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Measuring the Knowledge and Perception of Riyadh Residents Regarding the Presence of Health Educators in Schools

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Abstract

Background: Health educators play a crucial role in promoting student well-being and fostering healthy behaviors. Despite increasing health concerns among adolescents in Saudi Arabia, such as obesity and mental health disorders, public perceptions of health educators in schools remain underexplored.

Objectives: This study assesses Riyadh residents' knowledge, perceptions, and support for integrating health educators into educational institutions.

Materials and Methods: A cross-sectional survey was conducted among 418 Riyadh residents aged 18 and older, using a convenience sampling approach. An electronic questionnaire measured demographic characteristics, perceived benefits, and opinions on the presence of health educators. Results Data were analyzed using descriptive statistics, t-tests, ANOVA, and regression analysisin SPSS.

Results: A majority (97%) supported the presence of health educators in schools, with health professionals rating their benefits higher (mean = 4.7) than non-health professionals (mean = 4.5, $p < 0.001$). Despite strong support, 78% of participantsreported never attending a school with a health educator, indicating a gap in educational infrastructure. Regression analysis showed a strong positive association ($B = 0.75 \pm 0.02$, $R^2 = 68.0\%$, $p < 0.001$) between perceived benefits and health educator presence, particularly among younger and highly educated participants.

Conclusion: These findings highlight the need for integrating health educators into Saudi schools, aligning with national health initiatives and Saudi Vision 2030. Policymakers should consider pilot programs and training opportunities to bridge the gap between community expectations and current educational practices.

Keywords: Health educators, public perception, Saudi Arabia, school health, student well-being

1. Introduction

1.1 Introduce the Problem

Ischemic heart disease, road traffic, and interpersonal violence rank as the top five mortality among adolescents in Saudi Arabia. (*Adolescent Mortality Ranking - Top 5 Causes (Country)*, 2025). Overweight and obesity prevalence among children and adolescents in Saudi Arabia are estimated to be around 11.2% and 9.5% respectively (AlEnazi et al., 2023). Notably, these causes are preventable through health education and promotion programs. Globally, only a few countries have had health promotion programs in schools (WHO, 2023). Health education at schools is of paramount importance and plays a pivotal role in improving children's well-being, adopting healthy behaviors, and enhancing quality of life. School health education significantly influences the community's well-being per se involving families in the efforts to promote healthy lifestyles, knowledge and practices (CDC, 2023). Health educators are an integral part of the school's health education services. Their main responsibilities primarily include promoting overall physical and mental well-being and enhancing academic success holistically. The health education activities include managing and updating students' health records, ensuring follow-up of students with chronic diseases, facilitating vaccination documentation and reporting, organizing annual hearing and vision screenings, infection prevention, and conducting health examinations and evaluations for students. In addition, health educators can help carry out health promotion initiatives and implement school health policies that aim to lower risk behavior and encourage healthy habits early in childhood that help young children grow with a positive

outlook, attain academic success, and enter into healthy adulthood (*Career Profiles: School Health Education | NCHEC*).

In this context, a study conducted among secondary school students in Buraidah, Saudi Arabia, on the topic of AIDS, involving a total of 483 participants, highlighted the importance of health promotion programs. The program led to a significant improvement in students' understanding of AIDS (Saleh et al., 1999). Furthermore, another study conducted in Riyadh, involving 1,279 students, examined the impact of health education on oral health problems. A pre-post test revealed significant score improvements after the health education session (Baseer et al., 2017). It should be evident that health education and promotion professionals in schools are necessary to help students adapt to a healthy lifestyle. This becomes extremely important in Riyadh as the student population in schools surpassed 1.2 million in 2023 (Saudi Press Agency, 2023). Additionally, it is worth mentioning that in a study conducted in Riyadh, the author emphasizes that more than two-thirds of health educators working in schools did not hold a bachelor's degree in health education or a health field, lacking the necessary skills to effectively conduct health promotion programs (Elsayed & Almohaithef, 2019). This should illustrate the urgent need for health education and promotion professionals and programs in school in order to help students improve their well-being, adopt healthy behaviors, and enhance the quality of their lives.

On the national level, a school-based screening programs in Saudi Arabia reported oral health issues, overweight and obesity, eye refractory errors, and behavioral disorders including hyperactivity and ADHD as the most common health issues among school children (Al Daajani et al., 2021). Specifically, Hypermetropia is a common childhood eye disease that is in Saudi Arabia (Darraj et al., 2016). Moreover, a study was conducted in the Eastern Province in 2020 on the issue of obesity and its complications in children; data were gathered from approximately 20,000 students of both genders. The study measured various variables such as BMI level, blood pressure, and more. The findings were surprising: more than 25% of school students are either overweight or obese. Surprisingly, around 35% of students have high blood pressure. The study suggests school interventions are urgent to address this crisis among students (Albaker et al., 2022). Another large study in urban school districts demonstrated that consistent health education programs such as Sexual Health Education (SHE) greatly boosted students' knowledge and promoted healthy behavioral changes (Rasberry et al., 2022). Furthermore, mental health issues among adolescents have been on the rise globally. A comprehensive study covering more than 150,000 adolescents in 33 European countries found that societal and economic changes, rather than educational expansion, were linked to increased academic stress among adolescents (Högberg, 2021). Moreover, it has been shown that adolescents' willingness to seek help is hindered by a lack of knowledge and stigma around mental illness. A study involving 221 high school students demonstrated that anti-stigma interventions led to reduced negative attitudes and enhanced help-seeking behaviors (Lanfredi et al., 2019). Another research by Murray et al. examining the association between teacher characteristics and student knowledge established that certified health teachers and dedicated classrooms for tailored one-to-one sessions were associated with greater student knowledge gains. In addition, positive outcomes were also demonstrated by middle school teachers who participated in at least three health education sessions (Murray et al., 2019). These statistics signify the importance of prioritizing health educators in schools to address mental health problems, unhealthy behaviors, and knowledge of healthy choices, and implement necessary interventions for better student health outcomes.

A systematic review and meta-analysis study conducted by (Jacob et al., 2021) highlights the effectiveness of school-based health education interventions, emphasizing the role of multi-component stakeholders, such as teachers and parents. These interventions have shown promising outcomes in reducing BMI z-scores among adolescents aged 5-19, underscoring the importance of engaging diverse stakeholders to promote adolescent health. Another study looking at the relationship between sleep duration, sleep consistency, and school readiness was explored in a U.S. study of 15,402 preschool children. The findings showed that children who sleep 7 hours or less have significant reductions in school readiness, with even milder effects in those with inconsistent sleep schedules (Jackson et al., 2021). An effective intervention in homes are parents who can mainly educate their children on health behavior. Furthermore, health intervention and strategies would be monitored by health educators and teachers in schools. Furthermore, in special schools for intellectually disabled students in Brazil, health promotion programs positively impacted oral health outcomes, with sociodemographic factors influencing results (Cristina Gaio et al., 2010).

To address these challenges, the Ministry of Health (MOH) in Saudi Arabia has launched a "Healthy Schools" program focusing on children in schools (Ministry of Health, 2025). Thus, understanding the perceptions of Riyadh residents is crucial for identifying the community's needs. To our knowledge, no studies have examined Riyadh's perception on this topic, which makes our research first to address this matter. Thus, by assessing the needs and opinions of Riyadh residents regarding the significance of having health educators in schools, our study

seeks to answer the following questions: (i) What is the level of knowledge and perception among Riyadh residents regarding the presence of health educators in schools, and (ii) What are the perceived benefits of having health educators in schools? Policymakers may find the results useful in redesigning and implementing suitable school health education initiatives with a potential for greater community involvement and outreach.

2. Method

2.1 Research Design

To achieve the objectives of the study, a cross-sectional study design was used utilizing convenience sampling. This study started in November 2024 and lasted for one month in The Kingdom of Saudi Arabia, Riyadh.

2.2 Study Population and Sample Size

The study targeted residents of the Riyadh region aged 18 years and older, encompassing individuals with various educational backgrounds, including those holding a Secondary (high school) degree, Bachelor's, Master's, or PhD. A total of 421 participants were initially recruited for the study. However, after excluding three responses due to lack of consent, the final sample size consisted of 418 participants.

2.3 Research Tools, Instrument and Data Collection

A structured electronic questionnaire was developed to assess Riyadh residents' knowledge, perceptions, and attitudes toward the presence of health educators in schools. The instrument was self-developed and designed based on an extensive literature review and expert input to ensure content validity. It consisted of three sections. The first section collected personal characteristics such as gender, age, marital status, educational level, and occupation. The second section measured the perceived educational and health benefits of having a health educator in schools and comprised ten questions using a five-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree). The third section gauged Riyadh residents' opinions on the presence of a health educator in schools, consisting of ten questions using the same five-point Likert scale.

The questionnaire was distributed online via social media platforms such as Snapchat, X (formerly Twitter), and Telegram. Riyadh was chosen as the study location due to its status as the capital and most densely populated city in Saudi Arabia. To enhance representativeness, the city was divided into five regions: north, south, west, east, and central. The questionnaire also aimed to measure participants' knowledge about health educators and their perceived importance in schools.

2.4 Cronbach's Alpha

A pilot test was conducted with 25 residents of Riyadh. Then, the Cronbach's alpha coefficient calculated using JMP software, resulting with 0.86, indicating good internal consistency of the questionnaire. After that, the instrument was distributed to the target population.

2.5 Data Management and Analysis

Data analysis was performed using SPSS (Statistical Package for Social Science). Descriptive statistics were calculated for all three sections of the questionnaire. Inferential analyses included T-test and ANOVA to examine the association between (i) the perceived educational and health benefits of health educators in schools and demographic variables (personal questions, age and gender) (ii) The understanding and desire for health educators in schools and demographic variables personal questions, age and gender). Regression analysis to explore the relationship between the perceived educational and health benefits of health educators and the understanding and desire for their presence in schools.

2.6 Inclusion and Exclusion Criteria

The inclusion criteria for this study required participants to be residents of the Riyadh region and aged 18 years or older. Additionally, participants needed to provide informed consent to participate in the study and complete the questionnaire. Conversely, the exclusion criteria specified that individuals under 18 years of age were not eligible to participate. Furthermore, any responses from participants who did not agree to provide consent were excluded from the analysis. Initially, 421 participants were recruited; however, after applying these criteria, the final sample size was adjusted to 418 participants.

2.7 Ethical Consideration

Approval for the study was provided by the Institutional Review Board (IRB: 25-488) at King Saud University. Participants provided informed consent via the online questionnaire, which detailed the study's aims and objectives. Participation was voluntary, no names, emails, phone numbers or personal questions were asked. Participants were informed of their right to withdraw. A means of communication with the researchers was

provided. Participant information was kept confidential, and questionnaires were anonymized and numerically encoded to ensure privacy.

2.8 Statistical Methods

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 27.0. The perceived benefits of health educators and their presence in schools were quantified by calculating the mean responses for individual items on the questionnaire. To assess significant differences in the scores across various demographic groups, independent sample t-tests and Analysis of Variance (ANOVA) were employed. Additionally, the Mantel-Haenszel Test for Linear Trend was utilized to evaluate differences in responses for individual questionnaire items. To further explore the relationship between the perceived benefits of health educators and their presence in schools, linear regression analysis was performed. A significance level of $P < 0.05$ was established for all statistical tests, indicating that results with a P-value below this threshold were considered statistically significant.

3. Results

Table 1 provides a comprehensive overview of the perceived benefits of health educators and their presence in schools, measured through a 5-point Likert scale, where higher scores indicate stronger agreement with the benefits and presence of health educators. The demographic breakdown shows that the majority of respondents are aged 18-25 (72.9%), with a consistent mean score of 4.6 ± 0.5 across all age groups. This trend continues across gender, with both females (61.4%) and males (38.6%) reporting similar mean scores of 4.6 ± 0.5. The housing area in Riyadh shows a diverse representation, yet all regions report a mean score of 4.6 ± 0.5 for perceived benefits. Occupational status reveals that students, who constitute 57.8% of the sample, also rate the perceived benefits highly at 4.6 ± 0.5, while those identifying as both students and employees report a slightly higher mean of 4.7 ± 0.6. Educational attainment shows that respondents with a bachelor's degree (64.5%) maintain a mean score of 4.6 ± 0.5, while those with secondary education report a slightly lower mean of 4.5 ± 0.5. Income levels do not appear to significantly affect perceptions, as all income brackets report similar mean scores of 4.6 ± 0.5. Interestingly, the data indicates a significant difference in perceived benefits based on whether respondents are health professionals, with non-health professionals scoring 4.5 ± 0.5 compared to health professionals at 4.7 ± 0.4. The presence of health educators in schools also shows high mean scores across demographics, with no significant differences indicated by P-values above 0.05, except for the belief regarding the most affected educational stage, where primary education received a mean score of 4.5 ± 0.5, and secondary education slightly lower at 4.4 ± 0.6.

Table 1. Perceived Benefits of Health Educator and Presence of Health Educator in schools according to Demographic (N=418)

Demographics	n (%)	Perceived Benefit of Health Educator		Presence of Health Educator	
		Mean ± SD	(Test Statistics) P-value	Mean ± SD	(Test Statistics) P-value
Age (Years)					
18-25	304(72.9)	4.6 ± 0.5		4.5 ± 0.6	
26-35	67(16.1)	4.6 ± 0.5	(F= 0.230)	4.5 ± 0.5	(F =0.212)
36-45	31(7.4)	4.6 ± 0.4	0.876	4.4 ± 0.4	0.888
46 +	15(3.6)	4.6 ± 0.3		4.6 ± 0.4	
Gender					
Female	256(61.4)	4.6 ± 0.5	(T =-0.760)	4.5 ± 0.5	(T =-0.416)
Male	161(38.6)	4.6 ± 0.5	0.448	4.5 ± 0.6	0.677
Housing Area in Riyadh					
North	102(24.5)	4.6 ± 0.5		4.5 ± 0.6	
South	41(9.8)	4.6 ± 0.5	(F =0.013)	4.5 ± 0.6	(F =0.787)
East	170(40.8)	4.6 ± 0.5	1.000	4.5 ± 0.5	0.534
West	66(15.8)	4.6 ± 0.5		4.5 ± 0.6	
Central	38(9.1)	4.6 ± 0.5		4.6 ± 0.4	

Occupational Status					
Student	241(57.8)	4.6 ± 0.5		4.5 ± 0.6	
Employee	69(16.5)	4.6 ± 0.4	(F =0.932)	4.5 ± 0.5	(F =0.790)
Student and Employee	16(3.8)	4.7 ± 0.6	0.425	4.7 ± 0.6	0.500
Non-Employee	91(21.8)	4.6 ± 0.5		4.5 ± 0.5	
Education					
Secondary	127(30.5)	4.5 ± 0.5		4.5 ± 0.5	
Bachelor	269(64.5)	4.6 ± 0.5	(F =1.178)	4.5 ± 0.5	(F =0.141)
Masters	13(3.1)	4.6 ± 0.5	0.318	4.4 ± 0.5	0.936
Phd	8(1.9)	4.4 ± 0.8		4.6 ± 0.7	
Income					
Low	84(20.1)	4.6 ± 0.5	(F =0.151)	4.5 ± 0.5	(F =0.425)
Middle	293(70.3)	4.6 ± 0.5	0.860	4.5 ± 0.5	0.654
High	40(9.6)	4.6 ± 0.6		4.5 ± 0.6	
Are you a teacher?					
No	393(94.2)	4.6 ± 0.5	(T =0.917)	4.5 ± 0.5	(T =-0.138)
Yes	24(5.8)	4.7 ± 0.4	0.360	4.5 ± 0.5	0.890
Are you a Health Professional?					
No	274(65.7)	4.5 ± 0.5	(T =3.939)	4.5 ± 0.5	(T =2.599)
Yes	143(34.3)	4.7 ± 0.4	<0.001	4.6 ± 0.5	0.010
Are you working in the Health Sector?					
No	304(72.9)	4.6 ± 0.5	(T =1.406)	4.5 ± 0.5	(T =0.537)
Yes	113(27.1)	4.6 ± 0.5	0.161	4.5 ± 0.5	0.591
Have you worked or studied in a school with a health educator?					
No	325(77.9)	4.6 ± 0.5	(T =0.200)	4.5 ± 0.5	(T =0.139)
Yes	92(22.1)	4.6 ± 0.5	0.842	4.5 ± 0.6	0.890
In your belief, what is the most affected stage of the presence of the health educator in the school					
Primary	199 (47.7)	4.6 ± 0.5	(F =1.863)	4.5 ± 0.5	(F =3.668)
Secondary	61 (14.6)	4.5 ± 0.5	0.157	4.4 ± 0.6	0.026
Middle	157 (37.6)	4.6 ± 0.4		4.6 ± 0.5	

Note. Data presented as N(%) and Mean ± SD; P-values are obtained by independent sample t-test and Analysis of Variance (ANOVA); P<0.05 considered significant.

Table 2 presents the results of a regression analysis examining the relationship between the perceived benefits of health educators and their presence/impotance across various demographic groups. The overall regression model shows a strong positive relationship, with a regression coefficient (B) of 0.75 ± 0.02 and an R-square of 68.0%, indicating that the presence of health educators explains a significant portion of the variance in perceived benefits. The regression coefficient is higher for young adults (0.76 ± 0.03, R-square = 69.7%) compared to older adults (0.68 ± 0.10, R-square = 53.5%), suggesting that younger individuals perceive a stronger relationship between the presence of health educators and their benefits. Both females (0.74 ± 0.03, R-square = 66.5%) and males (0.76 ± 0.04, R-square = 70.7%) show a similar positive relationship, indicating that gender does not significantly influence the perceived benefits-presence association. Interestingly, individuals who are both students and employees report the strongest relationship (0.97 ± 0.11, R-square = 84.0%). Higher levels of education, such as master's (0.87 ± 0.13, R-square = 81.5%) and doctoral (0.90 ± 0.22, R-square = 72.8%) degrees, are associated with a stronger perceived benefits-presence relationship compared to secondary (0.80 ± 0.05, R-square = 67.1%) and bachelor's (0.72 ± 0.03, R-square = 69.3%) degrees. Respondents with low (0.82 ± 0.06, R-square = 72.8%)

and high (0.81 ± 0.08, R-square = 73.9%) income levels show a stronger relationship compared to those with middle-income (0.72 ± 0.03, R-square = 66.3%).Notably, the regression analysis also reveals that individuals who are not teachers (0.76 ± 0.03, R-square = 69.0%) or health professionals (0.78 ± 0.03, R-square = 68.3%) perceive a stronger relationship between the presence of health educators and their benefits, compared to those who are teachers (0.60 ± 0.10, R-square = 60.5%) or health professionals (0.65 ± 0.04, R-square = 68.6%).

Table 2. Relationship between Perceived Educational and Health Benefits and Presence of Educational health professional

Demographics	B ± SE	Pearson Correlation	R-Square	P-value
Overall	0.75 ± 0.02	0.82	68.00%	<0.001
Age (Years)				
Young Adults	0.76 ± 0.03	0.83	69.70%	<0.001
Older Adults	0.68 ± 0.10	0.73	53.50%	<0.001
Gender				
Female	0.74 ± 0.03	0.82	66.50%	<0.001
Male	0.76 ± 0.04	0.84	70.70%	<0.001
Occupational Status				
Student	0.76 ± 0.03	0.84	70.00%	<0.001
Employee	0.70 ± 0.06	0.83	69.20%	<0.001
Student and Employee	0.97 ± 0.11	0.92	84.00%	<0.001
Non-Employee	0.71 ± 0.06	0.78	60.70%	<0.001
Education				
Secondary	0.80 ± 0.05	0.82	67.10%	<0.001
Bachelor	0.72 ± 0.03	0.83	69.30%	<0.001
Masters	0.87 ± 0.13	0.90	81.50%	<0.001
Phd	0.90 ± 0.22	0.85	72.80%	0.007
Income				
Low	0.82 ± 0.06	0.85	72.80%	<0.001
Middle	0.72 ± 0.03	0.81	66.30%	<0.001
High	0.81 ± 0.08	0.86	73.90%	<0.001
Are you a teacher?				
No	0.76 ± 0.03	0.83	69.00%	<0.001
Yes	0.60 ± 0.10	0.78	60.50%	<0.001
Are you a Health Professional?				
No	0.78 ± 0.03	0.83	68.30%	<0.001
Yes	0.65 ± 0.04	0.83	68.60%	<0.001
Are you working in the Health Sector?				
No	0.76 ± 0.03	0.83	68.60%	<0.001
Yes	0.72 ± 0.05	0.83	68.30%	<0.001
Have you worked o rstudied in a school with a health educator?				
No	0.77 ± 0.03	0.83	69.00%	<0.001
Yes	0.68 ± 0.05	0.82	66.90%	<0.001

In your belief, what is the most affected stage of the presence of the health educator in the school				
Primary	0.73 ± 0.04	0.82	67.60%	<0.001
Secondary	0.77 ± 0.05	0.88	77.90%	<0.001
Middle	0.78 ± 0.05	0.80	64.30%	<0.001

Note. Data presented as Beta ± SE and R-square; P-values obtained from linear regression analysis; P< 0.05 considered significant.

Table 3. Perceived Health and Educational Benefits Individual Components according to Age and Gender

Questions	All	Age Group			Gender		
		Young Adults (18-35 Years)	Older Adults (36 Years or older)	P-value	Female	Male	P-value
Q1. Do you think the health educator is important in the educational aspects of students							
Highly Agree	336 (80.6)	302 (81.4)	34 (73.9)		208 (81.3)	128 (79.5)	
Agree	68 (16.3)	56 (15.1)	12 (26.1)		44 (17.2)	24 (14.9)	
Neutral	11 (2.6)	11 (3.0)	0 (0.0)	0.765	3 (1.2)	8 (5.0)	0.215
Disagree	1 (0.2)	1 (0.3)	0 (0.0)		1 (0.4)	0 (0.0)	
Highly Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	
Q2. Is it possible that the health educator focuses positively on the quality of the health status of school students							
Highly Agree	305 (73.1)	276 (74.4)	29 (63.0)		188 (73.4)	117 (72.7)	
Agree	98 (23.5)	81 (21.8)	17 (37.0)		63 (24.6)	35 (21.7)	
Neutral	13 (3.1)	13 (3.5)	0 (0.0)	0.468	5 (2.0)	8 (5.0)	0.400
Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	
Highly Disagree	0 (0.0)	0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)	
Q3. Is the presence of the health educator help improve the health condition of students with chronic diseases?							
Highly Agree	307 (73.6)	279 (75.2)	28 (60.9)		193 (75.4)	114 (70.8)	
Agree	92 (22.1)	75 (20.2)	17 (37.0)		57 (22.3)	35 (21.7)	
Neutral	16 (3.8)	15 (4.0)	1 (2.2)	0.223	6 (2.3)	10 (6.2)	0.056
Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	
Highly Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	
Q4. Is the presence of the health educator enough to modify the bad and acquired pattern among school students?							
Highly Agree	256 (61.4)	227 (61.2)	29 (63.0)		153 (59.8)	103 (64.0)	
Agree	110 (26.4)	95 (25.6)	15 (32.6)		71 (27.7)	39 (24.2)	
Neutral	38 (9.1)	37 (10.0)	1 (2.2)	0.341	26 (10.2)	12 (7.5)	0.902
Disagree	10 (2.4)	9 (2.4)	1 (2.2)		6 (2.3)	4 (2.5)	
Highly Disagree	3 (0.7)	3 (0.8)	0 (0.0)		0 (0.0)	3 (1.9)	
Q5. Does the presence of a health educator in the school help improve healthy patterns in the nutritional aspect?							
Highly Agree	270 (64.7)	239 (64.4)	31 (67.4)		171 (66.8)	99 (61.5)	
Agree	112 (26.9)	99 (26.7)	13 (28.3)		66 (25.8)	46 (28.6)	
Neutral	28 (6.7)	26 (7.0)	2 (4.3)	0.434	17 (6.6)	11 (6.8)	0.149
Disagree	7 (1.7)	7 (1.9)	0 (0.0)		2 (0.8)	5 (3.1)	
Highly Disagree	0 (0.0)	0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)	

Q6. Does the presence of a health educator in the school help improve the quality of eating in the places designated in the school?							
Highly Agree	286 (68.6)	255 (68.7)	31 (67.4)		173 (67.6)	113 (70.2)	
Agree	93 (22.3)	80 (21.6)	13 (28.3)		60 (23.4)	33 (20.5)	
Neutral	32 (7.7)	30 (8.1)	2 (4.3)	0.593	21 (8.2)	11 (6.8)	0.944
Disagree	4 (1.0)	4 (1.1)	0 (0.0)		2 (0.8)	2 (1.2)	
Highly Disagree	2 (0.5)	2 (0.5)	0 (0.0)		0 (0.0)	2 (1.2)	
Q7. Does the presence of a health educator increase the level of psychological awareness among students							
Highly Agree	285 (68.3)	256 (69.0)	29 (63.0)		179 (69.9)	106 (65.8)	
Agree	93 (22.3)	78 (21.0)	15 (32.6)		50 (19.5)	43 (26.7)	
Neutral	32 (7.7)	30 (8.1)	2 (4.3)	0.916	25 (9.8)	7 (4.3)	0.497
Disagree	4 (1.0)	4 (1.1)	0 (0.0)		2 (0.8)	2 (1.2)	
Highly Disagree	3 (0.7)	3 (0.8)	0 (0.0)		0 (0.0)	3 (1.9)	
Q8. Does the presence of a health educator reduce the level of smoking effect on students							
Highly Agree	254 (60.9)	226 (60.9)	28 (60.9)		150 (58.6)	104 (64.6)	
Agree	103 (24.7)	91 (24.5)	12 (26.1)		67 (26.2)	36 (22.4)	
Neutral	45 (10.8)	39 (10.5)	6 (13.0)	0.711	29 (11.3)	16 (9.9)	0.310
Disagree	13 (3.1)	13 (3.5)	0 (0.0)		9 (3.5)	4 (2.5)	
Highly Disagree	2 (0.5)	2 (0.5)	0 (0.0)		1 (0.4)	1 (0.6)	
Q9. Does the presence of a health educator contribute to adopting healthy behaviors for teachers							
Highly Agree	255 (61.2)	232 (62.5)	23 (50.0)		155 (60.5)	100 (62.1)	
Agree	113 (27.1)	92 (24.8)	21 (45.7)		74 (28.9)	39 (24.2)	
Neutral	34 (8.2)	32 (8.6)	2 (4.3)	1.000	21 (8.2)	13 (8.1)	0.577
Disagree	13 (3.1)	13 (3.5)	0 (0.0)		5 (2.0)	8 (5.0)	
Highly Disagree	2 (0.5)	2 (0.5)	0 (0.0)		1 (0.4)	1 (0.6)	
Q10. Does the presence of a health educator in schools may contribute to preserving a healthy and healthy study environment							
Highly Agree	281 (67.4)	251 (67.7)	30 (65.2)		170 (66.4)	111 (68.9)	
Agree	100 (24.0)	88 (23.7)	12 (26.1)		67 (26.2)	33 (20.5)	
Neutral	34 (8.2)	31 (8.4)	3 (6.5)	0.727	19 (7.4)	15 (9.3)	0.765
Disagree	1 (0.2)	0 (0.0)	1 (2.2)		0 (0.0)	1 (0.6)	
Highly Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	

Note. Data presented as N(%). P-values obtained by Mantel Hazel test of linear by linear association.

Table 4. Benefits of having Health educator individual components according to age and gender

Questions	All	Age Group			Gender		
		Young Adults (18-35 Years)	Older Adults (36 Years or older)	P-value	Female	Male	P-value
Q1. Does the presence of a health educator contribute positively to the development of the access of the information among students							
Highly Agree	232 (55.6)	212 (57.1)	20 (43.5)		145 (56.6)	87 (54.0)	
Agree	114 (27.3)	97 (26.1)	17 (37.0)		73 (28.5)	41 (25.5)	
Neutral	53 (12.7)	47 (12.7)	6 (13.0)	0.177	29 (11.3)	24 (14.9)	0.224
Disagree	17 (4.1)	14 (3.8)	3 (6.5)		9 (3.5)	8 (5.0)	
Highly Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	
Q2. Do you prefer the presence of a health educator in the school?							
Highly Agree	342 (82.0)	306 (82.5)	36 (78.3)		209 (81.6)	133 (82.6)	
Agree	61 (14.6)	52 (14.0)	9 (19.6)		43 (16.8)	18 (11.2)	
Neutral	12 (2.9)	11 (3.0)	1 (2.2)	0.879	4 (1.6)	8 (5.0)	0.374
Disagree	2 (0.5)	2 (0.5)	0 (0.0)		0 (0.0)	2 (1.2)	
Highly Disagree	0 (0.0)	0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)	
Q3. Do you think it is important to have a health educator in schools							
Highly Agree	336 (80.6)	302 (81.4)	34 (73.9)		208 (81.3)	128 (79.5)	
Agree	58 (13.9)	48 (12.9)	10 (21.7)		38 (14.8)	20 (12.4)	
Neutral	18 (4.3)	16 (4.3)	2 (4.3)	0.700	8 (3.1)	10 (6.2)	0.215
Disagree	4 (1.0)	4 (1.1)	0 (0.0)		2 (0.8)	2 (1.2)	
Highly Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	
Q4. Do you think the health educator may be an assistant element for teachers in adopting healthy behaviors							
Highly Agree	287 (68.8)	257 (69.3)	30 (65.2)		177 (69.1)	110 (68.3)	
Agree	99 (23.7)	83 (22.4)	16 (34.8)		60 (23.4)	39 (24.2)	
Neutral	21 (5.0)	21 (5.7)	0 (0.0)	0.583	16 (6.3)	5 (3.1)	0.525
Disagree	9 (2.2)	9 (2.4)	0 (0.0)		3 (1.2)	6 (3.7)	
Highly Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	
Q5. Do you think that the health educator may reduce the percentage of obesity for students							
Highly Agree	236 (56.6)	209 (56.3)	27 (58.7)		137 (53.5)	99 (61.5)	
Agree	105 (25.2)	92 (24.8)	13 (28.3)		71 (27.7)	34 (21.1)	
Neutral	57 (13.7)	51 (13.7)	6 (13.0)	0.339	37 (14.5)	20 (12.4)	0.432
Disagree	17 (4.1)	17 (4.6)	0 (0.0)		11 (4.3)	6 (3.7)	
Highly Disagree	2 (0.5)	2 (0.5)	0 (0.0)		0 (0.0)	2 (1.2)	
Q6. Do you think that the health educator is able to cooperate with parents as an auxiliary element to adopt students healthy behaviors							
Highly Agree	265 (63.5)	242 (65.2)	23 (50.0)		157 (61.3)	108 (67.1)	
Agree	113 (27.1)	92 (24.8)	21 (45.7)		79 (30.9)	34 (21.1)	
Neutral	32 (7.7)	31 (8.4)	1 (2.2)	0.494	20 (7.8)	12 (7.5)	0.631
Disagree	5 (1.2)	4 (1.1)	1 (2.2)		0 (0.0)	5 (3.1)	
Highly Disagree	2 (0.5)	2 (0.5)	0 (0.0)		0 (0.0)	2 (1.2)	

Q7. Do you think that the health educator is able to protect students from the risks in schools							
Highly Agree	239 (57.3)	214 (57.7)	25 (54.3)		141 (55.1)	98 (60.9)	
Agree	111 (26.6)	94 (25.3)	17 (37.0)		70 (27.3)	41 (25.5)	
Neutral	55 (13.2)	51 (13.7)	4 (8.7)	0.524	38 (14.8)	17 (10.6)	0.318
Disagree	8 (1.9)	8 (2.2)	0 (0.0)		5 (2.0)	3 (1.9)	
Highly Disagree	4 (1.0)	4 (1.1)	0 (0.0)		2 (0.8)	2 (1.2)	
Q8. Do you think that the health educator is able to help teachers avoid working risks at school							
Highly Agree	215 (51.6)	196 (52.8)	19 (41.3)		131 (51.2)	84 (52.2)	
Agree	109 (26.1)	91 (24.5)	18 (39.1)		72 (28.1)	37 (23.0)	
Neutral	70 (16.8)	62 (16.7)	8 (17.4)	0.743	39 (15.2)	31 (19.3)	0.634
Disagree	19 (4.6)	19 (5.1)	0 (0.0)		13 (5.1)	6 (3.7)	
Highly Disagree	4 (1.0)	3 (0.8)	1 (2.2)		1 (0.4)	3 (1.9)	
Q9. Do you think that the health educator may help reduce injuries during first aid in schools							
Highly Agree	279 (66.9)	251 (67.7)	28 (60.9)		171 (66.8)	108 (67.1)	
Agree	103 (24.7)	88 (23.7)	15 (32.6)		65 (25.4)	38 (23.6)	
Neutral	27 (6.5)	25 (6.7)	2 (4.3)	0.746	18 (7.0)	9 (5.6)	0.487
Disagree	6 (1.4)	5 (1.3)	1 (2.2)		2 (0.8)	4 (2.5)	
Highly Disagree	2 (0.5)	2 (0.5)	0 (0.0)		0 (0.0)	2 (1.2)	
Q10. Do you prefer that there are permanent reviews for students through the health educator in schools							
Highly Agree	286 (68.6)	258 (69.5)	28 (60.9)		171 (66.8)	115 (71.4)	
Agree	102 (24.5)	86 (23.2)	16 (34.8)		66 (25.8)	36 (22.4)	
Neutral	23 (5.5)	21 (5.7)	2 (4.3)	0.727	17 (6.6)	6 (3.7)	0.655
Disagree	5 (1.2)	5 (1.3)	0 (0.0)		2 (0.8)	3 (1.9)	
Highly Disagree	1 (0.2)	1 (0.3)	0 (0.0)		0 (0.0)	1 (0.6)	

Note. Data presented as N(%). P-values obtained by Mantel Hazel test of linear by linear association.

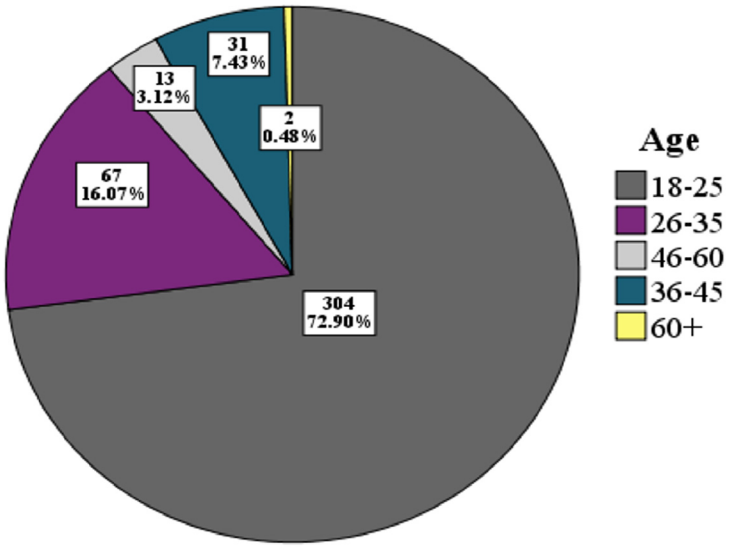

Figure 1. Illustration of the age distribution among the respondents

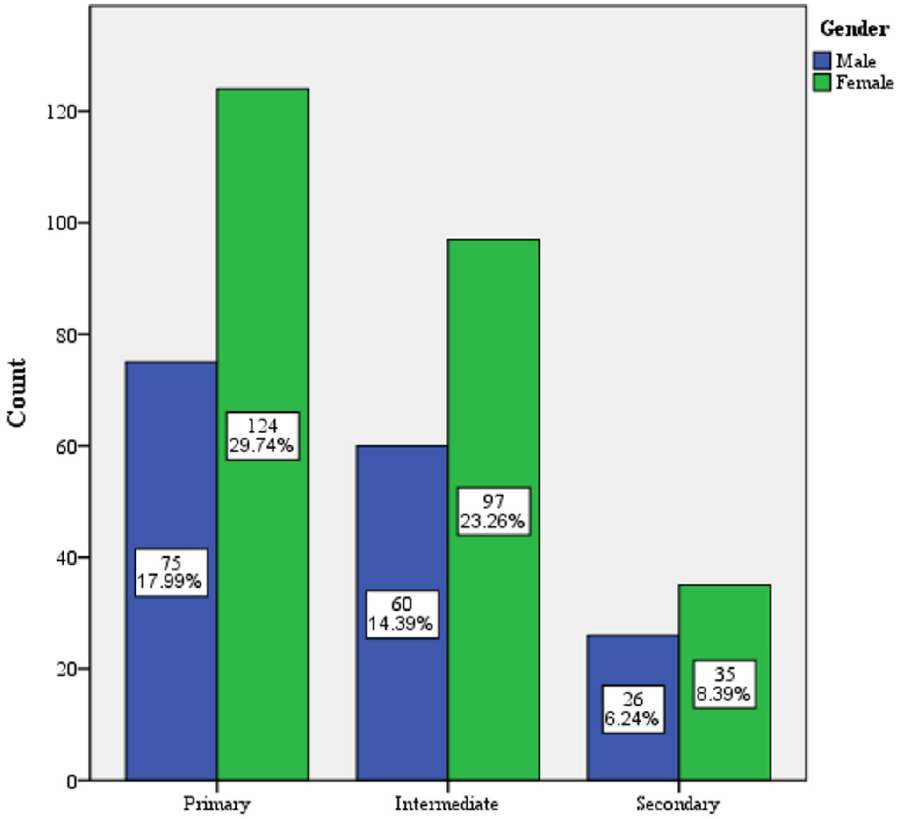

Figure 2. The distribution of participants' preferences on the school's levels based on gender

4. Discussion

This study explored Riyadh residents' perceptions and knowledge of the importance of having health educators in schools. The study included 418 participants, and a significant finding presented in Table 4 indicates that approximately 97% of participants preferred the presence of health educators in schools. Table 1 demonstrates that perceptions of health educators' benefits and presence in schools are generally consistent across most demographic groups, with mean scores around 4.6, indicating an agreement on their importance. Significant differences, however, were observed among health professionals, who rated the benefits mean of 4.7 and presence 4.6 of health educators higher than non-health professionals 4.5. This disparity may reflect health professionals' deeper understanding of the impact of health educators compared to non health-professionals. Additionally, perceptions of the most impacted educational stages varied, with primary and middle schools receiving higher ratings compared to secondary (high) schools. This could be attributed to the idea that equipping students with health knowledge at an early age increases the likelihood of them maintaining better health in the future. However, it is noteworthy that 78% of participants reported never having attended a school with health educators, underscoring the importance of engaging health educators into schools, as the majority of participants recognized their value. This could be due to the historical shortage availability of health educators in Saudi Arabia, whereas the current focus has shifted towards improving public and community health in Saudi Arabia. Additionally, 83% of respondents agreed that health education contributes positively to enhancing students' access to health-related information. This is consistent with the findings of Wang et al., who reported that health education enhances students' knowledge and influences their behaviors regarding Communicable Diseases (Wang et al., 2018). Likewise, participants from secondary schools exhibited heightened awareness and knowledge following the implementation of educational sessions within their schools regarding human papillomavirus (HPV) (Almatrafi et al., 2024). These school-based educational programs are expected to further enhance students' understanding and awareness over time, potentially leading to a reduction in communicable and lifestyle-related diseases, ultimately, such initiatives could contribute to increasing the life expectancy of Saudi citizens. Another study emphasized the significance of adding health education into school curricula, including physical and nutritional education, with the ultimate goal of addressing and reducing obesity and related health issues (Mun, 2024)

The Findings in Table 2 demonstrate a strong positive association between the presence of educational health

professionals and perceived educational and health benefits within a school setting. Several demographic factors were found to influence the perceived strength of this relationship. Younger adults and individuals with higher educational attainment (Master's and Ph.D. degrees) demonstrated a stronger perceived association between the presence of health educators and the benefits derived from their services, likely due to their greater awareness and receptiveness to health education's impact. Interestingly, individuals with low and high incomes reported a stronger perceived relationship compared to those with middle incomes. The analysis also revealed that individuals who are neither teachers nor health professionals perceived a stronger relationship between the presence of health educators and the benefits they provide. This may suggest that the general public, compared to those directly involved in the education system, has a heightened awareness of the potential value of health education programs. Respondents perceive secondary (high) schools as the most impacted stage (R-Square: 77.9%), showing that health educators are perhaps seen as particularly valuable during adolescence when students face more complex health and lifestyle challenges. This is consistent with the findings of Nagy-Pénzes et al., who reported that secondary school students were more receptive to and understanding of health promotion efforts aimed at improving physical activity, addressing unhealthy eating habits, and other related behaviors (Nagy-Pénzes et al., 2022). However, that does not indicate health education is less valuable among younger students, it might show that high school students tend to be facing more physical/mental issues during that time. This paper on systematic review and meta-analysis concluded that school-based physical activity interventions can help lower anxiety levels, boost resilience, enhance overall well-being, and promote positive mental health among children and adolescents (Andermo et al., 2020). Moreover, this study supports the effectiveness of school-based health programs in enhancing dietary habits, mental well-being, and physical activity (Dabravolskaj et al., 2020; Dodd et al., 2022). School-based health education programs play a vital role in promoting healthier behaviors. For instance, research has shown that these programs help reduce substance abuse among adolescents through evidence-based prevention strategies (Momanyi, 2024) and effectively lower major cardiovascular disease (CVD) risk factors (Lionis et al., 1991), though their long-term impact requires further evaluation (Lionis et al., 1991). Additionally, a significant improvement in children's oral health knowledge (Halawany et al., 2018; Al Saffan et al., 2017) and have been effective in enhancing reproductive health knowledge and attitudes among female adolescents in schools (Tork & Al Hosis, 2015). These findings suggest that integrating health educators is not only a matter of public preference but also an evidence-based approach to improving student health, awareness and academic success.

Most importantly, health educators are pivotal in realizing the Kingdom's Vision 2030 goals, particularly through several initiatives aligned with the objectives of the Health Transformation and Quality of Life Programs (MOH, 2024). Health educators, when provided with the opportunity to promote healthy behaviors, can contribute to the creation of a vibrant society, one of Vision 2030's core themes. Also, their involvement in managing obesity, type 2 diabetes, and other non-communicable diseases directly addresses unhealthy behaviors prevalent among young students, aligning with national health objectives already in place. Furthermore, their role in early intervention lays the foundation for future generations to lead healthier lives, which supports the vision of a thriving economy and an ambitious nation. Our study provides valuable insights into the necessity of having health educators in schools. To our knowledge, this is the first paper to survey the residents of Riyadh about the significance of having health educators in schools. The research findings can assist stakeholders and decision-makers in considering the implementation of health education programs in schools.

4.1 Strengths & Limitations

A key limitation is the focus on Riyadh residents, limiting the generalizability to other regions in Saudi Arabia. Moreover, another limitation of this study is the use of convenience sampling, which restricted our sample to individuals with access to smartphones or social media platforms. Consequently, this sampling method contributed to over 70% of our participants being between the ages of 18 and 25 causing a demographic imbalance bias, as it predominantly attracted younger individuals who are more active on social media platforms. The results demonstrate the vital role of health educators in schools, with 95% of participants emphasizing their importance. Notably, the majority of respondents were from the younger generation, indicating growing awareness among youth. This research is one of the first in Riyadh to address this topic and garnered responses in a short timeframe, highlighting its relevance and importance to the community.

4.2 Recommendations

Our results underscore the need to integrate health educators into schools, as recommended in the introduction. Government agencies like the Ministry of Health, the Ministry of Education, the Public Health Authority, and the Health Holding Company should lead by co-planning and co-implementing policies or initiatives that support this

effort, leveraging health educators to address student health needs more effectively. As a tangible initiative, we propose the implementation of a pilot program to integrate health educators into a few chosen schools in Riyadh. This approach will enable policymakers to evaluate the program's impact and efficacy before expanding it nationwide. Furthermore, offering professional development opportunities for health educators will guarantee that they are adequately prepared to address the varied health issues confronting students, particularly those associated with non-communicable diseases, chronic diseases, and mental health. Moreover, future research should expand to other regions in Saudi Arabia to compare perceptions and gather more representative data. A larger, more diverse sample would improve the findings' applicability. Additionally, exploring how collaboration between health educators, teachers, and parents can optimize health outcomes is crucial. These recommendations should help students with their current health needs and support Vision 2030 goals as promoting long-term health would help the nation achieve its goal of developing a healthier and more productive youth and later adults.

5. Conclusion

This study provides evidence of the strong support among Riyadh residents for integrating health educators into schools. The overwhelming preference for health educators, with 97% of participants advocating for their presence, underscores a recognized need to address students' physical, mental, and social health through structured Health educational programs. Interestingly, despite this support, 78% of respondents reported never having attended a school with a health educator, revealing a critical gap between community expectations and the current educational infrastructure. Perceptions varied across educational stages, with primary and middle schools receiving higher ratings for the impact of health education. These findings align with existing literature emphasizing the importance of health education across all age groups, with specific benefits during the adolescent years. Regression analyses highlighted that younger adults and those with higher educational attainment perceived stronger benefits from the presence of health educators, reflecting greater awareness and receptivity to health promotion efforts. Health professionals also rated the benefits significantly higher, likely due to their deeper understanding of health-related issues and the potential impact of education on public health outcomes. The integration of health educators into schools aligns with Saudi Arabia's Vision 2030, supporting national objectives to promote healthier lifestyles and reduce the prevalence of non-communicable diseases. By addressing issues such as obesity, mental health challenges, and chronic diseases at an early stage, health educators can play a pivotal role in improving the overall well-being of students and, ultimately, the broader community.

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The data that support the findings of this study are available on request.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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