

# Changes in nursing students' perceptions of nursing as they progress through their education

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## Changes in nursing students' perceptions of nursing as they progress through their education

Nursing education has shifted from the biomedical approach towards using a human scientific model. At the same time, the traditional role of nurses has changed towards professionalism owing to the development of nursing science. The purpose of this longitudinal study was to examine Finnish nursing students' perceptions of nursing after 6, 18 and 30 months of education and at the end of the education programme. The sample consisted of 158 students selected by means of stratified sampling from six specialities in nursing. Data were collected with a questionnaire from 26 institutes. The summarized variables were based on factor analysis and analysed by one-way analysis of variance. The students had assimilated nursing as activity which promotes human health and well-being and is based on professionalism. The medical-technical model was not predominant at any phase of the education. The students of six specialities differed only slightly from each other. The students' development was congruent with the aims outlined in the curriculum.

*Keywords:* nurse education, development, curriculum reform, evaluation, follow-up

## INTRODUCTION

The competencies of health care personnel are based on their education and the knowledge it provides. The curriculum is a key factor which determines the values, aims, objectives, logic and subjects of education. A radical change in the Finnish health care education began when the curriculum was reformed at the national level in 1987. The planning was based on the logic of nursing science and the perspective on nursing care. The previously dominant medical model was replaced, at least as regards the curriculum objectives and the curriculum documents.

The purpose of this longitudinal study was to describe nursing students' views of nursing. Students of four specialities in nursing, public health nursing and midwifery made up the study population, and the differences between the six groups of students were also investigated.

This study gives evidence of outcomes of the reformed education. The findings help to orient them to current reforms of health care education, which have been under way in Finland in the 1990s in an effort to develop polytechnic education.

## DEVELOPMENT OF NURSING EDUCATION

Nursing has been an occupation with predominantly feminine characteristics, and it is still stereotypically identified with nurturing and caring roles, such as those of a wife and a mother. Nursing education in the past prepared nurses to think of themselves as the subordinate to physicians and as executors of doctors' orders. Performing procedures and tasks has been a more essential and prominent aspect of nursing than thinking, reflecting and problem-solving (Jacobs-Kramer *et al.* 1988, Hagell 1989, Meleis 1991

pp. 51–54). According to May *et al.* 1991, the public views of nursing underline more technical skills and less independent decision-making. Therefore, some students still enter nurse education with this image of nursing in mind.

Leaders and educators of nursing have been pioneers in developing nursing as a science. Nursing science is defined as the body of scientific knowledge that guides nursing practice. Nursing science has been undergoing a change now that a human science paradigm has been increasingly adopted (Hagell 1989, Abu-Saad 1993, Kenney 1995). While nursing has been developed as a profession, interest has focused on the quality of care and the professional activities of practitioners. Professional autonomy, accountability and a rational foundation for independent action are enhanced by knowledge used in practice (Moloney 1986 pp. 55–59, Aggleton *et al.* 1987, Chinn *et al.* 1987).

The goal of development is theory-based nursing. This means that multiple factors require attention, including educational systems (Jacobs-Kramer *et al.* 1988, Meleis 1991). According to Bevis (1989), the intentional shift towards a new paradigm in curricular revision and substantial changes in education are needed. The aims are to educate students to critically study nursing practice and to apply theoretical knowledge to understand the goals and the mission of nursing, the needs of people and ways of improving the quality of patient care. New views challenge the traditional aspects and methods of natural science and biomedical nursing (Meleis *et al.* 1988, Kenney 1995). The goal is to educate students to take responsibility for the improvement of health care services and to face the demands of complex and quickly occurring changes.

### Previous studies

Some cross-sectional studies and one qualitative follow-up study concerning the Finnish health care education have been conducted since the reform in 1987. The main interest has focused on students' development, including their qualifications and knowledge. A study accomplished using open-ended questions indicated that at the beginning of their education students conceived of nursing as a disease-oriented activity, but also applied to nursing attributes of a vocation or a calling (Pihlajamaa 1989). At the beginning of their education, students focused on the patient's physical needs and medical care, as shown by audiotaped discussions of medical-surgical nursing students in clinical settings (Kuokkanen 1991). Salanterä *et al.* 1992 conducted a longitudinal study of essays written by students at the beginning of their education, after 1 year's studies and at the end of the education. Promoting 'the good of the patient' was meaningful ever since the beginning of the education and increasingly later. However, the students described the patient in terms of a list of medical problems or diagnoses, and this approach persisted throughout the education.

The outcomes of reformed education were evaluated by means of a quantitative study, in which the study population consisted of nursing students from all over Finland. At the end of the education, the students assessed their professional competencies to be almost sufficient. On the other hand, they were not equally confident about their abilities and skills to perform tasks in nursing, which may reflect a task-oriented approach to nursing (Leino-Kilpi 1991). Mölsä (1993) also used questionnaires in data collection concerning self-assessment of the nursing students' competencies at the end of the education. The students assessed themselves as having better skills to take care of the patients' physical than psychological or social needs or problems. Salmio (1990) used essays to obtain qualitative data on students who were soon to qualify as medical-surgical nurses. The essays were related to a lesson in a clinical setting. The students described the patient primarily in terms of physical problems, diagnoses and diseases and nursing from the point of view of a medical model. Descriptions about nurses' independent activities were unclear. Only Himanen (1990) found out that, at the end of their studies, most nursing students perceived nursing as an independent profession, which is guided by the theoretical knowledge acquired during the education.

In spite of the educational differences, there are also similarities in the findings of the studies concerning health care education in several countries. The sample of the longitudinal study conducted by Olsson *et al.* (1991) consisted of Swedish students, who had done 2 years of nursing studies in secondary school before enrolling in a degree programme for qualification as a nurse. At the beginning of the studies, 52% of students, and at the end of the education, 65% of the students who had passed a general nursing examination had no clear or well-defined conceptions about the role of a professional nurse. A qualitative follow-up study by Pilhammar Anderson (1993) indicated that at the beginning of their education, Swedish nursing students had a diffuse image of what nursing involves. Their view of nursing was 'task-centred'. Nurses were seen as leaders and doing 'paper work', but also distributing medication. The assumptions concerning nursing remained unchanged throughout the education, and nursing students continued to perceive nursing in a very traditional way, not as scientifically grounded work.

Murray *et al.* (1990) studied the characteristics of students entering the first year of an undergraduate degree programme in nursing and nursing students taking a degree at a college of nursing in Northern Ireland. The most important reasons for choosing nursing were 'to help people' and 'to obtain job satisfaction'. Especially college students had a traditional image of an ideal nurse. Kiger (1993) found out that Scottish nursing students' images of nursing can be schematized as a view of adult medical-surgical nursing and features of working with or helping people. Furthermore, students perceive nursing to be more

than just a job, being rewarding and entailing a way to utilize one's personal resources. Features of professionalism were missing according to the findings of this qualitative follow-up study.

Kersten (1991) explored nursing students at the beginning of their first nursing course. The majority of students reported nursing to mean caring, including helping, giving care and comfort, nurturing and supporting. Caring and nurturance were high motivators for choosing nursing as a career. Nursing also means personal growth, focusing on illness or restoring health, professionalism and job security, but clearly less than caring. Day *et al.* (1995) examined the socialization of Canadian nursing students using a qualitative approach with interviews and open-ended questionnaires. Students entering nursing believed that helping others and showing concern were central in the profession of nursing. They also believed that people generally thought nurses to be less intelligent and subservient to the doctor. Students who viewed nursing as a technical profession tended not to change their perspective. In summary, the findings of the most studies suggest that the medical model is firm in students' preconceptions and perceptions of nursing and the nurse's role. The limitations of qualitative studies include data collection only in one or two institutes and small study groups.

## THE STUDY

### The aims of the study

The primary aim of this longitudinal study was to find out how Finnish nursing students' understanding of nursing develops during their education. Each speciality of nursing has its own framework and specialized body of knowledge. Therefore, another aim was to compare the possible differences between six groups of students. A further aim was to find out how students are oriented towards nursing at the end of their education. Therefore, the following research questions were addressed:

- 1 What kinds of perceptions of nursing do students of different specialities have, and how do their perceptions change during their education?
- 2 What kinds of orientations towards nursing do nursing students finishing their education have?

The dependent variables were the students' perceptions of nursing as manifested in their beliefs and opinions. The independent variables were the length of the education so far accomplished and the specialization chosen by the student. A longitudinal study is uniquely able to identify typical patterns of development, although the subjects may refuse to participate in repeated measurements, and the protocol is time-consuming (Cohen *et al.* 1994). In tutoring and when students reflect on their professional

development, understanding of students' orientations is useful.

### The sample

The students enrolled as the study population had begun their studies in January 1989. The reform in health care education at the national level had been carried out since August 1987, and the students were thus not pioneers of the new education system. They had previously completed senior secondary school. In the reformed curriculum of nursing education, the concepts, the logic and the subjects are defined from the perspective of nursing science. The health-illness-health continuum and totality-parts-totally continuum are mentioned as the main principles structuring the subjects matter to be studied. (Eriksson 1986). For 2 years, i.e. for four terms out of seven, the education is the same for all students. During the last three terms, the students specialize in medical-surgical nursing, psychiatric nursing, anaesthetic and operating room nursing, paediatric nursing, public health nursing or midwifery.

The number of the present study population was 1129 students in 26 health care institutes. From each of the six specialities, 50 students were selected by means of stratified sampling, although the number of students enrolled from the different specialities varied from 50 (students of paediatric nursing) to 380 (students of medical-surgical nursing). The sample ( $n=300$ ) accounted for 26% of the population. The first data collection was carried out after 6 months of education in August 1989, i.e. at the beginning of the second term. The other three data collections took place after 1 1/2, 2 1/2 and 3 1/2 years of education. The last was undertaken just before the students were leaving college in May 1992. The numbers of students are shown in Table 1.

There were many reasons for drop-outs, e.g. interruption of the studies because of pregnancy or not being present at the time of the data collection arranged by the institute. At every phase of data collection, a reminder letter was sent to those students who did not fill in the questionnaire. The final response rate at the last phase was 53% ( $n=158$ ).

The majority of students filled in the questionnaire four times, were female (94%), and were aged from 19 to 38 years (mean 23) at the time they first replied. More than half (56%) of the students had had no further education after their senior secondary school. Most of those who had done some studies after the secondary level had had lower level education in a health care (25%) or social work (5%) institutes. Many students (28%) had experiences of jobs in health care. In addition, some students had been taking care of children (15%) or elderly people (11%). Only 23% of the students had not worked in health or social care before enrolling in the programme that began in January 1989. The group of students who participated in every data collection did not differ in these respects from the students

**Table 1** The student groups in data collection from 1989 to 1992

	Number of students			
	In August 1989 (n)	In August 1990 (n)	In August 1991 (n)	In May 1992 (n)
Nursing specialities				
Medical-surgical nursing	49	43	33	28
Psychiatric nursing	49	39	35	29
Anaesthetic and operating room nursing	47	42	36	28
Paediatric nursing	43	33	24	18
Public health nursing	46	41	38	33
Midwifery	49	41	35	22
Total number	283	239	201	158

of the first study group in 1989 ( $n=283$ ), who accounted for 25% of the population.

### Data collection

The data collection for this study was done using a questionnaire, which included five areas of students' self-assessment and over 90 questions. The findings of this study were based on the items (25) addressing dimensions of nursing derived from the literature (e.g. Perry 1985, Scherobet 1987), including nursing science theorists' views of nursing. The qualifications of nurses defined in the curriculum were also analysed. Each item is a statement concerning nursing. The Likert-type scale of the instrument consists of five alternatives. When answering the questions, the students had to choose one alternative, depending on whether they considered the aspect expressed in the statement to be meaningful or essential in nursing to a very large extent, to a large extent, to some extent, to a small extent or almost not at all. The questionnaire was pretested by asking 26 nursing students in one institute to fill it in. One item concerning 'nursing as activity supporting a clients' self-care' was eliminated, because it was too obvious to the students and there was no variance.

The questionnaires were mailed to the contact persons in the health care institutes (26), where the students filled it in under supervision by their teachers. Consent for data collection was obtained from the National Board of Vocational Education and, at the local level, from the principals of the health care institutes. The students were informed about the study and the voluntariness of participation in data collection by a letter enclosed with the questionnaire and by the teacher who collected and returned the questionnaires in addressed envelopes.

### Data analysis

The students' responses on an ordinal scale were scored with 1 to 5 points for a item. The score 5 stands for the alternative 'to a very large extent' and the score 1 for the alternative 'almost not at all'. The statistical analyses were conducted using SPSS for Windows. Factor analysis was used to find out whether there were several aspects of nursing present. The items correlating with another item at 0.30 or more were chosen for analysis (Mishel 1989). The solutions of the factor analysis within each four data set were investigated, and they differed slightly with regard to some items. The final solution concerning the aspects of nursing was based on the last set of data. The best solution, where the loading on the factors varied from 0.34 to 0.77, consisted of three factors. They accounted for 50% of the total variances of the items. (Table 2.) Six factors had eigenvalues greater than 1.0, and four factors explained at least 5% of the variance of the items (total 56%).

The sum score of the individual students' responses to all items loaded on a factor was obtained and divided by the number of items. Before the calculations, the internal consistency of each summarized variable in each of the four data sets was tested using Cronbach's alpha coefficient, which was very good (0.80–0.90) or at least satisfactory (0.70–0.80) (DeVellis 1991). The alpha coefficient of the whole instrument varied from 0.82 to 0.90. The Lilliefors test carried out using the Kolmogorov-Smirnov statistic was used to decide whether the distributions of the summarized variables of six samples were normal. It is used when means and variances are not known, but must be estimated from the data (Sprent 1989). The variances of the summarized variables of each group were tested with the Levene test, which points out whether there are inequalities between the variances of these interval-level variables. The Levene test is less dependent on the assumptions of normality than most tests and is thus

**Table 2** Summarized variables based on factor analysis and their internal consistency

Factors and variances explained by factors	Statements in items: Nursing is	Item's loading on factor	Cronbach's alpha: data collected in 1989, 1990, 1991 and 1992			
Nursing as medical-technical activity (28%)	- performing technical tasks	0.77	0.75	0.83	0.85	0.88
	- curing diseases	0.75				
	- executing doctors' orders	0.75				
	- manual work	0.72				
	- activity based on traditions	0.69				
	- routine activity	0.68				
	- supporting medical care	0.66				
	- taking care of patient's physical needs	0.59				
	- relieving patient's condition	0.51				
	- curing the patient	0.49				
Nursing as promoting human well-being and health (15%)	- social services	0.42	0.82	0.86	0.82	0.84
	- preventing diseases	0.75				
	- taking care of patient's social needs	0.73				
	- promoting health	0.71				
	- taking care of patient's psychological needs	0.70				
	- rehabilitating activity	0.65				
	- supervising and teaching patient	0.61				
	- maintaining patient's health	0.57				
	- caring for one's fellow man	0.48				
	- activity requiring expertise in nursing	0.77				
Nursing as professional activity (7%)	- professional activity	0.74	0.68	0.72	0.75	0.76
	- activity based on scientific knowledge	0.70				
	- activity based on nurses' independent decisions	0.68				
	- creative, intellectual activity	0.53				
	- responsibility for other people	0.34				

particularly useful with analysis of variance. It is obtained by computing, for each case, the absolute difference from its cell mean and performing a one-way analysis of variance on these differences. (Norusis 1993) Based on these tests, it appeared justified to use parametric statistical methods in the further analyses. One-way analysis of variance was used to compare the differences in the summarized variables between the groups of students at the different phases of data collection and education.

Three summarized variables based on factor analysis were divided into two classes, where scores < 3.7 indicate that, on the whole, the student's perceptions of nursing are not more than to some extent parallel to the approach expressed by the factors. Scores > 3.7 indicate that the student's perceptions are at least to a large extent parallel to this approach. Three-dimensional cross-tabulation was used to find out how these two classes correlate and what combinations of student orientations there are. The relationships between the variables were tested with the chi-square test.

## FINDINGS

### Students' perceptions of nursing

At every phase of the education, the students emphasized human well-being and health promotion as aspects of nursing (Figure 1). Students of public health nursing were most confident of these objectives of nursing care. Students of psychiatric nursing underlined human well-being and health promotion less than the other students. Activities concerning health were very important, but taking care of a one's fellow humans, which is not purely professional activity, was also considered important. It is worth noticing that the item 'taking care of the patient's physical needs' did not load on this factor. No significant differences were found between the groups at any phase of education.

Apart from this traditional perception of nursing, the students conceived of nursing as a profession which is based on scientific knowledge and requires expertise in

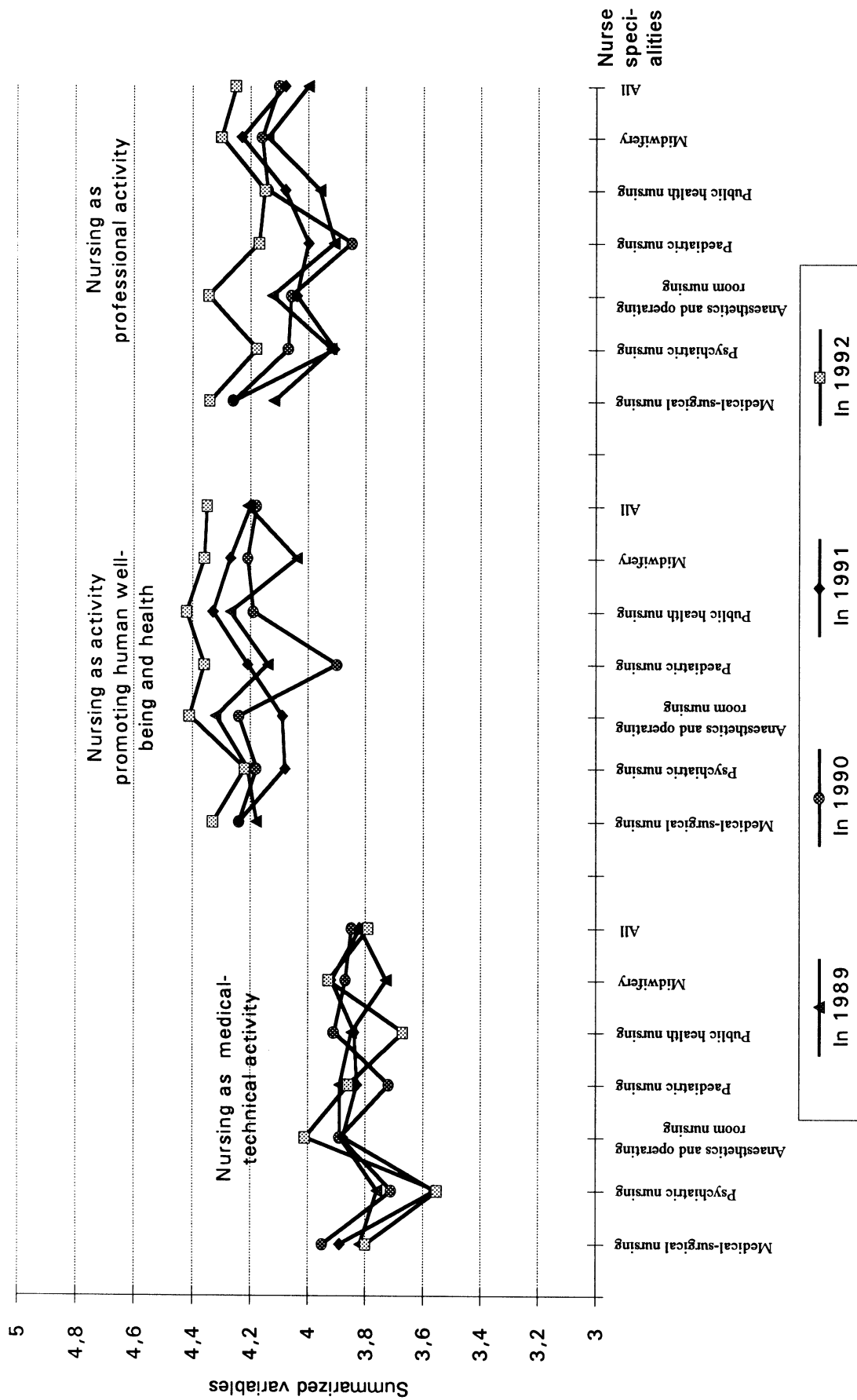


Figure 1 Nursing students' perceptions of nursing at four phases of their education.

nursing and responsibility. At each phase of the education, students of midwifery were most confident about professionalism in nursing. Students of medical-surgical nursing were another group emphasizing features of professionalism in nursing. The small group of paediatric nursing students ( $n=18$ ) did not perceive nursing to be a profession as much as did the students of other specialities. However, no significant differences were found in the tests. Both the perception of nursing as activity promoting human well-being and health and the views of nursing as professional activity were strongest at the final stage of the 3 1/2 years of education in May 1992.

Nursing as a medical-technical activity was the third aspect of the students' views of nursing care. It was not equally strong as the other aspects, although most students tended increasingly to see features of the medical-technical model in nursing after 18 months of studies. The students accepted nursing as activity supporting medical care, but it was perceived only some extent as consisting of routines or being based on traditions. The item concerning 'nursing as social services' was loaded on this factor. Students of psychiatric nursing emphasized the medical-technical aspect less than the other students. Students preparing for anaesthetic and operating room nursing were most confident that nursing includes technical and medical activities. Students of psychiatric nursing differed significantly (at a level of 0.05) from students of anaesthetic and operating room nursing, paediatric nursing, medical-surgical nursing and midwifery at the end of the education. A significant difference was also found between students of public health nursing and anaesthetic and operating room nursing.

### Students' orientations to nursing at the end of the education

Cross-tabulation of the summarized variables indicates that a majority of the students (81%) conceived of nursing, at least to a large extent, as professional activity which promotes human health and well-being and requires medical-technical competencies to some extent (33%) or to a large extent (48%). (Table 3.) Significant correlation (chi-value 5.83,  $P$  0.02) was found between the variables concerning nursing as professional and medical-technical activity, when the variable concerning nursing as activity promoting human well-being and health was at the level 'at least to a large extent.' The students of the different specialities differed slightly from each other. The orientations of midwifery students and students of medical-surgical nursing showed a combination of professionalism, a medical-technical orientation and health and well-being promotion. On the other hand, students of public health nursing and paediatric nursing had assimilated a combination of an approach promoting health and well-being and professionalism. The medical-technical aspect was

**Table 3** Cross-tabulation of the summarized variables concerning nursing as professional activity, medical-technical activity and activity promoting human health and well-being

Nursing as activity promoting human health and well-being	Nursing as medical-technical activity	Nursing as professional activity				Total	
		No more than to some extent		At least to a large extent		<i>n</i>	%
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No more than to some extent	No more than to some extent	4	3	4	3	8	6
	At least to a large extent	4	3	2	1	6	4
At least to a large extent	No more than to some extent	11	7	52	33	63	40
	At least to a large extent	4	3	76	48	80	51
	Total	23	16	134	85	157	101

least evident among students of psychiatric or public health nursing.

### DISCUSSION

The findings of this 3-year follow-up study indicate that Finnish nursing students educated with a curriculum based on a nursing science model assimilate the primary goal of professional nursing: to take care of the patients' well-being and needs. This human scientific approach is most prominent at the end of the education, but it remains nearly constant throughout the education. The findings are parallel to the results of the follow-up study conducted by Salanperä *et al.* using qualitative methods. In many investigations, e.g. Murray *et al.* (1990), Kersten (1991), Kiger (1993) and Day *et al.* (1995), the need to help people has emerged as the main motive of some students aspiring to nursing as a vocation. Obviously, helping, caring and other human-oriented needs and features are basic characteristics of persons viewing nursing as attractive and fulfilling their needs.

Students emphasized health-promoting activities from the beginning to the final phase of their education. Furthermore, the medical model and the disease-centred approach in nursing were not prevailing features of the students' conceptions at any phase of the education contrary to the previous studies conducted by Pihlajamaa (1989), Kuokkanen (1991), Salanterä *et al.* (1992) and

Salmio (1990) concerning Finnish nursing students' development. The health-centred approach is an important aspect of the current health care services and a clearly stated principle in the reformed curriculum of Finnish health care education, which may explain the findings converse to the traditional approach in nursing. Besides, the task-centred approach reported out by Leino-Kilpi (1991), Mölsä (1993) and Pilhammar Anderson (1993) was not predominant. Apparently, the instrument covered multiple activities in nursing and helped the students to prioritize and identify the essential aspects of nursing care.

Professionalism in nursing is connected with the cultural and educational structures of society. For instance, the study conducted by May *et al.* (1991) indicates that the public in the USA considers nurses to be little respected and appreciated, which may be one reason for the shortage of nurses. On the contrary, nursing in Finland is a well-educated and respected profession, and nursing is a preferable and attractive alternative as a career choice. Therefore, the students' preconceptions and perceptions concerning independent and professional role of a nurse is not unexpected. The students who participated in this study were convinced of the professionalism of nursing since the first year of their education. This was indicated by the clearly stated items which the students responded to. The essays used by Salmio (1990) and the interviews analysed by Kiger (1993) failed to indicate this aspect of nursing. Apparently, students' descriptions of nursing in clinical settings differ from perceptions obtained in a class, which may reflect the aims of education and the views of an ideal nurse's role. Only 19% of the students who filled in a questionnaire used by Kerstin (1993) mentioned features of professionalism. These students were just entering the training, which may partly explain the differences between American and Finnish nursing students. Professionalism seems to become stronger as education progresses, as was also pointed out by Himanen (1990).

Based on the present classification, a combination of promotion of human well-being and health and professionalism is the predominant orientation among the great majority of students at the end of the education. In addition, half of the students emphasized the medical-technical model. In this respect, the students of different specialities had different profiles. The students who had the least prominent medical-technical orientation, were preparing for work as psychiatric or public health nurses. The most strongly medical-technical orientation was shown by future midwives, anaesthetic and operating room nurses and medical-surgical nurses, which is related to the competencies needed in their special areas of nursing.

The findings suggest that the students' professional development follows the scenario outlined in the curriculum and based on a nursing model. At the beginning of the degree programme, the studies mainly consist

of theoretical orientations towards the health care services and the profession without any practice. Therefore, as the programme progressed, the students' conceptions of nursing were based increasingly on real observations made in clinical settings and became consolidated, contrary to the findings of Olsson *et al.* (1991) and Pilhammar Anderson (1993) concerning Swedish nursing students. A great majority of the students had also had experiences from health care or social work before enrolling in the programme, which tends to make their views more realistic. Furthermore, students may have individual characteristics and preferences in how they conceive of and observe nursing and the nurse's role. The student's aptitudes and own needs may also cause her/him to choose some special area of nursing, which affects her/his perceptions of nursing.

### Implications

On the whole, students have assimilated conceptions of the nurse's competencies, which are congruent with the changing nature of nursing as a work and a profession. While planning the reform of education, it will be important to consider carefully the current and future demands of patients, health care services and organizations and to state explicitly the foundations and principles of the curriculum. Furthermore, students' learning, interest and values are dependent on the logic of structuring the subjects in the curriculum, as the emphasis on health in the Finnish nurse education indicated. On the other hand, discussion and dialogues between students, teachers and tutors at the school and in clinical settings at each phase of education may facilitate each student's awareness of her/his individual perceptions of nursing and nurse's role. Students' reflections upon their experiences and perceptions may reveal individual and variable orientations, which can be analysed in order to understand their roots and consequences for nursing activities and practice.

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