's pictures on Instagram and presenting their developments and accomplishments, they had changed the negative perception people had and encouraged people to accept DS into society. It also helps to raise the awareness of the families of children with DS regarding the need to seek EIS for their children.

MG explained that some mothers in Saudi society felt frustrated when dealing with their children. These mothers feel that it is the responsibility of the government to provide EIS for their child and they do not actively support their child; thus, this negatively affects the child's development. M1 also added that the posts of her daughter's pictures on Instagram during her training encouraged other parents to learn to accept their children with DS and support them rather than neglect them:

I received a message via Instagram from a father who said that he and his wife hated their child and felt helpless and unable to support him. But when they saw my work and effort with my daughter, it gave them hope and strength to try to help their child. (M1)

M2 also explained her role in raising awareness with families of DS children regarding the facilities provided by the government. For example, the government provides financial support, free special education centres, a private car and driver and a domestic nanny. M2 added that she felt that she helped educate a large number of mothers in Riyadh and rural areas in KSA. MG mentioned that through the use of Twitter and Instagram, they were keen to direct their efforts to reach out to and attract as many new mothers as possible (mothers of young babies) to educate them on how to deal with their new-born with breastfeeding, nutrition plans, and ways to strengthen the muscles of the child. They would also like to provide information on how to support the child psychologically.

MG clarified that the way in which the doctors would convey the message that their child had DS was "painful and sad", which led to "intensifying the efforts to help as many new mothers as possible to not feel that same pain". MG also added they wanted to help mothers to break the news to fathers that their child had DS. Sometimes, out of fear of separation, mothers would keep the child's disability a secret from the father. This is supported by M1 who described a mother who hid her child's disability for 4 months from the father for fear of a divorce that would "destroy her family". That mother was part of a WhatsApp group which supported her. She was advised to see a psychologist with her husband. The meeting with the psychologist helped the father to accept his child.

Moreover, TG stressed that there were two main aspects to the use of social media to raise awareness. The first one was to change the negative attitude of their families about the nature of their work with children with DS. TG used Snapchat to display their daily work with children with DS and show that the children were just as capable as other children. They highlighted the ability of the children, their skills and their learning process. It is crucial to highlight their abilities so as to change the negative perception towards children with DS and also to gain the support of the families of TG in terms of the latter's career choice. The second aspect was the role of social media in helping mothers to deal with their child with DS and providing them with a number of new, creative ways to help train their child during the early stages of their development. In addition, through the platforms and online brochures designed by teachers, the mothers were made aware of hospitals and medical centres providing physiotherapy.

TG such as T3 used social media as a tool for raising public awareness and for changing the negative perception of children with DS: "I am keen to speak to the public and answer any queries they may have and encourage them to open up and ask me anything they may have issues with". She also informed people about how and where to get specialist help.

T2 explained that she was part of a support team on Twitter and Instagram, where they attempted to gather and meet many locals face-to-face to answer their inquiries. T2 went on to explain that a "father came to us and told us that he had prevented his child from leaving the house for 3 years and expressed his frustration with the lack of EIS". Through her support team on Twitter, he became aware of events concerning children with DS. So, he contacted the account holder of the advertisement and soon became part of the team of people raising awareness of children with DS. He had turned from a father who lacked information and understanding into an active parent and a keen volunteer.

Sub-theme 7: Communicating with the Government via Hashtags

The participants stressed that Twitter was the only way to communicate their views and demands to the government via the use of hashtags. They also added that on Twitter the response of the government was immediate. The participants compared the response they would receive from the government before and after the emergence of Twitter and stated that before Twitter, it took months (sometimes even years) before they would respond. However, after the rise of Twitter, there was direct contact with the government which allowed for more effective and rapid communication.

The participants mentioned some of the topics that they had submitted to the government using hashtags and discussed the response they had received. For example, in KSA, there is a lack of early intervention centres, and the few existing centres are usually privately owned, with high tuition fees. According to the participants, other families and teachers in KSA have tried to communicate their financial issues to the government via hashtags so that the latter removes the fees levied by the centres.

The participants expressed their appreciation to the government, who responded by contacting the centres saying that they would fund the school and asking them to admit the children with DS. In addition, another request that had been accepted was for the state to provide children with DS with any urgent health care, especially in the first few years of their life. However, families have been demanding more early intervention services to be available in regions of KSA and are still awaiting a response from the government. M5 explained her experience in using hashtags: "On Twitter, I feel confident to raise sensitive issues that are important to discuss such as child harassment or molestation". She went on to express her surprise at the positive response, which made her happy and more confident to talk about controversial topics. T1 explained that hashtags on Twitter also helped teachers in presenting their demands to the government to provide certain privileges to the teachers. This Hashtag system was supported by the majority of the community.

On the basis of the above, it can be concluded that Twitter is the most effective platform to communicate with the government. According to the participants, through the use of Hashtag, Twitter offers the following advantages: speed of communicating the demands to the government, direct communication with the officials, transparent and effective communication between teachers/parents and the government, source of information, opportunity to raise awareness among the community about the needs of disabled people. Other platforms, such as Whatsapp, Instagram and Snapchat, are good for communication with other parents and teachers, for disseminating knowledge on DS and for raising awareness of the condition.

Theme 4: Barriers and Challenges to Using Social Media

Under this theme, participants reviewed the most important problems and challenges encountered in their use of social media. Seven sub-themes emerged from this theme, as shown in Figure 6.4.

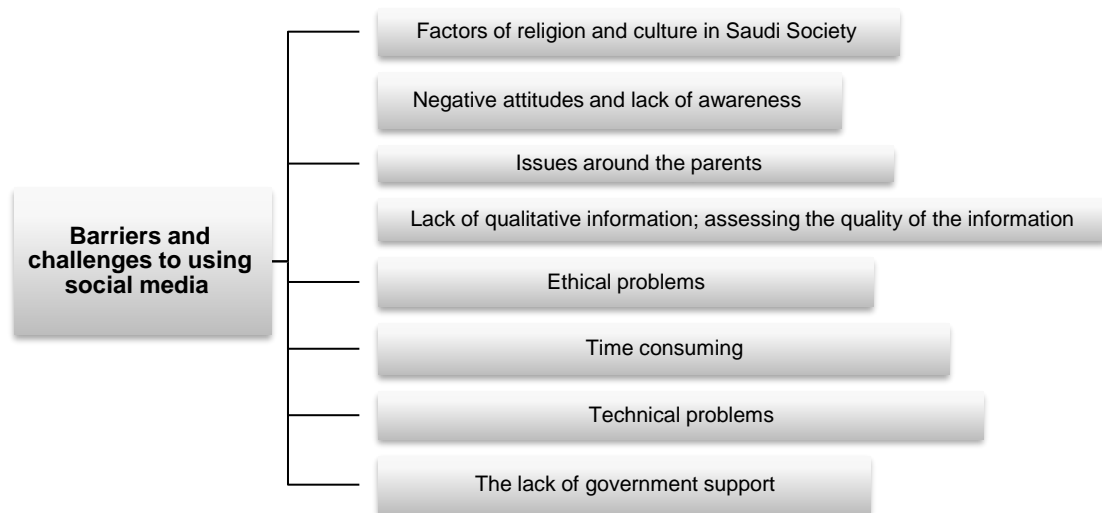


Figure 6.4 Theme 4 and its sub-themes

Sub-theme 1: Factors of Religion and Culture in Saudi society

MG hesitated to post on social media because of their religious views, stating that Islam forbade women to appear on social media without wearing a Hijab. However, some mothers in the study claimed that the hesitation did not come from religion but from the conservative culture of KSA, where men were opposed to their daughters, wives and sisters exposing themselves on social media. According to the mothers interviewed, the main reason for their reluctance was unclear and some mothers gave conflicting views on the matter. MG reported that they had difficulty in actively participating on social media, especially on YouTube or Instagram. They found it hard to clearly show training techniques and methods on the social media platforms, whilst simultaneously having to wear the Hijab. This made them reliant on their husbands, who were busy and unable to co-operate. In this regard, M4 said: "I cannot take video clips of my child's exercises freely because I can't appear on it even if I wear a Niqab". Also, M5 pointed out, "I cannot have my voice on any of the videos I post, because my husband won't accept it, I need his assistance when recording videos and he is always busy".

At the same time, TG expressed no problems with taking pictures or videos during the children's training, or having their voices explain the steps for new training methods on clips uploaded onto social media. The issue TG face is the refusal of some mothers to allow their child's photos or videos to be posted on social media. According to TG, this reluctance is due to the fear of the "evil eye", or not wanting others to know that their child has a disability, i.e., out of shame.

T1, T2, T4 and T5 confirmed that those who did not post clips of their disabled child on social media usually came from rich and prestigious families. T1 reported that she had been verbally abused by one of the mothers, who threatened to file a complaint to the Ministry of Social Affairs if she posted pictures of her child on social media, thus forcing her to photoshop the child's images to hide her face. T1 expressed her feelings saying, "I feel sorry for my students, that it is not possible to document these important milestones of their development". T3 compared the difference between the mothers in KSA and in other Gulf countries such as Kuwait and the UAE. In the Gulf countries, mothers freely took photos of their children, whereas Saudi mothers were more conservative and unwilling to post pictures and videos of their DS children.

Sub-theme 2: Negative Attitudes and Lack of Awareness

On this subject, participants mentioned a number of negative attitudes that were encountered during the use of social media. The following summarise the main issues: (1) reactions of some mothers of children with DS; (2) reactions of some doctors at hospitals and (3) the responses of some members of the community. M1, M2 and M5 cited examples of some mothers on the WhatsApp groups who displayed negative attitudes towards the children with DS:

These people will not learn ... we cannot help them ... there are no early intervention centres, this is the problem of the government ... don't trouble yourselves ... God help them ... we will not be able to help them.

M1 presented her own way of dealing with the negative responses of these mothers: "I try to correct them and provide them with my own experience with my child and how EIS benefitted her greatly". M1 went on to explain that sometimes she would receive a positive reply, thus helping to change the negative attitudes and perceptions of the mothers and getting them to support their own children better. However, other mothers would not respond positively and would carry on venting their frustrations and talking about the children's failures. In such situations, M1 would talk to the mothers in a private chat. If the mother continued to be negative in the group chat influencing others, she would then be blocked and removed from the group. M1 explained:

I do not want to hear their disappointment and negative attitudes that are neither constructive nor useful. I want to work with mothers who are brave and have a positive outlook on their situation and their children.

The biggest problem, according to M1 and M4, is the shyness and lack of confidence of some of the mothers: they feel embarrassed or ashamed of their child with DS. This observation also applies to the highly educated mothers, i.e, those with higher education degrees, such as Masters or PhD. M5 thought that mothers displayed negative attitudes towards children with DS for various reasons. The first reason relates to the socio-cultural environment of KSA and the deep-rooted hard-to-change ideas and views on DS endorsed by mothers. The second reason is the lack of support from the government and the limited number of EI centres.

The mothers' negative attitude derives from their failure in being able to train and progress with their child. This failure results from the lack of EIS to help mothers to cope and assist with the development of the child. M5 also emphasised that there had to be legislation or action which made it compulsory for mothers of children with DS to attend and take part in EIS.

As for the negative attitudes of the doctors, MG stated that they had received offensive remarks from the doctors after having given birth to their child who had DS. MG felt emotional when remembering how the doctors treated them and how they delivered the news of their child having disabilities. The doctors would refer to the child as ‘Mongolian’ or ‘a mindless child’ and other offensive names, which would cause the mothers grief and distress. MG concluded that, “If educated doctors are treating us like this and referring to our children in an offensive nature, what can we expect from the community?”. M2 shared her experience of the time when her child was in his early years of development, and how the doctor conducting the monthly medical checks would say, “Your child is a Mongoloid...just give him food and comfort, you can't expect him to have a bright future”. M2 described her terrible pain when the doctors spoke in such terms. Their use of offensive and unacceptable terms to refer to their children as “Mongolian” instead of the correct scientific term “Down’s syndrome” was hurtful. M2 explained her efforts to correct them and how she tried to educate the doctors to use appropriate terms.

Lastly, MG were upset by the negative attitudes of some members of the community, who influenced others around them. MG clarified that some members of society wrote disrespectful and inhumane comments on social media. For example, a mother posted a video clip of her training her child to eat and some of the comments under the video were insulting such as, ‘your kids eat like animals!’. MG explained that comments such as these could potentially cause conflicts between different parties on social networking sites. Some mothers have the courage to respond and defend their child; however, others are negatively affected and completely withdraw from participating in social media or posting pictures of their DS children on social media. This deprives them of the opportunity to help other mothers and continue to raise awareness.

TG explained that the most common problem they faced was the attitudes of some of the mothers as well as a few of the female teachers working in the field of special education. They felt that the negative responses of the mothers with DS children were an obstacle in their future aspirations and in raising awareness in the community. TG expressed their opinion that the families of children with DS were the most effective factors in influencing the views of people in the community, thus the attitude of the families played a significant role in the representation of children with DS on social media. From their personal point of view, TG pointed out that the failures and frustrations of some mothers led to them conveying these negative feelings and experiences on social media, leaving children with DS with a shadow hanging over them. It also

emerged from the teachers in the study that these negative attitudes were displayed by special education teachers on social media, sending a negative message to other teachers.

T1 felt disheartened when seeing negative interactions among special education teachers, especially in the discussion groups within forums where phrases such as, “No matter how much work we do with these children, they will not achieve anything”, were repeatedly mentioned. However, T1 said she did not allow these words to affect her; rather, they made her more motivated and driven to continue her work and be more supportive towards the parents who felt resigned or displayed negative attitudes towards their child.

Finally, T2 argued that she was struggling within her work environment because some of her colleagues were a negative influence. These colleagues encouraged the other teachers not to waste their time with children with DS and claimed that no amount of effort on their behalf would benefit the children because of their disability. She mentioned that she would receive comments such as “You are doing this to make yourself look good to the parents and school administration, not because you love or care about your students”.

Sub-theme 3: Issues around the Parents

This sub-theme emerged from interviews with TG only who argued that their biggest challenge was to make sure that the advice and information they provide to the parents through social media is actually followed at home. They were worried about whether or not the mothers were applying the advice and training given by specialists, teachers and others in the field. Their concern was due to the fact that some mothers asked the same questions repeatedly on various social media platforms and asked a number of specialists at the same time. Such behaviour led TG to doubt if the mothers had really understood and benefitted from the advice and instructions given on social media.

Sub-theme 4: Lack of Qualitative Information; Assessing the Quality of the Information

One of the problems that the participants faced was the lack of reliable quality information. There are three aspects to this problem: (1) the nature of the information available is incorrect; (2) the available information lacks authentic referencing; and (3) the qualitative information is not kept up-to-date. The paragraphs below consider each of these aspects in turn.

The participants found that on social media there was a lot of inaccurate information. For example, on Forums it was stated that children with DS die at the age of 10. This misinformation causes a false sense of fear amongst parents and families of children with DS. In addition, some information on social media such as “old folk’s tales” and “traditional remedies” can be wrongly recommended by mothers, adversely affecting the children.

Also, T1 said that she was shocked by some of the misinformation or experiences mentioned in forums by mothers and teachers. For example, participants on forums stated that children must be beaten into submission for any misbehaviour. Furthermore, M4 also pointed out that some people on social media can give an unrealistic expectation of children with DS. They disregarded the child's disability, were overly positive and said "the child is completely normal" and did not require any form of EIS.

The participants agreed that there was a lack of up-to-date quality information in the forums, making them less useful and less reliable. T1, T2, T4, M2, M4 and M5 stated that it was the role of the supervisor to reference the information correctly on Forums. The participants compared the international Forums to the Arab ones and came to the conclusion that the Arab sites were less valuable than the international ones. The foreign forums were regularly updated with new skills and new methods for training children with DS. This meant that mothers and teachers would need to research global sites and translate the information. T2 and T4 explained that the problem was not limited to forums only, but to social media outlets such as Twitter and Instagram, where there were many fake accounts. These accounts were held by people who pretended to be specialists and who posted unreliable information copied and pasted from elsewhere in order to garner more followers.

Sub-theme 5: Ethical Problems

All the participants mentioned two important ethical issues that were a cause for concern. They were worried that these would negatively affect the role of social media in helping families with children with DS. These issues are as follows: (1) some fathers exploiting their own children with DS for materialistic gain and social fame. (2) unethical competition between different groups on social media outlets. The participants emphasised that some fathers used their children to become famous on social media. They would regularly post pictures and videos of their children with DS. For example, fathers would attend events with their children to draw attention and garner sympathy from other people. The presence of the children at these events, late in the evening, would cause frequent absences from school, thus affecting their performance in school.

T4 and T5 supported this claim by mentioning that they would deal with difficult behaviour from the children when training with them during the lesson. For example, a child sometimes would refuse to perform the skill or step until they were being filmed. Some children have formed a connection between carrying out educational tasks and the necessity of photography. Additionally, the participants pointed out that some fathers would create an account and post pictures of their child. Once the account had gained enough followers, the father would use it as a platform to advertise irrelevant products or centres for his financial gain. The second issue related to the immoral competition between different groups on social media.

The participants revealed that some small groups worked separately to bring other groups down, using hackers to hack into the opposing group's emails and distribute information. This lack of teamwork can cause conflict within the groups and among them. M2 commented in the following terms, "What worries me most is the existence of these parties and the unethical competition within the work environment, isolating people to work alone, and I feel sorry about this".

Sub-theme 6: Time Consuming

Ineffective use of time on social media is one of the important challenges faced by the participants. The interviewees noted that heavy use of social media had a negative effect on their health and on their family life. Wasting time on social media was a factor in creating marital issues as mothers would be taken up by exchanges on the platforms and would be unable to meet the demands of their husband, children and household. M1 gave an example stating, "My husband is helpful and does his best to help me, and I feel sorry that when he wants to spend some time alone with me I am constantly on my phone which upsets him". M2 added that the use of social media had prevented her from fulfilling her duties as a mother of eight children, and even led to the weakening of her relationships with her extended family, who have criticised her and felt resentful towards her. Some unmarried teachers claimed that their role on social media led to a clear lack of communication and engaging relationship between them and their parents, as well as their friends and extended family.

The second issue resulting from the interviewees' extensive use of social media was related to their health. The frequent use of phones and other electronic devices has led to visual problems and lack of sleep. The participants explained that they felt the night was a better time to participate in social media as it was quieter and they had no duties to attend to. However, they thought that this affected their mood the next morning and caused some neck and spine problems.

Sub-theme 7: Technical Problems

All participants noted that their access to social media platforms was affected by some technical problems. One of the problems was the incorrect translation of websites into Arabic, which compelled them to rely on translators or attempt to learn English themselves. This was especially the case for the teachers:

The translation issue is the most difficult for me, although video clips are easy for me to understand. When researching information, I have to rely on my brother because he is an interpreter, but he is not free the majority of the time, so it puts pressure on me to learn English. (T4)

The other problem connected to the nature of some social media platforms, such as Twitter, relates to the word limit of 140 characters. Although Twitter is useful for communicating with specialists, the word limit restricts the contents of the messages. As for Instagram, the issue centres around the difficulty in downloading images and videos from posts; sometimes additional apps have to be downloaded. Furthermore, the internet connection sometimes made the use of social media frustrating. T1 suggested a solution for this problem: "Try to avoid using social media during peak-time".

Sub-theme 8: The Lack of Government Support

The participants criticised the paucity of government support provided to families and teachers of children with DS. The participants felt that the government was helpless and did not provide any financial or moral support. Financial support is necessary in order to provide services within the community to aid families with children who have DS. Currently, the services or activities that are available are funded by volunteers and people who organise the events. Moreover, the interviewees believed that the government should provide support specifically to some social media sites and official bodies should be created to supervise the contents of social media related to DS. Presently, the Ministry of Media does not supervise the social media sites, it does not check for fake accounts and it does not ensure that wrong information is being spread. M2 stated: "We want the government to put us in a position to control abuses by hackers and intruders who send negative messages to people through social media".

M1 explained that many people have used social media to voice their concern about the lack of disability centres and the need for early intervention services in KSA, especially in the southern regions. According to her, the response of the Ministry of Social Affairs to these requests has been shocking: according to the state officials, it is the responsibility of the business companies and not the government to establish these centres.

Theme 5: Factors Contributing to Successful use of Social Media

The final theme relates to the factors contributing to the successful use of social media. Two sub-themes emerged from the responses, as shown in Figure 6.5.

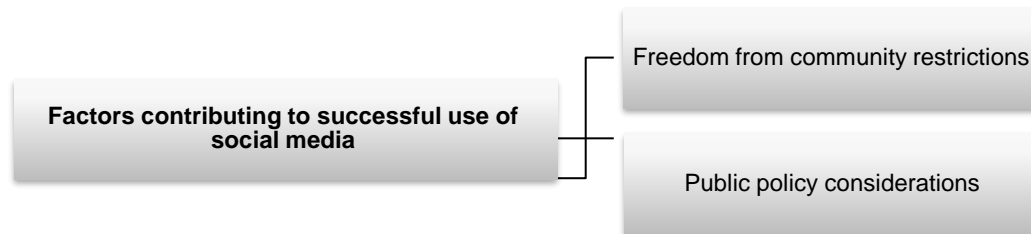


Figure 6.5 Theme 5 and its sub-themes

Sub-theme 1: Freedom from Community Restrictions

The success of social media in the service of the participants and in providing important information in EIS is due to the freedom that it offers: it frees the families of children with DS. Everyone can post images and videos on how to provide EIS for children with DS, thus contributing to the development of social media as a source of reference and support for new mothers. This is done at minimal financial costs. Social media also offers a realistic picture of the work involved in educating children with DS. It compensates partly for the lack of EI centres in KSA. T1 stressed that “society and the people must come out of shame and activate communication and increase the images and experiences of EI”. T4 also said that “social media will serve us in the future because everyone is there; I hope in the future that the social media sites will increase, whether from people with DS or their families”.

Sub-theme 2: Public Policy Considerations

All participants stressed the role of the government and its ministries, which are specialised in providing support for the development of social media and providing a useful database in the field of EI. The interviewees argued that the government should provide support for the children with DS and other disabilities, and the Ministry of Media and Ministry of Education should take responsibility for ensuring the quality and credibility of the information which has to be closely monitored. T5 said:

We need to get urgent support from the Ministry of Media, through increased monitoring of social media accounts and the development of penalties for those who exploited the families of children with DS.

M2, M1, M4, T2 and T3 believed that there should be co-ordination between the Ministries of Media and Education to provide supervisory bodies on special education sites. The supervisory bodies would be assigned the task of monitoring the validity of the information provided on the sites and also identify the site owner in the interest of transparency and accountability. They must focus on non-specialised fictional accounts and ensure quality information that will

contribute to the successful role of social media in delivering knowledge and information to the parents of children with DS and specialists.

The participants also highlighted the importance of financial support from the government. It was deemed essential for the government to support awareness programmes planned through social media and implemented in public places. M1 explained that she worked as a supervisor on a number of volunteer social media sites devoted to EIS for children with DS. If this site and its voluntary group were funded by the government, the group could perform their awareness-raising throughout society and develop EIS through social media. M1 stressed the importance of government support for the success and development of EI, currently being provided through social media.

6.3 Chapter Summary

This sixth chapter provided a thematic analysis of the individual responses. Many themes emerged during the analysis but I focused on the five main ones that were directly related to the study aim and the research questions. Through these themes, it will be possible to create a theoretical framework, as will be discussed in the next chapter. Chapter 7 will also link the themes presented here with the findings from previous studies and the research context reviewed in chapters 2 and 3. The discussion will enhance our understanding of the role of social media in supporting parents and teachers of children with **DS** in the Saudi context. In addition, the next chapter will discuss the most important challenges faced during this research. The chapter will end with suggestions for future research, recommendations to the Saudi government and my reflections on the research journey.

Chapter Seven: Discussion

7.1 Introduction

This chapter provides a discussion of the main findings of this study, which is the first of its kind to discuss social media and early intervention in the Saudi context. It examines in depth the role of social media in supporting parents and teachers, while using the various online platforms to provide early intervention services for children with DS. The qualitative approach adopted in this study has rarely been used in the field of special education in KSA. This approach is very useful in providing in-depth knowledge about the requirements of people with special needs and the teachers who work with them. In this study, the qualitative approach has indeed offered detailed insights into the needs of some of the children with DS in the Saudi context. Data was gathered through interviews with 6 mothers and 6 teachers. The two participants who took part in the pilot study (a mother and a teacher) were also included in the final study. The aim of this study is to explore the role of social media in supporting parents' and teachers' use of early intervention services for children with DS in KSA. This chapter provides answers to the general questions and fulfills the purpose of the study based on the participants' opinions, their experiences and the results of the qualitative analysis. Four main topics have been identified as: (1) The importance of social media and the preferences in the context of the study; (2) The reality of participants' experiences of social media; (3) Future prospects for the evolution of social media; (4) The role of social media in the context of the current study.

The discussion underlines the crucial role of social media in serving the field of early intervention and providing the necessary information for parents and teachers. This chapter also highlights the most important challenges faced by parents and teachers in the context of this study; these include various factors: societal, family, health, technical, and political. This chapter also assesses how the role of social media can be further enhanced in the field of early intervention. The limitations of the study are also explored. Finally, the discussion of the findings opens up avenues for further research. Recommendations are made. It is clear that there is considerable scope for developing the research further in the interest of scientific knowledge and in the interest of children with disabilities, their families and the employees in the field of special education. Finally, the chapter and this thesis end with my personal reflections on this enriching learning journey.

7.2 The Importance of Social Media and the Preferences in the Context of the Study

The general results of this study showed the great role played by social media in the service of mothers and teachers of children with DS. The interviewees emphasised the importance of these platforms in creating transparent and realistic communication environments for events or for changing attitudes, contrary to some traditional media in KSA, such as television programmes. Indeed, interviewees compared traditional media and social media. They believed that the latter provided factual and reliable information, as and when required. This result is consistent with Ismail (2013), who explained that social media was superior to traditional media in terms of its transparency in presenting different positions, opinions and rights of people with disabilities and in reaching the largest number of people.

Other studies (such as Kaplan, 2012; Miller & Shepherd, 2004) also underlined the ease with which social media can be used: it does not need any preparation or coordination in advance, unlike traditional media, which is centrally controlled and has high costs. In addition, the results of this study highlighted the role of social media in providing information for children with DS efficiently and without considerable material cost or effort. Social media can be accessed from various areas in KSA, both urban and remote rural areas. It provides essential information on EIS such as how to train infants on nutrition, training in motor skills, language, self-care, behavioural control, physiotherapy and functional treatment. Through social media, parents from more deprived backgrounds can gain access freely and more easily to information and services in the early stages of life. Detailed information is provided about a number of issues that require urgent attention, such as the need for urgent intervention in the case of heart surgery; how to breastfeed and general feeding difficulties; and how to strengthen the soft muscles that require the intervention of natural physiotherapy from a very early age. These findings confirm that social media now provides a quick solution and easy alternative to help people and teachers in the field of early intervention in KSA. The participants argued that the current state of early intervention is not satisfactory and does not meet the needs and demands of children with DS. There is also a shortage of specialised centres of EI. This is in line with the findings of many researchers in KSA (Al-Aoufi, 2011; Almalki, 2013; Merza, 2002, 2013; Omar, 2014; AL-Zaalah et al., 2015), who explained that the level of EIS and the number of specialised centres is lower than the actual demand for such services and centres. There is therefore a crucial need to provide specialised services for the increasing numbers of children with DS and also those with other types of disabilities who require urgent intervention.

It is also clear from this result that social media provides MG and TG with information without much effort on their part and in an affordable manner, thus encouraging the families of children with DS to play a primary role in helping their children in the early intervention phase. This study has shown that parents are important providers of EIS for their children. Indeed, many studies have highlighted the role of the family in the provision and success of EIS (Bailey et al., 2011; Baker, Marquis & Feinfeld, 2007; Einfeld et al., 2013; Kingsley & Mailloux, 2013; Llewellyn et al., 2003; Mahoney, Robinson, & Fewell, 2001; McWilliam, 2010; Merza, 2002; Rondal & Buckley, 2003; Shin et al., 2009). Information on how to provide EIS available on social media will enable families to work more successfully with their children. Social media also partly remedies the lack of home visit programmes. It is difficult to access such programmes from remote locations in KSA.

In this context, social media provides several useful features, e.g., participation between mothers, teachers and specialists, both inside and outside KSA, the exchange of information and ideas, rapid communication and openness without any delay in obtaining information, and psychological and information support. They reflected positively on participants in this study. Also, this result is consistent with Zheng, Li and Zheng (2010) who explain the characteristics of social media in some countries in terms of its openness and innovation. Such features are particularly useful to people with DS and those related to or working with them.

In Saudi society, it is the responsibility of the mother, and not the father, to raise the children. However, the findings from this study suggest that the roles are changing and fathers are getting involved in childcare. Participants in the study explained that many fathers share and help their wives to seek information about EIS, and some of them work as volunteers through social media and in fact, are famous on these platforms. These findings show us that social media has contributed to changing the structure of traditional family relations in Saudi society. The involvement of fathers on social media and the support they provide to their wives can help reduce the stress that mothers have in raising their children. No doubt fathers who use social media will have a greater awareness of the problems of children with special needs, their primary needs as well as the importance of prompt treatment and EIS. Moreover, by attending training sessions in private centres or by helping their wives support their children, fathers who are actively involved in caring for their children can encourage them to succeed in acquiring motor skills and language, and address functional or behavioural issues. Such a move can only be beneficial to the family in general, and the child in particular.

Moreover, the findings show that several types of social media were used by the interviewees, including Twitter, Instagram, WhatsApp, Snapchat, YouTube, Forums, Facebook, and Pinterest. Table 7.1 shows the participants' preferences for the various social media platforms: Twitter and Instagram were the favourite ones.

Table 7.1 Use of, and preference for, different social media platforms

	M1	M2	M3	M4	M5	MPS	T1	T2	T3	T4	T5	TPS
Twitter	4	1	3	----	1	1	3	1	2	1	1	1
Instagram	2	2	2	1	2	3	2	2	1	2	2	2
WhatsApp	1	3	1	5	4	----	4	----	----	----	----	----
Snapchat	----	4	4	2	3	----	5	5	4	4	4	3
YouTube	5	----	----	4	----	2	1	3	3	3	3	---
Forums	3	5	6	3	5	----	6	---	5	5	5	4
Facebook	----	----	5	----	---	----	----	----	----	----	----	----
Pinterest	----	----	----	----	----	----	----	4	----	----	----	----

1= being the most preferred to 6 = being the least preferred.

Twitter was the most trusted platform because of its relevance to the field of special education and its links with EIS professionals such as doctors, physiotherapists, occupational therapists, language therapists, psychologists and teachers with experience. The presence of specialists on Twitter has made it a rich source of up-to-date information on EIS, relevant information that can easily be applied at home. It is seen as a link for sharing information between parents and teachers as well as specialists. This suggests that participants trust the information gained from Twitter because it is directly from the specialist or derives from the experiences of mothers and other teachers. The information is not limited to theories. Also, the use of "Hashtag" allows the public to put their demands to the government and to obtain fast and efficient responses. For these reasons, Twitter was viewed very favourably by the participants, who highlighted its usefulness and reliability as a source of information. This is evident from the responses of participants in this study when they stressed the weak role of some government ministries such as the Ministry of Health and the Ministry of Education and Social Affairs in carrying out their role to help families, especially in EIS of their children.

Instagram was also found to be very useful, especially in providing step-by-step information on how to train DS children in the acquisition skills needed in their early life. Through the uploaded video clips, parents and teachers learnt about the right intervention methods and were able to share that information and experience, both inside and outside KSA. Instagram provides participants with the opportunity to exchange information and experiences on the subject of EI, which is currently considered one of the most important issues in the field of Special Education in KSA. Other studies (such as Hu et al., 2014) have also highlighted the usefulness of Instagram in providing deep insights into social and environmental issues through the exchange of relevant pictures and clips. The current participants have been able to use Instagram to their own advantage and have thus addressed the issue of lack of information on EI in the Saudi context.

Furthermore, interviewees used Snapchat as a more personal platform to share information with their relatives or friends. They used it to exchange pictures on the training of children with DS, or the children's acquisition of certain skills. MG believed that through this platform, it was possible to educate their relatives about the situation of their children and to change negative attitudes.

TG used Snapchat to educate their families about their work and also share information about the dates of lectures and scientific seminars in particular. Previous studies have also shown that Snapchat is favoured for the privacy that it offers to its users (e.g., Katz & Crocker, 2015; Utz et al., 2015). WhatsApp was also used by the participants, mostly MG. TG did not use WhatsApp as often: they felt under pressure to attend to the large number of requests from mothers which were sometimes sent late at night. WhatsApp is considered by both educated and uneducated mothers to be the easiest social media to use.

In addition, TG used more formal media such as Twitter, Instagram, Forums and this has been deduced from the results of this study. TG showed a more pronounced preference for using YouTube than MG. They used YouTube as a personal learning tool, for learning how to provide EIS and skills that will help them train children with DS, based on their language skills, mobility, behaviour and daily life skills. This finding is consistent with the results of other studies (Al-Mukhaini et al., 2014; Ubari, 2015) that showed that YouTube is a tool for knowledge transfer and acquisition. The findings in this study are in concordance with those of previous studies. Indeed, YouTube is seen as a useful tool for creativity and innovation. Through the clips, teachers learn to set up training goals for children with DS and also produce appropriate and creative educational aids for them. The participants were able to benefit from the creative ideas in YouTube and develop similar ideas. Their responses confirm the significant role played by YouTube in stimulating the creativity and innovation of mothers and teachers.

Furthermore, the study shows that although forums were popular some time ago, they are no longer widely used by the interviewees. Indeed, compared to other social media, forums do not provide up-to-date reliable information. Therefore, this finding is a clear indication of the importance of updating the information provided on EI of children with DS in order to restore the confidence of users in these media platforms that had previously played an important role in raising awareness about disabilities within Saudi society. Personal follow-up and experience in developing specialised forums in special education shows that individuals' use of other social media (such as Twitter, Instagram and Snapchat) has led to a lack of motivation from the forum webmasters to update their information. It can be said that forums have lost out to the most popular media platforms such as Twitter, which consists of the largest number of specialists and parents of children with DS. This personal observation is also confirmed by some of the participants in this study through their comments on the development of forums.

The participants also mentioned the importance and popularity of Facebook. However, some interviewees were apprehensive about its use (with the exception of M3, who benefitted from communication with speech specialists and learned how to train her child and gained useful skills in EI). Most participants compared Facebook to Twitter which, according to them, is easier to use. They added that Facebook is more widely used by their counterparts in Egypt, Jordan and Morocco. The interviewees' comments reflect some of the views held by the wider Saudi population: the use of Facebook is sometimes considered dangerous as it may lead to a lack of privacy. The participants' safety concerns about using Facebook correspond to the points made by Milianny (2014) who points that Facebook lacks privacy and safety. Participants felt that Twitter was safer and relatively newer. Further studies are needed to assess more clearly why Saudi society is reluctant to use Facebook and prefers Twitter. To my knowledge, there are no studies on this subject.

According to The Statistics Portal (2018), KSA ranked first in the Arab world in its use of Twitter, but it did not have any ranking for its use of Facebook. This is a clear indication of the tendency of people in Saudi Arabia to use Twitter more than Facebook. This tendency is borne out in the current study where participants showed a clear preference for using Twitter compared to Facebook and other platforms. It should be noted that there are also some statistics that show that there are 17.29 million users of Twitter and more than 21.95 million users of Facebook in KSA (GMI, 2018). These statistics do not specify the identity of users in terms of nationality, i.e., Saudi or non-Saudi. Currently, there are 12.2 million non-Saudis who work in the country, and they come from different backgrounds and cultures which might favour one type of social media. Therefore, there are differing statistics about the use of Twitter and Facebook in KSA. Although we know that Twitter is very popular in Saudi Arabia, we do not understand the reason for this situation. This confirms the urgent need for conducting studies focusing on this subject, especially in the field of special education.

The result of this study confirmed that Twitter plays a crucial and influential role in Saudi society because of the presence of a large number of officials from various ministries and the existence of official accounts for both the King and the Crown Prince. Families of children with DS thus feel more confident about delivering their demands, and know that they will get a faster response compared to traditional government transactions where there are delays, especially in the case of EIS. Given the complexity of the situation, there is a need to conduct further studies on the use of Twitter or Facebook in the service of those interested in the field of special education. To my knowledge, there are no such studies; for instance, it would be useful to understand why the Saudi community prefers Twitter to Facebook.

Finally, Pinterest was also mentioned in this study but by only one participant: T2. She downloaded many images related to the process of teaching young children with DS in the early intervention classes and built her own “electronic library”, thus saving her time and effort in looking for information elsewhere. Although this finding applies to only one participant in this study, it nevertheless shows the potential role of Pinterest in facilitating the educational tasks of special education teachers and improving the quality of the training they offer to children with DS especially in EI. Through the Pinterest images and video clips, teachers learn how to train children linguistically and how to stimulate their senses. This finding is consistent with Hansen et al. (2012), who indicated that the Pinterest was effective for educational purposes.

7.3 The Reality of Participants' Experiences of Social Media

Social media offers several benefits to parents of disabled children, as suggested by the participants in this study. Knowledge management is one of those benefits: the participants have been able to acquire new information based on early intervention in linguistic, motor, social, behavioural, cognitive and everyday life skills. This learning takes place through social media platforms inside and outside KSA. Participants feel empowered to apply the knowledge acquired through the various platforms. They also share the information learnt with other mothers in KSA, especially those in areas and villages where there is no EIS and limited access to special education services, as illustrated in Figure 7.1. This confirms to us the great role played by social media as a tool to learn and acquire the information that parents and teachers need, especially about the services of early intervention and how to identify ways to provide these services for children with DS as soon as possible, depending on the experiences of others from parents and specialists outside and inside KSA.

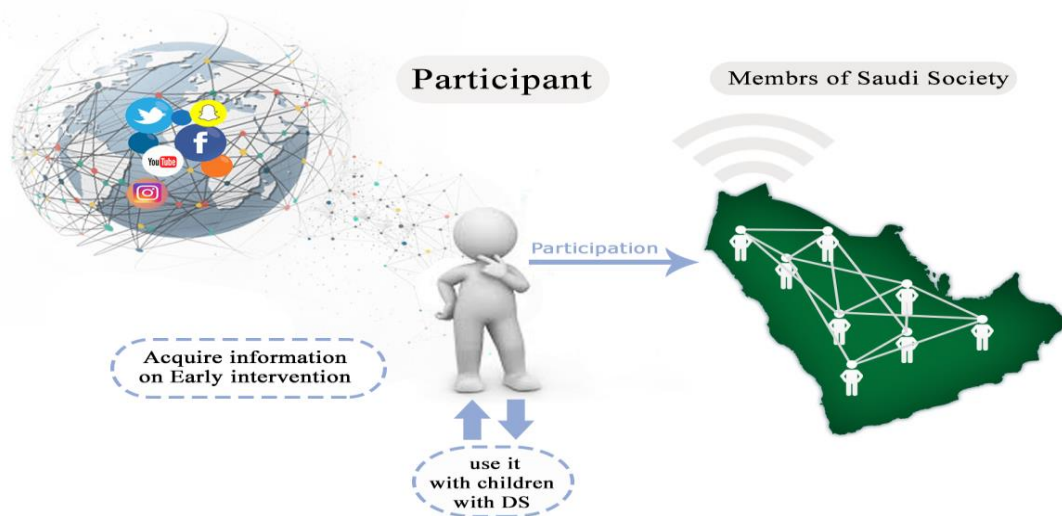


Figure 7.1 Knowledge acquisition and sharing

The findings show how social media helps to fill the gap in the provision of early intervention services in some areas of KSA. This is undoubtedly a positive aspect of these forms of communication as it allows mothers and teachers to acquire information and skills related to the training of children with DS in the early stages of their life — in the absence of proper specialist services. It is important for parents to be able to support their children from the early stages of life and to help them to overcome obstacles related to mobility, language, and social, behavioural and cognitive skills. In their study of parents of autistic children, AL-Zaalah et al. (2015) also found that mass media was an important source of information for the parents. Through the media, the parents learned how to support their autistic children. Although they pointed out that some information provided through these means was inaccurate, they argued that a lot of the information was useful to them. Although the study of AL-Zaalah et al. (2015) in KSA was not aimed at revealing directly the role of media but generally identifying the needs of families of autistic children, the results showed people's use of traditional media as a source of information. The current study confirms that social media is seen as a reliable source of information on EIS. This finding is consistent with other studies, e.g., AIMagushi (2007) and Baruah (2012) who have shown that both traditional media and social media are important sources of information. In fact, the acquisition of information is one of the main objectives for using these media.

Interviewees also highlighted the importance of social media in facilitating communication. Not only were they able to communicate within KSA, but they went beyond KSA to a number of Gulf, Arab, European, American and African countries. This shows the role of social media in opening a global communication channel between the participants in this study and others who have similar problems and needs outside the country. MG explained that they communicated with other mothers with DS children, shared their knowledge and real experiences, provided and received solutions to the common problems that appear with DS in the early stages of life. Social media therefore acts as a unifying factor among parents who face similar challenges. MG emphasised that they felt supported and understood by their counterparts inside and beyond KSA. It is clear that these media platforms give MG the opportunity to support, debate and share real experiences with transparency and credibility. These findings are confirmed by other studies such as Wernz (2014) and MacKinlay (2002), which found that social media played a significant role in enhancing communication and knowledge exchange between parents.

In the same context, external communication has contributed to the development of the scientific knowledge of TG and the expansion of their expertise in EIS. TG said they had to compensate for the lack of language specialists, physiotherapists and also functional treatment centres that provided EIS. Through social media, TG learn about new and correct ways to train children with DS. This result shows that the external communication provided by social media contributes to making up for the shortcomings of EIS and provides the opportunity for TG to

research and develop themselves and to communicate with specialists abroad in order to benefit from their scientific experience, as well as previous experiences of other countries which are more advanced in the field of EI. The findings show that in Saudi context, teachers have to play the role of specialists in the field of early intervention, which is made possible through the availability of information and the opportunity for communication with specialists outside KSA.

Moreover, the present study showed the benefit of social media in promoting cooperation, consultation and teamwork. These media platforms provided a single virtual meeting place for a large number of specialists, parents, teachers and other volunteers, as well as relatives and siblings of children with DS. This cooperative team consists of individuals from all regions and villages of KSA and also other countries. Such cooperation contributes to the exchange of information on training and also on relevant lectures. The translation of English sites is of great benefit to many mothers and other teachers. Free consultations can be provided in a fast and cost-effective manner. Traditionally, the mothers would have had to take appointments with advisors in advance and pay for the consultations. Social media, therefore, provides a realistic virtual environment that reduces the distance, effort, cost and time required to implement changes and to overcome obstacles regarding the education and training of DS children. The 24-hour availability of advisors on these platforms is important in supporting and helping mothers and teachers to achieve faster results and solve problems before they become worse. The collective work is also a valuable source of psychological support for parents and teachers.

Another important benefit of social media relates to creativity and innovation. Through these media platforms, it has become easier for participants to identify creative ideas in preparing training tools for children with DS. TG mentioned that they felt empowered to innovate and invent new training methods involving the use of the commonly available household materials. MG and TG stated that they could train the children by themselves in language skills, mobility or functional skills. Therefore, social media has become an electronic source of creativity and innovation in the creation of the educational tools that children with DS will need in order to develop sensory sensations, attract attention and cognitive awareness, and develop skills in the early stages of life.

Furthermore, the findings highlight the role of social media in raising awareness about the importance of EI in Saudi society. This is evidenced by the fact that participants with the volunteer teams used social media platforms to raise awareness among many mothers of children with DS of how to overcome the first shock of receiving the news of the birth of a child with DS. This study provides evidence that some doctors do not deliver the news of the birth in a considerate manner and provide inaccurate information about the condition, thus upsetting the MG. Social media helps to dissipate some of the wrong beliefs and also emphasises the need for intervention from very early on. Through these platforms, MG can learn about the rights of their children and the facilities guaranteed by the government for all children with disabilities in KSA. This finding underscores the significant role played by social media as an

effective means of communication that is able to correct misinformation and inappropriate attitudes amongst families of children with DS, namely that no service can be provided except through government centres. Awareness is also raised among the wider population.

Another advantage of social media relates to its use in communicating with the government through "Hashtag". Participants stressed that Twitter has contributed significantly to conveying to the government the needs and demands of DS children's families and teachers. The officials provide immediate responses to these claims and give users a sense of satisfaction, in comparison with the traditional methods used by the participants in government correspondence manuals, which take a lot of time and perhaps get lost as well. The current findings are supported by other studies such as Graham et al. (2015), Jaeger and Bertot (2010) and Kingsley (2010), which explain how social media encourages an open dialogue between people and governments. The governing bodies can receive feedback from members of society and respond to queries quickly.

Although social media offers several benefits, there are also some challenges and limitations associated with its use. These can be grouped into four main categories: religious and cultural factors, family and health factors, political factors and technical factors, as illustrated in Figure 7.2.

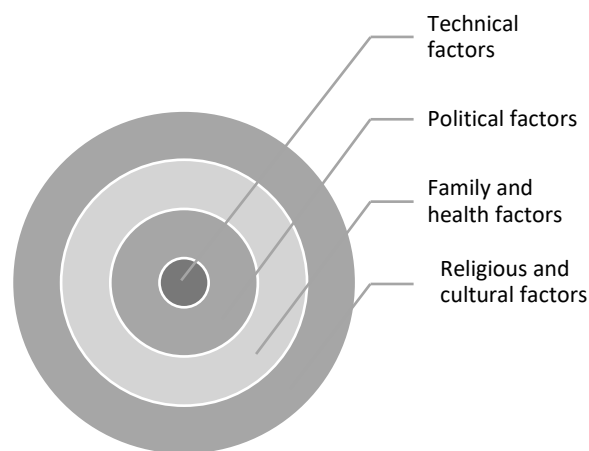


Figure 7.2 Challenges and difficulties associated with the use of social media

Religious and Cultural Factors. The first of these challenges relates to the religious and cultural factors in Saudi society. The views of the participants in this study differed on this subject. MG displayed differing opinions about adding pictures and video clips of the stepwise training of their children with DS to highlight some of the skills of EI in social media. MG argued that the presence of mothers on these media platforms is contrary to the principles of religion. Others attributed such views not to religion, but to customs and traditions, that is, the refusal of the Saudi man to have his wife, daughter or sister shown on social media, even if it is for education and training. In fact, preventing women from participating on social media platforms is not endorsed by religion. Islam is a flexible religion that takes into account the needs of

individuals and communities and in the Quran, there is no text that prohibits women from participating in community life. On the contrary, the religion actively supports the presence and participation of women in societal matters, as was the case at the time of the *Prophet Muhammad*. Religion therefore cannot be used as an excuse to prevent women from being involved on social media platforms. The customs and traditions of the country are responsible for some of the views expressed against the participation of women in society. This point is confirmed by previous studies of ancient and modern life in Saudi society (e.g., ALSaif, 2003; Alturige, 2008; Diab, 1980) which showed that the country is governed by ancient customs and traditions contradicting the Islamic religion. In the same context, TG have provided more explicit information through their experience of dealing with a large number of mothers in the centre of early intervention. The TG's views contradict those of MG. According to TG, there is no problem to appear through social media or add clips and images but the issue lies with some mothers. TG mentioned two reasons for this problem. First, some mothers are afraid and worried about the evil eye, especially when they show images of their children with DS via social media when they successfully master some skills.

Therefore, other mothers who are not active in working with their children ask many questions, leading the active mothers to block pictures of their children's training or stop displaying on social media. The active mothers fear the 'evil eye' which makes some people feel vulnerable, although the Islamic religion has shown ways to protect oneself from it. Yi Lin et al. (2016) stress that there are feelings of frustration and jealousy shown to some users of social media, especially when they follow the achievements of others and their successes. The authors' observation is consistent with this result. T1 explained that some of the mothers are very afraid of displaying pictures of their child. She explained her experience with one of the mothers who verbally threatened her when she presented her child's clips during class activities, forcing T1 to use photoshop to hide the identity of the child. Second, some mothers are stigmatised and unwilling to show their children through social media for fear of the community's negative views or some relatives knowing that they have children with DS. This is especially the case for rich and famous families in KSA.

Therefore, the MG's failure to show pictures and clips of their child on social media, especially during the training for some of the daily life skills, is due to the constraints of religion and social culture. In contrast, TG believe that this failure is due to the Saudi mothers' fear of envy and evil eye or their fear of stigma in society. These reasons are also based on two factors: religion and culture. Fear of the evil eye and envy has a basis in religion. Indeed, the evil eye has been recognised by Islam which also provides ways for people to protect themselves from it. However, Islam has stressed the importance of not giving undue attention to the evil eye and envy as it may affect the psyche of the person in his daily life. In terms of cultural reason, some Saudi men do not like showing their wife or female relative through social media and some

mothers fear the stigma and the negative views of society. These are all factors imposed by the culture, customs and traditions that are contrary to religion.

This finding shows that the negative attitude to women appearing in social media is not related to the religion or the government, but to the customs and traditions of the country. Indeed, many Saudi men believe that their wives, daughters and sisters should not reveal their names and faces on the various social media platforms. Such views are contrary to the principles of Islam which endorses the freedom of the person. In fact, in the era of the Prophet Muhammad, women took an active role in society - whether at work, in counselling or daily activities. Her gender and her Hijab were not seen as barriers to her participation in the community. Moreover, there is no provision in the Quran or Sunnah forbidding the presence and appearance of a woman in the community and her social participation. On the contrary, all reliable evidence confirms that a woman is free and her rights have to be respected. In my opinion, it is important to educate Saudi society on the rights of women so that all women can enjoy their rights and be free to use social media and display pictures and clips of their children. Mothers of disabled children would be able to enrich the social media sites with information and real experiences, which would benefit other children with disabilities and their families.

In connection with sociocultural factors, negative attitudes and lack of awareness emerged as one of the challenges faced by participants in their use of social media, as illustrated by Figure 7.3. MG showed that the negative responses exhibited by other mothers on social media were discouraging and possibly a reflection of the latter's less effective work with DS children and develop their skills. Some doctors also displayed negative attitudes by sending discouraging messages to mothers regarding their children's inability to learn in the future.

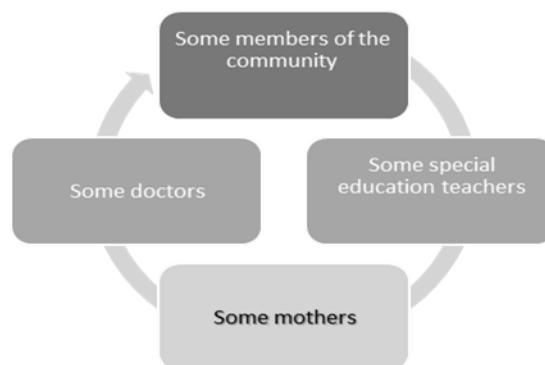


Figure 7.3 Groups displaying negative views and attitudes on social media

Some members of the wider society also used social media to express ironical and inhumane comments about the children, thus forcing some of the mothers to block those sites or engage in heated debates and discussions with these people. The negative views expressed on social media are an indicator of the level of community culture and show how ill-informed some professionals and individuals are. It is clear that doctors also hold such unfounded views. This observation is especially evident when they deliver the news of the birth of a disabled child.

The doctors do not inform MG of their baby's condition during pregnancy for fear of upsetting them and leading to abortions. They ignore the importance of transmitting news appropriately or even encouraging mothers to look for EIS for their children. The attitudes of doctors have discouraged some mothers from using early intervention services. This is a very important subject and is highly influenced by the motivation of mothers to provide early intervention services for their children. The negative psychological effects suffered by mothers at the news of the birth play a role in the failure of the children to receive the right care, early intervention and attention in their early years, and consequently lead to a deterioration of their condition. TG also expressed concerns about the negative attitudes displayed on social media platforms, some of which came from the mothers of disabled children and some special education teachers. According to TG, some special education teachers, especially those working with children DS, have also put forward negative views on social media. They argue that EIS or educating children with DS is a waste of time. Such behaviours can frustrate and upset mothers and other colleagues and also portray a negative image to members of the community who may be interested in learning about children with DS. Such attitudes do not take account of the recent progress in the field of special education in KSA where all children with disabilities, including DS, have a right to education and EI. These attitudes can be explained in terms of the low level of awareness in general and also the lack of expertise of the individuals working with children with DS.

An unexpected finding from this study relates to mothers' application of the advice given by TG. Indeed, TG were concerned that some mothers were not applying the advice they received through social media. TG mentioned that they felt discouraged by some mothers' lack of initiative: they did not put into practice what they had learned on social media. However, according to other findings that emerged during the study, MG stressed the fact that they depended on the practical experience of other mothers and relied on the direct consultations with advisers. It is possible that some mothers do not fully trust the special education teachers, but prefer information from counselors or mothers who have experience. This behaviour may also be the norm for all users of social media. People search for the information they need from multiple sources and are only satisfied when they find a large number of people feeding them into a specific idea, suggestion or solution. To better understand this phenomenon, further studies that focus on the mothers' reluctance to apply some of the advice given by teachers via social media have to be conducted. Furthermore, participants mentioned that some of the information on social media was not properly referenced and cannot be fully trusted. They focused on the forums as a source of incorrect information compared to other platforms. Participants firmly believed that these forums are not regularly updated by their moderators. Thus, they contain incorrect and misleading information, for example, the materials about the difficulty of educating the children with DS, their death at an early age, the view that they cannot live as normally as their peers, the belief that they are aggressive. Without doubt, it is the responsibility of the people in charge of these forums to update and check the information.

For scientific purposes and honesty principles, this information should be reviewed and updated in order not to mislead new parents and reduce their motivation to help their children in their first years of life. Besides, some of the accounts on the platforms are fake and their sole objective is to exploit parents financially. It is not ethical to use the information sites for personal financial gains without explicit statements to that effect. Some of the interviewees argued that the government in KSA should take actions against dishonest people. The participants' views can be compared to the findings of Baruah (2012) who highlighted how immoral promotion and the advertising of misleading products or services on social media are unethical issues adversely affecting the general public.

The exploitation of children with disabilities by some fathers is another problem posed by the use of social media. Some dishonest fathers use their children's disabilities for material gains and social fame. They accept advertising some products or private schools that are considered inefficient or of low standard. These findings are surprising as fathers are not expected to use their children's disabilities for their own selfish gains. Realistically, there is no objection to parents' use of social media to disseminate information, experiences or useful products for helping children with DS and other disabilities. But when it comes to advertising for profitability, it is considered socially unacceptable if the other users do not know that the parents have vested interests. In other words, other parents will believe that whatever is being said or advertised is purely for the children's welfare.

In addition, there is an immoral rivalry among some of the groups using social media: each group tries to win more members and does not really care about the welfare of children with disability. The participants mentioned that some accounts have been hacked by unknown individuals who try to steal information either through e-mail or Twitter and publish it on their own sites. According to the participants, there are dishonest competitors who do not really care about helping children with disabilities and their families, but are only interested in making money and gaining fame. This result corresponds to what is mentioned by Holmes (2011) who argued that one cannot be sure that those who use social media have good intentions. It is possible that some people use the platforms to bully others and achieve personal goals. According to the interviewees, the desire for media fame and excellence could be one of the most important personal motivations for some of the individuals and groups on social media. Many studies have indeed shown that some people use social media for cyberbullying: sending messages of intimidation, intimidation or ridicule through text messages, or stealing personal accounts such as e-mail or social media accounts and mobile phones, creating fake accounts and hacking into people's personal accounts (Alwagait et al., 2015; Schenk & Fremouw, 2012; Walker et al., 2011). This is consistent with the current findings in the Saudi context.

The points discussed above show that the behaviours and beliefs of people within Saudi society are directly related to the local culture and not to religion, except for the fear of envy which has a basis in Islam. Islam has emphasised the principle of freedom but some men fail to apply this principle when dealing with women and want to control them and prevent them from appearing on social media, even if it is for educational purposes. Also, when some people make fun of others online, they are going against the principle of dignity that Islam has affirmed. Islam preserves the dignity of the person and condemns any form of mockery and exploitation. Thus, the ridiculing of disabled children that happens on social media is neither socially nor religiously acceptable. In addition, through social media, some users, even educated ones, put forward negative opinions and attitudes and show a lack of respect for the feelings of children with DS and their families. For example, the doctors who express negative views that discourage mothers from working with their children. There is sometimes a lack of scientific honesty on the various platforms. Also, some users of social media do not feel socially accountable in providing the right information. Some even seek personal and material goals and engage in immoral competition with other so-called volunteer groups or even some parents of children with disabilities. Figure 7.4 summarises the most important religious and cultural factors involved in the use of social media in the context of the current study.

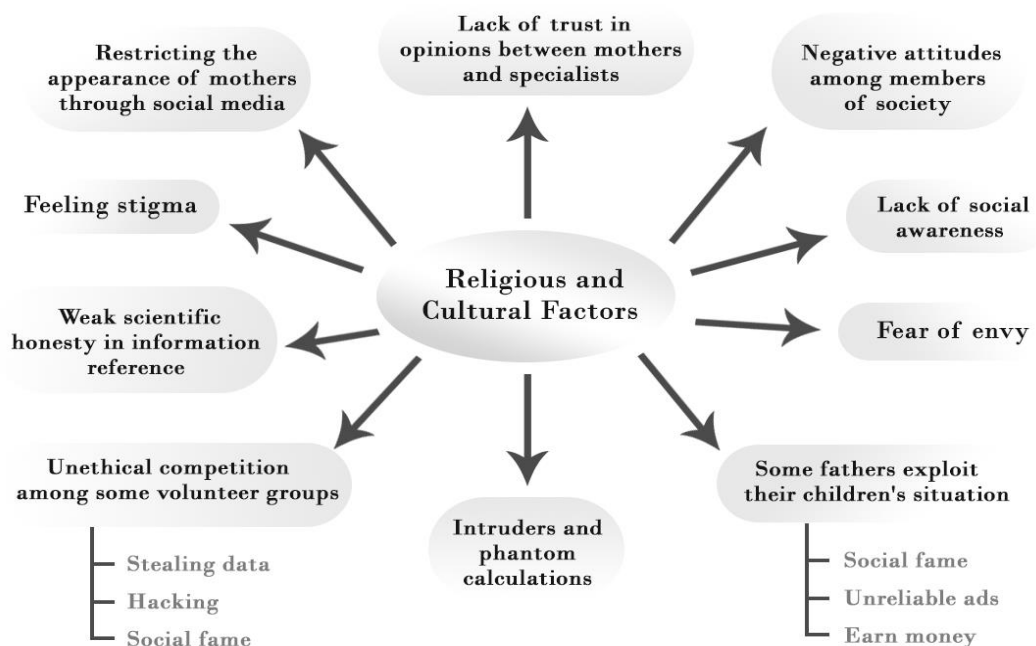


Figure 7.4 Religious and cultural factors in the context of the study

Family and Health Factors. A major challenge involved in using social media relates to the psychological, family and health costs. MG showed that their extensive use of social media caused them to relinquish their role as wives and also led to less attention being given to other children in the family. Indeed, they spent a significant amount of time communicating with other mothers via the various platforms. MG also encountered problems with their relatives, because of the lack of the usual weekly visits among Saudi families. TG agreed with MG about family problems between them and their husbands. The unmarried females in TG showed that relations between them and their parents were tense because of their preoccupation with social media, which reduced the time spent with parents, talking with them and sharing their daily activities. The participants also agreed that spending a lot of time on social media had an impact on their health. They encountered hormonal disorders, vision problems, neck and spine problems, and sleep disorders. This finding is no different from what many studies have shown: the excessive use of social media has a negative influence on a number of health, social, psychological and behavioural aspects (Baruah, 2012; Pantic, 2014; Scott, 2015; Wang, Lee & Hua, 2015; Woods & Scott, 2016).

Therefore, this study confirms that extensive time spent on social media adversely affects family relationships and health – although the participants argue that the time is usefully spent in searching for information that helps children with DS in their education or training in their early stages or educating other mothers, both inside and outside KSA, about the importance of providing EIS for children with DS. There is no doubt that the excessive use of, and preoccupation with, social media can negatively affect the family relations and potentially lead to the emergence of many health problems, sleep disorders and hormonal issues. Therefore, managing time and balancing between the use of these platforms and daily responsibilities is the best solution to overcome such problems and use this technology to serve children and their families.

Political Factors. The findings highlighted the absence of government support for social media. The topic included participants' need for material support during the establishment of vital activities in society, especially awareness of the importance of providing EIS for children with DS and holding many seminars and lectures. Participants explained that such projects and events require a considerable funds that largely came from volunteers. Interviewees proposed that an official department of the Ministry of Media should oversee these activities and follow up on the field and thus overcome this funding issue. The status of Saudi Arabia religiously, politically and economically as reviewed in the second chapter of this study is a clear indication that the government applies religious and moral principles in helping persons with disabilities. It also provides an annual budget monitoring to serve those who have received many of the privileges reviewed in this study. However, the reality and what the participants pointed out in this study confirm that there is a gap between this huge support from the Saudi government

and what is realistically employed, especially in the voluntary activities that are carried out by the cooperative groups on the social media sites.

Participants stressed that there is a clear weakness in the role of ministries in Saudi Arabia such as the Ministry of Media, Ministry of Social Affairs, Ministry of Education and Ministry of Health, which are responsible for implementing all decisions issued by the government. Therefore, the proper provision of early intervention services is not due to the government itself, but to the lack of coordination between the relevant ministries and also the absence of a mechanism to support families and professionals working as voluntary groups through social media. These groups need to be helped in their efforts to educate the community as to the importance of providing EIS for children with disabilities as soon as possible and without any delay that would affect the children and their families. The participants in this study also highlighted the weak role of the government in cracking down on intruders and exploiters. Therefore, the absence of government policies to track down hackers and bullies on social media is an important challenge that needs to be addressed.

It is clear from the participants' views that the government needs to put in place strict laws to deter people from exploiting parents and disabled children on social media. MG and TG feel unsupported by the government on this issue. The participants value the openness characterised by social media in KSA: they feel free to communicate with the whole world and discuss similar issues and search for realistic solutions based on multiple experiences. At the same time, they want government control and restraint of the transgressors of morality.

The Saudi government's "Vision 2030" and its support to Saudi citizens for development and production requires them to find solutions to the challenges facing its people and turn them into effective producers in the country. The participants in this study highlighted the weakness of the concerned ministries in working in the field of special education and supporting early intervention. Therefore, the government is responsible for reforming the ministries' roles and restructuring them in a manner that benefits its people, including families of children with disabilities and their employees. In addition, the government can build on its economic strength and provide support and facilities for the disabled, allocating an annual budget to carry out awareness activities in society about the importance of EI and its effective implementation. In addition, the Saudi government has strict laws against those who defy religion or the state through social media. For example, one of these laws entails a fine of 5 million Saudi riyals or 10 years imprisonment. Therefore, the participants in this study aspire to the effective role of the government in establishing strict rules and regulations for those who use social media to exploit or ridicule children with DS and other disabilities. Some of the Saudi laws and regulations which affirm the rights of the disabled and their families have been reviewed in Chapter Two, but there seems to be a lack of enforcement of the legislation with regards to bullying of disabled individuals on social media.

Technical Factors. In terms of technical problems, translation was perceived as a major issue. Indeed, participants point out that their access to global sites was sometimes limited because of language barriers. Translated versions of platforms or sites were not always accurate, thus affecting the quality of the information obtained. Some participants in this study were helped by their relatives who were fluent in English. However, the point remains that language and translation were seen as barriers to accessing external sites, communicating with non-Arabs, sharing information and benefitting from the experience of others. The solution to this technical problem might lie with the government, who should develop the general level of translation in the country. Another technical problem faced by the participants was the word limit, specifically on Twitter, where 140 characters were sometimes deemed to be insufficient. This result is no more than a general problem facing all users of social media. There is no solution with regards to the limited number of words on Twitter. But participants could turn to other forms of social media, such as forums and blogs, which are more flexible in terms of the number of words that can be used. The translation issue affects many Saudis, not just parents and teachers of disabled children. The suggestion of participants in this study is that the government, through the Ministry of Media, should set up sites supervised by translation specialists who would then provide accurate translations of sites related to early intervention for children with disabilities and also the field of special education in general.

7.4 Future Prospects for the Evolution of Social Media

All participants considered social media as an alternative life-saving solution to the lack of early intervention centres in KSA. The participants emphasised the importance of overcoming social constraints, customs and traditions in order to effectively use social media to show the ways of teaching and training mothers or teachers of children with DS. Such an open attitude will ensure that children acquire the most important skills they need, especially in their early stages. Social media is a useful tool for explaining the methods of physiotherapy and functional and language skills, which are an essential part of early intervention services. Through social media, the family can get more involved in disabled children's care and training and also reduce costs, saving effort and time. This finding confirms the importance of freedom from the societal constraints that hinder the participation of mothers on social media. Mothers can play a vital role on the various modern platforms by engaging with other parents and workers in the field of special education.

In addition, social media can develop further as a tool if the government invests in it. For instance, the government could provide financial support to the specialised social media groups to educate members of Saudi society. The government could also encourage relevant ministries such as the Ministry of Media and Ministry of Education to work together to develop the content of the social media sites to suit the expectations of the families of children with DS, especially with regard to EIS. These findings are in line with the new direction taken in Saudi

politics associated with its “Vision 2030”, where the government aspires to effectively use the people's abilities and skills in the development of the country in various human, educational, economic and recreational fields. Therefore, such proposals to use social media as an official means of communication under the aegis of the relevant ministries such as the Ministry of Media and Ministry of Education will help in reducing the material cost in the establishment of centres and schools for early intervention.

Social media has the potential of becoming the direct means of education, training, communication and consultation between families of disabled children and specialists and experts in cities, villages or various remote places in order for them to work together to help children with disabilities in their early years. The usefulness of social media as a cost-effective and efficient tool of communication and information and its ability to provide services despite long distances or weather conditions, especially in the context of early intervention, have been widely confirmed in the literature (Baggett et al., 2010; Kelso et al., 2009; Marcin et al., 2004; McConnochie et al., 2005; McCullough, 2001; Ondersma et al., 2008; Taylor et al., 2008; Young & Ireson, 2003). The findings in the current study confirm the importance of the internet and social media as an effective and low-cost communication tool to serve the field of special education in KSA. Therefore, Saudi Arabia can benefit greatly from technology generally, and social media specifically, in the context of the provision of early intervention services for the families of children with special needs and also for teachers in the field, helping them to acquire advanced international expertise and information on early intervention services.

7.5 The Role of Social Media in the Context of the Current Study

This study concludes with a general summary of the actual role of social media as a theoretical framework in supporting parents and teachers during their work with children with DS especially in early intervention in the context of Saudi society, as illustrated in Figure 7.5. The overall results of the study, through the views, experiences and feelings of MG and TG, showed the great role played by social media in supporting them in the provision of EIS for children with DS. The role of social media has been shown to be transparent, realistic and unrestricted, and this has undoubtedly allowed participants to have a place of realism and flexibility that allows them to obtain clear and unbiased information about early intervention services. This contributed greatly to the participants' feeling that they were communicating without any restrictions or barriers. Disabled children, especially those from low income families, benefit from the easy and free access to information and transparency offered by social media. The ability to obtain reliable information quickly is an asset of social media. Participants indicated that they had access to a large number of villages and cities in KSA and also gained information and experience from outside KSA.

Social media enables users to disseminate and exchange information. Social media has become an effective tool in obtaining and sharing knowledge. Families save money as well because they do not have to travel far to learn about, and get access to, early intervention services. Previously, costs and distance acted as barriers to the availability of EIS to many children with DS and other disabilities. Social media has therefore made many families and their disabled children's lives easier and given them access to EIS. Thus, social media contributes to encouraging the family to be the provider of early intervention services for their children at home because of its role in supporting children in their early stages. This is in line with the recent trends that emphasise the effective role of the family in developing children's linguistic, motor, social and daily life skills. Given that social media is available to every member of the family, the process of providing early intervention services is easier and faster compared to traditional methods such as going to the centre to teach the child how to keep the spoon and eat. Through social media, a mother can train her child at home.

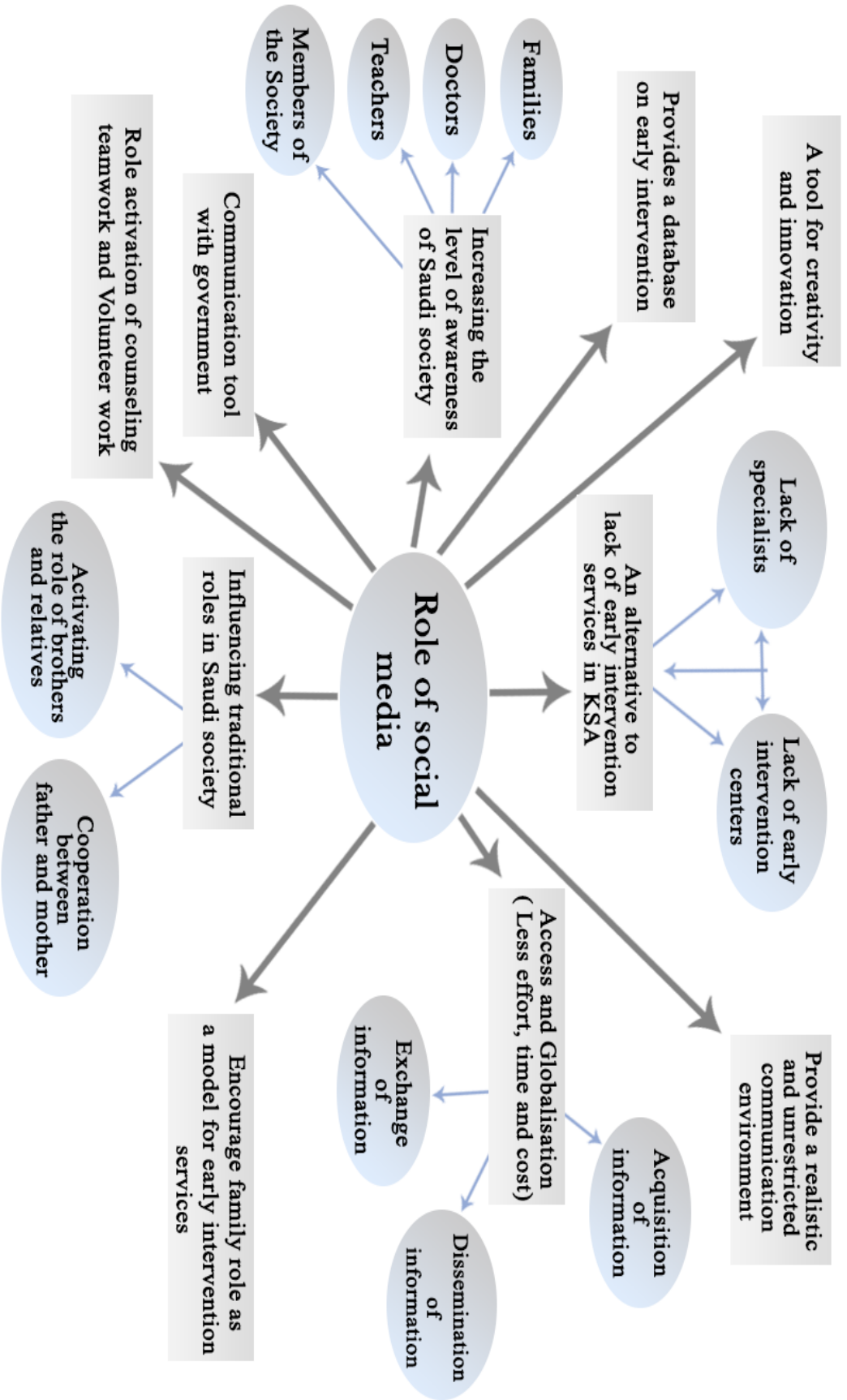


Figure 7.5 The role of social media in the context of the current study

In addition, this study showed a very interesting result on the subject of fathers' participation and support for mothers, especially in the area of child care and education. What is accepted in Saudi society is that in the early years, educating the children is the mother's responsibility, as explained earlier. But the findings of this study show that social media is making a unique contribution to the family dynamics in KSA. Participants in this study also argued that fathers have a very clear voice through social media, in terms of their queries about their children's situation, the provision of intervention services and the search for centres and clinics. They also help their wives translate some English websites which focus on EIS. This is a clear indication of the great role played by social media as a tool of interaction between members of the Saudi family. A number of fathers have become active in these media platforms, effectively contributing to community awareness and encouraging their peers to help their wives support their children in the early intervention phase. The fathers' contributions on social media, therefore, take different forms, as summarised in Figure 7.6



Figure 7.6 Participation of fathers in the context of the current study

Moreover, we cannot ignore some of the factors that have been reviewed in the literature which may have a direct impact on encouraging fathers to use social media and support their wives. Indeed, the ongoing economic and technological development in KSA has contributed to making people more open and willing to use technology, helping change the level of community awareness about disability, the need for early intervention, the search for educational services

and the educational culture. However, the impact of social media on each of these factors needs to be examined in further detail in future research.

Social media is also important in encouraging the brothers of children with DS and relatives to raise the awareness and search for information while dealing with children with DS especially in terms of their social behaviour. There is no doubt that this function of social media has brought about a radical change in the type of relations and roles and will contribute in the future to encouraging families to provide the necessary services and at the same time to raise awareness of the community about their children with DS.

In addition, social media provides an effective environment for consultation, teamwork, and volunteering. In real life, it would be costly, time-consuming and logistically challenging to get all the people involved in EIS in one place. However, through social media, parents and teachers can consult specialists in a fast and cost-efficient manner. Mothers need quick support and urgent response to their daily enquiries. Social media can provide such responses, very quickly and sometimes at no costs. It also connects the largest segments of society, both inside and outside KSA, to form collective work teams as well as voluntary work groups, all of whom aim to help children with DS and work on clarifying how to provide early intervention services that children need in their early stages. Mothers, especially those in remote areas and outside cities, can benefit greatly from the collaborative work with specialists via social media which provides an urgent, quick and inexpensive communication channel. Through social media, it is possible to obtain various types of support information, including psychological and physical support.

Moreover, social media plays a role in being an urgent delivery tool for the government for all the demands of the families of children with DS, their worries about the lack of centres and services and their need for financial and moral support. They can communicate efficiently with the government officials through the use of Hashtag. The participants in this study were satisfied with the government responses. They argued that social media has provided an efficient channel for putting their demands to the government compared to the previous years where communication had to be done via other channels. In the latter case, parents would sometimes not get any response from the government or obtain a reply after a long time. The existence of communication channels between members of society and the government directly contributes to getting the demands of citizens to the official authorities who can then respond swiftly. Participants in this study clearly highlighted the effectiveness of communicating directly with the government via Twitter.

Results of this study have also shown the role played by social media as a tool to increase awareness of early intervention services in Saudi society. Social media can be used to raise the awareness of the family of children with DS, doctors, special education teachers and society generally. The information on social media helped mothers to deal with the stage of receiving the news that they had a child with DS. It also increases the awareness of mothers about the characteristics of children with DS, how to deal with them and the importance of providing early intervention services through the family and the use of information on the media platforms. Social media is important in educating mothers about the rights and facilities provided by the government to all categories of disability. It can be argued that the emergence of many official social media accounts in the name of children with DS is an achievement as it can raise the awareness of Saudi society about disability, the children's qualities and their need for encouragement and support. Such accounts have also shown to parents the importance of EIS for their children and changed the negative beliefs about the difficulty of education or training at home.

Also, through social media, participants were able to change the negative attitudes of some doctors, who refer to children with DS as "Mongolians". The participants showed their role by sending public and private messages to the doctors and informing them about the impact of these old names on the feelings of the mothers and the pain they caused on delivering the news of the birth of a disabled child. Also, such negative statements sometimes prevent mothers from continuing to help their children and provide early intervention services, especially when doctors say that they cannot be educated or trained. Social media also provides a database on the characteristics of children with DS and encourages members of society to identify them. Through social media, participants were able to highlight the importance of changing the negative attitudes towards these children and also educate the community members about the value of early intervention in anticipation of this happening in the future to any member of the community. Social media also has a role in educating some special education teachers who carry negative attitudes or make repeated frustrating statements about the education of children with DS. Social media makes available information, experiences and feelings of mothers, fathers and teachers and provides a realistic picture of the challenges faced by the adults involved in the care of children with DS. It also highlights the benefit of EIS for children with DS and the need to change the attitudes of many teachers and members of Saudi society.

The results of the study also highlighted the role of social media as a source of information about early intervention services for children with DS through the availability of information, real experiences, audio clips, films, and training steps provided by many mothers and teachers both inside and outside KSA. A scientific content based on the real experience of other children, parents and teachers is being documented through social media, which has become a source and database for many new mothers who have children with DS. The lack of information or even knowledge about early intervention in Saudi society is clear, as shown by many of the local studies reviewed in the second chapter of this study and the opinions of the participants. Therefore, there are no official references that help the parents and teachers understand the importance of these services and their immediate delivery. Hence, the availability of social media as a database is a great support for parents and teachers to obtain the necessary information, although the quality of the information on some platforms, as explained by the participants, needs to be improved. To take full advantage of social media, users should not feel that they cannot display pictures and videos for fear of envy and societal customs. Nevertheless, social media is a reliable source of information and an effective database at present.

In addition, social media provides multiple ways for the transfer of information and creative ideas between mothers and teachers, which contributes to the creativity of participants, in the production of teaching aids used in training on some sensory-cognitive skills, linguistic, cognitive, behavioural, motor skills, social and daily life skills needed in the early years. Furthermore, social media provides creative ideas that help mothers and teachers to achieve goals with children in attractive and exciting ways. The parents learn to use the raw materials in their immediate environment to train their children. This helps to keep down the costs of teaching materials. Social media, therefore, has become a source of creativity and innovation for parents and teachers and helps them to think and develop practical ideas such as, how to stimulate children sensibly using resources from the home environment, or train them in motor skills and daily life skills, especially in early life. These platforms provide creative ideas in the preparation of tools for learning made by people who are service providers and more familiar with the needs of each child and can thus ensure the successful education of very young disabled children.

The results also showed the great role played by social media in early intervention. These platforms act as an urgent alternative to the lack of early intervention centres in KSA. Also, they are considered a source of information for teachers in special education who play a significant role in the absence of specialists such as speech therapists, physiotherapists, and occupational therapy specialists. This specialised team is important to provide early intervention services for children with DS but their presence is seen more on social media than in early intervention

centers in KSA. As noted earlier, this situation is due to the lack of centres providing early intervention services.

In summary, the presence of social media as a form of modern technology has contributed in supporting and helping mothers and teachers in their attempts to provide early intervention services for children with DS in the Saudi context. Thus, social media is considered a reliable alternative solution to support mothers and teachers who work with children with DS. It is also considered to be the most prominent, widely accepted and preferred tool for learning and acquiring information on EIS. Also, the results of this study confirm that social media is a successful tool for supporting parents to provide EIS at home, as recommended by current trends, recent studies and approved by the IDEA. Social media offers support levels that may be difficult to provide in the Saudi context through the programmes of home visits which are rare. As discussed above, social media provides different types of support to parents and teachers. This study also shows that parents can help their children at home without any inconvenience or the material costs of home visits. Social media provides parents with emotional support through their interaction with other parents in similar situations. Parents get to share their feelings, queries, and concerns. This collective and cooperative aspect of social media can help parents feel supported and less lonely. Social media is also one of the fastest tools to communicate with both the government and the concerned authorities who can then support parents through Hashtag or other social media outlets.

On the other hand, the findings show a number of problems that the participants are faced with, especially in the context of this study. The most important difficulty relates to the sometimes-negative influence of cultural factors, e.g., the impact of social customs and traditions that control the interaction of some members of society. Such traditions impede the participants from freely enriching the media platforms with valuable information on early intervention for children with DS and also reducing the chances of directly benefitting other parents. Other problems include: the negative social attitudes towards the families of children with disabilities, the way of dealing with the negative views expressed on social media, the ridiculing of disabled children, the exploitation of families through imaginary accounts and immoral competitions in those media platforms. Also, this study has highlighted the negative impact of the extensive use of social media on family relationships and personal health. The users also face technical problems that might be hard to fully address.

However, overall, this study shows that social media has a crucial role in serving, supporting and facilitating the task of participants in this study. The findings have contributed to the development of a theoretical framework and model in the context of this study. The framework shows the actual role of the various media platforms and suggests a future direction for the effective use of social media as a useful tool in successful early intervention specifically, and special education in general. The findings have also led to the proposal of measures to tackle the most important challenges and problems faced by people with disabilities and their families on social media so that they take full benefit of technology.

7.6 Limitations of the Study

One of the main limitations of this study is the difficulty of generalising the results because of the small study sample. Indeed, this study is limited to the opinions and experiences of a restricted number of participants. Although the sample is small, it is best suited for thorough qualitative research on the role of social media in the field of early intervention, a topic which has not been addressed or studied in the Saudi context. The interviews provided in-depth information on the subject area and opened up avenues for further qualitative research in the field of special education and social media. Currently, the area of private education in KSA is rich in quantitative research, but it lacks qualitative research that offers thorough insights into the topics under investigation (Al-Hano, 2016). Even though it is difficult to generalise the results of this type of qualitative research, I tried in this study to be clear in its practical procedures in order to be a starting point for future studies on the subject of social media and its role in early intervention in KSA and around the world. I believe that the results will vary across communities and people, but the problems and needs are similar, especially in the field of humanism as special education.

In addition, it is evident that this study has a gender bias as all the interviewees were females. This bias was not intended but emanated from the way Saudi society functions. As explained earlier, mothers tend to play a greater role than fathers in providing services to their children with disabilities (also Merza, 2002). Also, most special education teachers who work in early intervention services in KSA are females. Therefore, to a certain extent, the sample reflects the current reality of Saudi society. It should, however, be pointed out that some of the findings were contrary to my expectations as a researcher and as a native of KSA. Indeed, I did not expect to find that through social media, the traditional roles customary in the Saudi context were changing and fathers were being encouraged to support their wives in raising the children. Therefore, future research should address the changing roles of fathers and aim to explore and compare the views of mothers and fathers with regard to special education and social media.

7.7 Recommendations for Future Research

This is the first study that has examined the role of social media in the provision of early intervention services from the perspectives of parents and teachers of children with DS in KSA. There still remains considerable work to be undertaken in this constantly evolving area. Therefore, I recommend that research on this topic should be expanded in order to address a wider segment of the Saudi population and to cover the largest possible number of types of disabilities found in KSA. This will contribute significantly to the provision of scientific literature in the media and special education research fields. There are several major recommendations and suggestions for future researchers interested in the field of special education and media. They should conduct;

- Further studies on the role of social media in supporting early intervention using different methodologies, such as quantitative approaches or mixed methods, as well as addressing disabilities other than DS.
- Studies comparing fathers' and mothers' use of social media to provide early intervention services and what type of information is gained regarding the various disabilities.
- Studies that focus on the views and experiences of specialists in psychology, physiotherapy, occupational therapy and speech therapy on the provision of early intervention services.
- Research on each type of social media that emerged in this study and assess their positive and negative effects on the provision of EI.
- Further investigation into the reasons for the reluctance of mothers and teachers in KSA to use Facebook, especially in the field of early intervention, or other aspects in the field of special education.
- Studies to identify the knowledge acquired by mothers on social media and assess whether there is a gap between the acquisition and application of this knowledge.

7.8 Recommendations for Saudi Policy Officials

The results of this study, which are considered qualitative in nature, are aimed at a sample of Saudi society members with interest in the education of children with DS. Although there were few participants, they mentioned many issues of value and direct relevance to early intervention and the use of social media. As a researcher, I consider the findings as a significant database. Researchers interested in the field of special education in KSA and other countries can draw from the current study and further studies on the subject of social media and its role in the field of special education. Such findings will be of benefit to the children with DS and their families.

The Saudi government is seeking development approaches for the benefit of society members through the country's Vision 2030. Through this Ph.D. in the United Kingdom, as a faculty member at King Saud University in the Department of Special Education and a researcher, I feel that I can make meaningful recommendations for the homeland in line with the future aspirations of the Saudi government by providing quality services to community members. Therefore, I hope that the Saudi government and all the officials in the relevant ministries will give special attention to people with disabilities in general, and Down Syndrome, specifically. I will be particularly honoured if my recommendations are taken into consideration and implemented for the benefit of children with disabilities.

The technological and media progress that is taking place in Saudi society and the global openness through the use of social media should be used in the service of children with special needs and their families. Social media has the potential of greatly facilitating access to the services that these members of Saudi society need. Therefore, based on the qualitative results that emerged from this study, it is clear that social media is a useful tool in delivering early intervention services to all families in the most accessible ways and at the least financial costs either to the family itself or to the Saudi government. Such a use of social media also corresponds to the direction that the government wants the country to adopt. The Saudi government's lack of provision of early intervention centres and their previous apparent disinterest on the matter has been a subject of debate among all strata of society. It is agreed that early intervention services pave the way to the successful integration of disabled children in Saudi schools.

The results of this study confirm that social media is an effective tool and an alternative solution to the lack of early intervention centres in KSA. Therefore, as a researcher, I strongly recommend that the Saudi government adopt the official directive of all the ministries of the State such as the Ministry of Media, the Ministry of Education and the Ministry of Health to form a specialised team set up as *a Saudi National Project Specialised in Providing Early Intervention Services Through Social Media*. There should be a government official site that includes all families of children with disabilities from birth to 5 years. This site should be

supervised by the authorities and provide services to all people in various regions of KSA. Such a site would offer domestic services and point to government hospitals directly and rapidly in order to provide EIS such as speech services, physical therapy services, occupational therapy services and psychological services from the time of the discovery of the child's disability and even supply follow-up access to kindergarten children.

Moreover, I recommend that the Saudi government and all its ministries give due attention to the protection of the rights of individuals with disabilities and their families, especially when using social media. Vulnerable disabled children should be protected from intruders, exploitation, and transgression of their rights and dignity through the establishment of strict controls and punishment for those who are unkind or unfair towards these groups within the Saudi society. The Saudi government is putting strict controls on anyone who goes beyond morals in social media, whether by attacking religion or government policy.

Therefore, I recommend that such controls be extended to protect persons with disabilities and their families and to prevent any exploitation or attack that hinders their use of these technologies. This recommendation is consistent with Article 9 of the Convention on the Rights of Persons with Disabilities signed and ratified by the Saudi government, which emphasises the need for people with disabilities to live independently and participate in society in all aspects of life. The Convention also stressed the important role of governments in facilitating the access of persons with disabilities to the surrounding physical environment and means of transport, information and communications, including information and communication technologies, systems and other facilities and services available to the general public in urban and rural areas. Therefore, the access of individuals with disabilities and their families to these means and their community participation is a right guaranteed by many international laws and regulations, and even before that, Islam has affirmed it through its principles. Hence, by ensuring that the disabled people have access to certain facilities and services, the government will be abiding by international laws and religious principles.

7.9 Personal Reflections on the Ph.D. journey

I consider this work as a modest collaborative project that I have done with the direct support of my supervisor of Dr. Evangelos Himonides and also UCL University, where I obtained a perfect education environment with access to all its resources and services. This thesis was completed during the 3-year doctoral course. I was granted leave from the King Saud University in order to focus on the research and make a unique scientific contribution in the field of special education while serving my country, KSA, which has given me the opportunity to study for my Ph.D. in the UK.

In the first meeting with my supervisor, I understood the meaning of research and creativity. He explained the task of undertaking research in a such way that I felt the important responsibility of a researcher. He said: "The successful researcher is the one who sets his goal and focuses on it accurately. The researchers in this world will not be able to solve all the problems or discuss all the issues".

Therefore, I started the doctoral journey which is a guide to my future career in my field of special education. Most studies in my country, especially in the field of special education, are limited and focus mostly on areas such as childhood, administration, and psychology. But there are no studies discussing the subject of special education and media. So, there was a gap that had to be filled. Over the years, I have gained experience in my field, especially with regards to the needs of families of children with disabilities and teachers. I also did not fail to notice the general atmosphere in my country which is undergoing rapid technological innovation and mobility. All of these observations were among the basic considerations of my research.

Therefore, I set up a daily schedule that shows all my daily activities and achievements. I assigned myself a mandatory work time daily from 7 am to 9 pm. I mostly complied with this schedule with some exceptions due to tiredness or travel to see my family in KSA. I admit that I have been tough on myself in these years. But with this determination, I feel happy that I am progressing in the field of research.

The University College London (UCL) has enhanced my knowledge and research skills by giving me access to many courses which focus on research methods, qualitative analysis, critical thinking and creativity, educational seminars and workshops, and external visits with a group of colleagues to some specialised associations of persons with disabilities in the UK. Moreover, my supervisor also played a major role in encouraging participation in a number of conferences within and outside the university. This has provided me with the opportunity to present my findings in conferences, interact with colleagues in the field and get access to useful feedback from very early on in my Ph.D. Participation in the conferences has encouraged me to refine my presentation skills and my ability to respond to questions. This reflected positively

on my thesis, which has benefitted greatly from the comments of colleagues and researchers who attended these university-based and international conferences. In the third year of my Ph.D., I received the award for the Best Presentation at the *20th International Conference on Special Educational Needs, Teaching, and Different Approaches* in London. The feedback from international professors contributed to the development of some of the points in the thesis.

In addition, I experimented with scientific publishing in educational journals. I devoted some time to writing a paper after I submitted my first draft to my supervisor for feedback. I took advantage of the “free” time to develop a topic that has been of interest to me since I was studying at Master's level, which is the subject of counseling and teamwork. Therefore, I developed a modest research paper entitled "Consultation and Collaboration in Special Education Programs: Adapting the American Model to the Saudi Arabian Context". I also published my Master's thesis after translating it into English. The title is *A Comparative Study of the Effectiveness of the “Most to Least” and “Constant Time Delay” Procedures in Training Girls with Moderate and Severe Intellectual Disability on some Independent Skills*. The Royal Embassy of Saudi Arabia Cultural Bureau has appreciated my annual efforts through their continuous follow-up. They awarded me the *Science Excellence Award* and added my name to the Honor Plate.

There is no scientific journey of comfort, but there is a lot of fatigue, seriousness, diligence, difficulties, challenges and also sacrifices in terms of health and family. In spite of all this, there is support and encouragement from honourable people and professionals such as my supervisor and faculty members of the UCL. I am proud to work with them and I also wish to make a scientific contribution to benefit all the children with DS and other disabilities in KSA and around the world. I will carry on working hard upon my return to the Department of Special Education at King Saud University.

I will show the importance of integrating social media with special education. Also, as I mentioned at the beginning of this study, I look forward to establishing a chair of scientific research at King Saud University for all those interested in the field of Media and Special Education because, the field of special education in KSA needs to employ technology to serve people with disabilities and their families.

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Appendices

Appendix A: Statement from King Fahd National Library regarding this study

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١٤٣٧ / ٧ / ١٤ هـ



المملكة العربية السعودية
مكتبة الملك فهد الوطنية
إدارة الإبداع النظامي

إفادة

استفسار عن تسجيل موضوع بحث (ماجستير/ دكتوراه)

الاسم : عواطف حبيب سايير الشمري	الماتف:	-
التاريخ: ١٤٣٧/ ٧ /١٤ هـ	فاكس:	-
مندوق البريد: -	البريد الإلكتروني:	-
اسم الجامعة: جامعة كلية لندن UCL	الدرجة العلمية:	دكتوراه

موضوع البحث

- التحقق من دور وسائل الإعلام الاجتماعية لدعم الأبحاث والمعلومات عند استخدام خدمات التدخل المبكر للطلاب ذوي متلازمة داون في المملكة العربية السعودية.

لاستخدام الإدارة فقط

نفيدكم أنه بالبحث في عناوين الرسائل الجامعية بإدارة الإبداع النظامي المتاحة

لدى المكتبة تبين أن :

- الموضوع لم يتم بحثه
- الموضوع تم بحثه
- تحت عنوان

.....
.....
(.....الدرجة العلمية) ()

	التاريخ	اسم الموظفة
	التوقيع	رِيم الشَّهْرِي
التاريخ	١٤٣٧ / ٧ / ١٤ هـ	مدير الإدارة
التوقيع		أحمد بن عبدالله الراشد

• في حالة التعديل على الإفادة مراسلتنا على الإيميل : Depository@kfnl.gov.sa

Appendix B: Formal written request to the Department of Special Education, KSA

جامعة الملك سعود
المملكة العربية السعودية
ص. ب. 2458 الرياض 11451
www.ksu.edu.sa

جامعة الملك سعود
King Saud University

كلية التربية

سعادة مديرة مركز [REDACTED] بمدينة الرياض حفظها الله
السلام عليكم ورحمة الله وبركاته ... وبعد:

نفيد سعادتكم بأن المحاضرة بالقسم والمبتعثة لدراسة الدكتوراه بجامعة كلية لندن/
عواطف حبيب الشمري، تقوم بإجراء دراسة بعنوان: " **Investigating the role of social media in supporting of parents and teachers of student with Down Syndrome: Focus on Early intervention services in Saudi Arabia** " ، وترغب الباحثة بتطبيق الاستبانة المرفقة على عينة من معلمات وأمهات أطفال متلازمة داون بمركز [REDACTED] بمدينة الرياض.

أمل من سعادتكم التكرم بالموافقة على تطبيق الاستبانة المرفقة وتسهيل مهمة الباحثة.

وتقبلوا خالص التحية والتقدير،،،،

رئيس قسم التربية الخاصة
أ.د. علي بن محمد هوساوي

أ.د. هوساوي

Appendix C: Approval from the Day Care Centre

المملكة العربية السعودية

للمملكة العربية السعودية
تحت إشراف وزارة العمل
والتنمية الاجتماعية

التاريخ: ١٦/٣/١٤٣٨ هـ.
الموافق: ١٥/١٢/٢٠١٦ م

السادة / الملحق الثقافي بلندن

حفظكم الله

السلام عليكم ورحمة الله وبركاته وبعد

نفيدكم نحن مركز [REDACTED] بصدور الموافقة للأستاذة الباحثة / عواطف بنت حبيب الشمري .

من جامعة كلية لندن UCL بالمملكة المتحدة لتطبيق دراستها للدكتوراه ميدانيا داخل المركز و سنقوم بتسهيل كافة المهام التي تعينها على إنهاء التطبيق الميداني خلال المدة من (١ - ٣٠ ابريل ٢٠١٧ م) بكل يسر وسهولة.

وبناء على طلب الباحثة تم إعطاؤها هذه الموافقة .

وتقبلوا خالص التحية


[REDACTED]

Appendix D: The Scheduling and Time Plan to Collect Study Data

Weeks	Task	Expected time	Notes
Week (1)	<ul style="list-style-type: none"> Visit the daycare centre and meet the administration and educational supervisor in order to seek permission to conduct the study and show them the approval from the University. Explain the goal of the study, and ask the managers to choose participants. The choice of interviewees was done by the management of the centre without my intervention as the researcher. Explain to them what required criteria for choosing the participants. I prepared a daily schedule for participants. Due to the short working day of the centre, only one participant could be interviewed each day. 	One to two hours	The official working hours are 7am -12 pm
Week (2)	Attend the centre from the morning for face-to-face interviews with participants in this study.	One to one and a half hours	Interviewed 2 mothers and a teacher
Week (3)			Interviewed 2 mothers and 2 teachers
Week (4)			Interviewed a mother and 2 teachers

Appendix E: Participant Consent Form, English version

Institute of Education



PARTICIPANT CONSENT FORM

Title of Research Project: Investigating the role of social media in supporting parents and teachers of students with Down Syndrome: Focus on early intervention services in Saudi Arabia

Brief Description of Research Project, and What Participation Involves:
The research aims at investigating of the role of social media in supporting of parents and teachers when they use early intervention services for students with Down syndrome in Saudi Arabia.

Participation involves being interviewed by the researcher. The interview from one hour to an hour and a half. Notes will be written and recorded during the interview. The participant has the right not to be identified by name in any report, and his confidentiality as a participant will remain secure. Teachers and directors from the school will neither be present at the interview nor have access to the data collected.

PROJECT Objectives

- Identifying examples of the social media used by parents and teachers as support in the early intervention of Down syndrome.
- Discovering the experiences of parents and teachers in social media that support them when using early intervention services for young people with Down syndrome.
- Determining the barriers that parents and teachers face when using social media in supporting early intervention for young people with Down syndrome.

Right to withdrawal and omission of data

- I have the right not to answer any of the questions.
- I have the right, if I feel uncomfortable in any way during the interview session, to withdraw at any time, without giving reason.
- I have the right to omit any of the interview data.

Investigator Contact Details:
Awatif Habeeb ALShamare
UCL Institute of Education, Bedford Way, London WC1H
awatif.alshamare.15@ucl.ac.uk

Consent Statement:
I agree to take part in this research, and am aware that I am free to withdraw at any point without giving a reason, although if I do so I understand that my data might still be used in a collated form. I understand that the information I provide will be treated in confidence by the investigator and that my identity will be protected in the publication of any findings, and that data will be collected and processed in accordance with the Data Protection Act 1998 and with the University's Data Protection Policy.

Name

Signature

Date

Please note: if you have a concern about any aspect of your participation or any other queries please raise this with me or my tutor.

Tutor Contact Details:
Dr . Evangelos Himonides
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Appendix F: Participant Consent Form, Arabic version

Institute of Education



استمارة موافقة المشاركين في البحث

عنوان مشروع بحث بعنوان : التحقق من دور وسائل الإعلام الاجتماعي في دعم الوالدين والمعلمين عند استخدامهم خدمات التدخل المبكر للطلاب ذوي متلازمة داون في المملكة العربية السعودية

وصف موجز لمشروع البحث ، وما تشمل للمشاركة :

يهدف البحث إلى التعرف على دور وسائل الإعلام الاجتماعي في دعم الوالدين والمعلمين عند استخدامهم خدمات التدخل المبكر للطلبة ذوي متلازمة داون في المملكة العربية السعودية.

سؤال البحث الرئيسي هو :

من / ما هو دور وسائل الإعلام الاجتماعي لدعم الآباء والأمهات والمعلمين عند استخدامهم خدمات التدخل المبكر مع ا لطلاب ذوي متلازمة داون في المملكة العربية السعودية؟

مشاركة تعتمد على مقابلة من قبل الباحث حيث تستمر حوالي 30-45 دقيقة. سيتم كتابة الملاحظات وتسجيلها أثناء المقابلة. المشارك لديه الحق في عدم الكشف عن اسمه في أي تقرير ، وسوف تبقى المعلومات سرية ولن يطلع عليها أي شخص في المدرسة أو غيرها

اهداف البحث :

- 1- التعرف على أمثلة عن وسائل الإعلام الاجتماعي التي يستخدمها الوالدين والمعلمين لدعمهم في التدخل المبكر لمتلازمة داون.
- 2- اكتشاف تجارب الوالدين والمعلمين في وسائل الإعلام الاجتماعي التي تدصمهم عند استخدام خدمات التدخل المبكر للتلاميذ ذوي متلازمة داون .
- 3- تحديد العوائق التي تواجه الوالدين والمعلمين عند استخدام وسائل الإعلام الاجتماعي في دعم التدخل المبكر للتلاميذ ذوي متلازمة داون.

الحق في الانسحاب أو حذف البيانات:

- لدي الحق في عدم الإجابة على أي من الأسئلة.
- لدي الحق إذا كنت ا شعر بعدم الارتياح بأي شكل من الأشكال أثناء المقابلة ، إلى الانسحاب في أي وقت دون إعطاء سبب.
- لدي الحق في حذف أي من بيانات المقابلة

بيانات من سيقوم بالمقابلة:

عواطف حبيب الشمري
كلية جامعه لندن
UCL Institute of Education
Bedford Way, London WC1H
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بيان الموافقة :

أنا أوافق على المشاركة في هذا البحث، وأنا أدرك أنني حر في الانسحاب في أي وقت دون إبداء أسباب . وأنا اعني أن البيانات الخاصة بي لا تزال تستخدم في جمع البيانات . وأنا أفهم أن المعلومات التي أقدّمها سيتم التعامل في الثقة من قبل الشخص الذي يقوم بالمقابلة ، والتي من شأنها أن تحمي هويتي الشخصية من النشر ، وسيتم جمع هذه البيانات ومعالجتها وفقاً لآليات حماية البيانات لعام 1998 ومع سياسة حماية البيانات الجامعية .

الاسم /

التوقيع /

التاريخ /

ملاحظة : إذا كان لديك أي قلق حول أي جانب من جوانب مشاركتكم أو أية استفسارات أخرى يرجى إبلاغي أو للمشرف الدراسي .

عنوان الاتصال مع المشرف الدراسي للباحث :

الدكتور . ايفانجيلوس هيموندس
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Appendix G: Interview Questions

Questions at the beginning of the interviews (the group of mothers)
<ul style="list-style-type: none"> • <i>Let's start by talking a little bit about your child from the beginning of pregnancy until birth.</i> • <i>How did you start providing early intervention services for your child? Explain to us about this aspect.</i>
Questions at the beginning of the interviews (the group of teachers)
<ul style="list-style-type: none"> • <i>Let us first get to know you a bit by getting to know your academic qualifications and practical experience in working with children with DS.</i> • <i>What about your potential as a teacher in providing early intervention services for children with DS through the Centre? How did you develop it?</i>
General questions for all participants
<ul style="list-style-type: none"> • <i>Can you tell me about the social media you use every day? In detail?</i> • <i>Can you tell me about your personal experiences while using social media?</i> • <i>Tell us what bothers you personally when using social media.</i> • <i>From your personal point of view, how will the future of social media in Saudi Arabia be?</i>
<p>Note:</p> <p><i>These questions are just a general guideline for me as a researcher during the interview and also to ensure equality and fairness in asking questions to all participants. There are a lot of sub-questions that have been raised, depending on the nature of the dialogue and discussion that took place for each participant.</i></p>

Appendix H: Example for tables of initial codes for each participant

Initial codes
Twitter, Instagram, WhatsApp, Snap chat, YouTube, Forums, Pinterest, Facebook
Information exchanged
Information exchanged between mothers, teachers and specialists language/ physiotherapy
Consult specialists in the field of DS -Consult doctors
Exchanging experiences between mothers/ mothers, teachers and specialists
Knowledge of events, seminars and conferences through social media
Support new mothers of a child with DS - Acquire new information in child training
Information exchanged between mothers, teachers and specialist's Language / physiotherapy
Take advantage: language therapy/ behaviour modification/ physiotherapy/ occupational therapy/ daily life skills
Change the negative attitudes of the people and encourage them to use social media
Correcting false beliefs - Use of hashtag for claims to the government
The use of global sites on YouTube/ Instagram
Assistance in the educational processes
To prepare resources needed when teaching children with DS
Participation of researchers in answering questions
A guide for parents to know the appropriate centres and hospitals
The benefit of mothers from outside Riyadh or villages in the south and north regions
Psychological support for teachers / mothers / families
Creativity and innovation- Claim to the government
Communication outside KSA - Publishing books on social media
Volunteering with a person who has a disability
Claiming child rights and implementing legislation
Encourage children with DS and their families on social media
Negative attitudes of mothers
Negative attitudes of teachers within the community towards the ability of children with DS
Twitters, word limit issues -
False information / Information without sources
No references - Fake Accounts- Negative attitudes of mothers -
Some incorrect translation on websites
Doctors use derogatory terms such as Mongolism
Weak internet connection
-Discussion and exchange of information and scientific research
Lack of Arabic sites
Lack of up-to-date information in private educational forums, weak update
Poor time management, time consumption
Family problems - Lack of sleep and hormonal disorders, health problems
Weak government involvement - No moderation
Mothers fail to see that particular circumstances might be different to other children's situation
Reservation of mothers to share private information
Privacy of mothers on information, pictures and videos
The fascination of social communication
The low level of development of the child because of family being preoccupied with social media
Negative electronic advertisement
Love of fame / Lack of safeguarding
The naming of children with Mongolism in social media
Intruders on sites specifically designed for DS people
Misinformation and reliance on copying and pasting
Weak role of the Ministry of Information in safeguarding quality information
There is an immoral competition between support groups
Lack of application of advice given by teachers, gap in application
The shyness of parents in sharing personal media of the child
Reluctance of mothers to appear in videos or pictures in social media
Cyber bullying occurring when images or videos are posted

Appendix I: Definition of codes

Codes	Definition/Explanation
Twitter	The social media platforms mentioned, used and/or preferred by the participants.
Instagram	
WhatsApp	
Snapchat	
YouTube	
Forums	
Pinterest	
Facebook	
Information exchanged	Participants exchange information on how to provide early intervention services for their children, identify the most important centres offering physiotherapy or speech therapy services, train the children on language and motor skills, control unwanted behaviour at an early age, and provide proper feeding methods, especially for infants.
Exchanging experiences	Through their use of social media, participants are able to share experiences with each other. The experience can be of a practical nature gained from daily interactions with the children or of a theoretical nature obtained from attending seminars and workshops inside and outside KSA. Exchanging experience also involves benefitting from the expertise of other disciplines such as physiotherapy, occupational therapy, speech therapy and medical services.
Counselling	Participants are able to obtain the urgent and free consultations that are available throughout the day, from a large number of specialists in special education, doctors, psychologists, physiotherapists, occupational therapists and others with international expertise, or specialists in the field of language and sensory perception both within and outside KSA.
Collaboration	Participants engage in collective work through social media. They can form cooperative teams, both at the family level, such as the cooperation between father/mother and brothers in the search for services suitable for their children or a group of mothers who provide assistance to each other on the basis of their knowledge and experience in order to support the children. Collaboration also involves cooperation and communication among specialists working in the disciplines related to EIS (speech therapy, physiotherapy, occupational therapy, psychotherapy) in order to raise awareness through social media or to hold seminars and lectures on how to provide EIS for children with DS.
Learning	Through social media, participants learn new skills and acquire new information on the provision of early intervention services for children with DS. Learning also involves correcting any wrong information and false beliefs about DS.
Knowledge of events	Through social media, participants are able to find out about the dates of seminars and lectures related to DS. Participants can also learn about training workshops for mothers and teachers, distance learning courses on how to provide services to children at home, the International Day of DS and the most important conferences in and outside KSA. "Knowledge of events" also includes the live broadcast of those events via snapchats.
Support	Through their use of social media, participants are able to support each other in different areas of life. For example, mothers support other parents and train them on how to deal with infants and also give psychological support by encouraging them and telling them about their training experiences. Support also takes the form of translating and searching for useful information through social media for other parents.
Awareness	Through their use of the social media, parents raise awareness about children with DS in the community and stress the importance of providing early intervention services for the children's progress in the absence of centres for EI. "Awareness" also highlights the fact that these children have special needs and need support and understanding from the community.
Knowledge of laws and rights	Through social media, mothers learn about the legislation and rights of their children. The teachers are also informed about these legislations and rights; they can then educate parents in KSA about what the government is offering their children in terms of free services and official charters. Social media has an important role to play in the dissemination of official governmental information on DS.

Changing the negative attitudes	Through the use of social media, participants have been able to change the negative perception of DS children's ability to learn from an early age. These negative perceptions and preconceived ideas come from society generally and also parents of children with disabilities.
Correcting false beliefs	Rectifying some of the false information about children with DS, e.g., they die at an early age or they cannot be taught or trained.
Use of hashtag	Participants use hashtag to convey the demands and needs of the children to the government directly.
Global sites	All social media sites outside KSA, whether in Arab, European or American countries.
Resources	Social media have become sources of correct information, whether based on the expertise of specialists or on clear references.
Discussion	Social media users' discussions and debates on the issues and provision of EI services for children with DS and matters related to specialists.
Guidance	Guidance provided by specialists to all participants in order to solve their problems or teach them how to implement IES for children with DS.
Access	Easy access to information on EIS in remote areas and villages.
Alternatives	Social media serves as an alternative solution in the absence and lack of EIS in KSA.
Realism and transparency	The information is based on fact and real life experiences of parents and specialists. The information on social media is also free from censorship.
Creativity	Through information on social media, participants learn to use raw materials in their immediate environment, especially in the training of the child on the necessary skills in the EI stage. Such materials help to develop the children's language, motor skills and sensory perception.
Innovation	Benefitting from the ideas on social media in order to devise more engaging, locally relevant and attractive ways to educate and train children.
Lobbying the government	Putting pressure on the government through social media to provide early intervention centres.
Globalisation	Participants have access to various Arab and international countries and can communicate with people in different countries.
Publishing	To publish books and magazines on children with DS, based on the experiences of parents and teachers and supervised by specialists in universities or doctors.
Volunteering	Volunteer teams on social media. This includes all specialists, parents and community members who exchange information, provide support and plan ideas through these technological means. These ideas are then implemented in Saudi society, e.g., the supervision of social networking sites in order to raise awareness and respond to people's enquiries or the organisation of celebrations, gatherings and seminars in the community.
Encouragement	Social media encourages fathers to have an online presence and support their wives. It also involves the participation of teachers and the dissemination of knowledge on how to develop the skills of the children.
Negative attitudes	Negative responses from some doctors, parents, teachers and members of society about the naming of children with DS, their ability to learn and the need for EIS.
Weak internet connection	Frequent network interruptions due to usage pressure.
Misinformation	Incorrect information about children with DS, e.g., they die at an early age or they cannot be taught or trained.
No references	Some of the information available on social media is not referenced and has no proper scientific basis.
Fake accounts	Online accounts by people with fake identities.
Translation problems	The level of translation on the Internet is not accurate.
Naming "Mongolism"	An outdated name for children with DS. It is still used by doctors in Saudi hospitals and is a source of upset, frustration and anger for the mothers.

Weak update	The forums are not properly managed, supervised and updated. The information provided is outdated and incorrect.
Time consuming	The participants' use of social media consumes a lot of their time. Sometimes they are interacting on social media beyond midnight.
Family problems	Marital problems, parental anger, limited interactions with other family members.
Health problems	Sleep disorders, gland disorders, fatigue and neck friction.
Weak government involvement	The government does not provide or provides limited material and psychological support for the participants and their activities.
Negative electronic advertisement	Advertisements for low-level private centres or for useless products.
Fame	Some fathers exploit their own children with DS for materialistic gains and social fame.
Intruders	People who are not specialists falsely claim that they know about disability. Some of them also use social media to ridicule disabled children and their families.
Unethical competition	Unfair competition on social media between some groups in the field of special education. This unethical competition can lead to hacking or information theft for fame.
Lack of safeguarding	Participants feel that the government is failing in its role to protect their data and develop strict laws to punish intruders.
Issues around the Parents	Teachers are concerned about the performance of mothers and their practical application of their instructions and advice on how to train the children at home.
Freedom	Participants emphasise that parents should be free from shame and overcome the negative social views in order to successfully help their children through social media.
Stigma	Parents feel shy or afraid to show their children's pictures on social media, either because they do not want people to know about their children or because they fear negative responses from some members of society.
Reticence	Some famous families in KSA refrain from showing their DS children's pictures on social media.
Policy	The role of the government and its ministries specialised in providing support for the development of social media and creating a useful database in the field of EI.
Religion	Some mothers use religion as the reason for their inactivity on, and absence from, social media. They are also afraid of the envy of other parents and explain this fear in terms of religion.

Appendix J: Codes listed by participants

Participants Codes		M1	M2	M3	M4	M5	MPS	T1	T2	T3	T4	T5	TPS
1	Twitter	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
2	Instagram	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	WhatsApp	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
4	Snap chat	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	YouTube	✓	✗	✗	✓	✗	✓	✓	✓	✓	✓	✓	✗
6	Forums	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓
7	Pinterest	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗
8	Facebook	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	Information exchanged	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	Exchanging experiences	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	Counselling	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	Collaboration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	Learning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14	Knowledge of events	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	Support	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16	Awareness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17	Knowledge of laws and rights	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18	Changing the negative attitudes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19	Correcting false beliefs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20	Use of hashtag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21	Global sites	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
22	Resources	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
23	Discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24	Guidance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25	Access	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
26	Alternatives	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
27	Realism and transparency	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
28	Creativity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
29	Innovation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
30	Lobbying to the government	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
31	Globalization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
32	Publishing	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗
33	Volunteering	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
34	Encouragement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
35	Negative attitudes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
36	Weak internet connection	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗
37	Misinformation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
38	No references	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
39	Fake Accounts	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
40	Translation problems	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
41	Naming "Mongolism"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
42	Weak update	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
43	Time consuming	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
44	Family problems	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
45	Health problems	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
46	Weak government involvement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
47	Negative electronic adv	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
48	Fame	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
49	Intruders	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50	Unethical competition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
51	Lack of safeguarding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
52	Issues around the parents	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
53	Freedom	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
54	Stigma	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
55	Reticence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
56	Policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
57	Religion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

/ = Mention ✗ = Nomenction

