

Knowledge, attitudes and intention of high school students towards the nursing profession in Riyadh city, Saudi Arabia

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ABSTRACT

Objectives: To determine the knowledge, attitudes, and intention among the Saudi high school students towards the nursing profession. In addition, the study aims to identify students' perception of causes preventing them to become nurses. It also aims to determine the factors influencing the Saudi high school students' choice of nursing profession.

Methods: We used the descriptive analytical research design. Stratified random sampling procedures were employed to represent the Saudi high school students, 3 male and 3 female schools scattered in all areas of Riyadh city were selected. A total of 600 questionnaires were distributed and 503 questionnaires were returned, of which, 479 questionnaires were valid for analysis (79.8% response rate). The data collection started from November 2002 to January 2003. Descriptive and inferential statistics were used to analyze the collected data.

Result: High school students scored a reasonable level on the knowledge dimension, but did not achieve high

scores on the attitude dimension, however, they achieved very low scores on the intention of being a nurse in the future (5.2% of them indicated nursing as their preferred future job). Inferential data analysis showed that attitude, having or not having a nurse friend and knowledge was found to have significant positive influence on high school students' intention, while long working hours and high work load compared to other jobs were found to have a significant negative influence.

Conclusion: Results indicated that the more knowledge and positive attitude on nursing, the more likely the student would be attracted to the nursing profession. Accordingly, it could be concluded that Saudi health decision-makers need to increase the positive attitude on the nature and encouraging characteristics of modern nursing and its increasing respect as a skillful career for high school students. Reconsideration of salaries and benefits were recommended in order to attract more students to the nursing profession.

Saudi Med J 2004; Vol. 25 (2): 150-155

Shortage of nurses in the Kingdom of Saudi Arabia (KSA) has been a serious problem for a long time. Even the number of enrollees in nursing schools is minimal.¹ Shortage of nurses, however, is a concurrent global problem. In the year 2001, the American Hospital Association surveyed 715 hospitals and found that there were 126,000 vacant positions for registered nurses. In addition, the International Council of Nurses reported that many

countries had fewer nurses entering the nursing profession than are needed to fill vacancies worldwide.² Some nursing schools in the United States of America (USA) are encountering difficulties in recruiting high school students and increasing student enrollees.³ The nursing shortage in the USA has been raised from a health disaster to a nationwide security concern.⁴ A study of more than 43,300 registered nurses in 711 hospitals in the

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Received 13th July 2003. Accepted for publication in final form 18th October 2003.

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USA, United Kingdom, Scotland, Canada, and Germany described nursing as a profession in crisis.⁵ Nursing shortage causes administrative discomfort and raises worries on patients' quality of care. All these showed why the Saudi health decision makers tend to hire non-Saudi nurses. Yet, decision makers need to investigate the real reasons behind the low attractiveness of nursing profession to Saudi high school students. It also showed the importance of studying this issue. Therefore, this study aims to achieve the following objectives: 1) Examine the Saudi high school students' knowledge and attitudes on nursing profession. In addition, it aims to determine the students' intention to study nursing. 2) Identify the Saudi high school students' perception of causes preventing them to become nurses, and 3) determine the significant factors influencing Saudi high school students' choice of nursing profession.

Relevant literature. Relevant literature proposes that the public's opinion towards the nursing career seem to be nonconstructive.^{1,6,7} A descriptive design study of 641 high school students in Washington DC, USA (metropolitan area) was conducted to determine why nursing was not selected more frequently as a career. Authors found out that those who did not choose nursing indicated dislike of dying people and the salary as the main causes for not choosing this job.⁸ Another study conducted in Dade County, Florida, that surveyed 493 high school students found that only 7% selected nursing as their desired profession, and that mother's (not the father's) occupation significantly influenced the choice and self-reported opinions of parents, friends, and school-guidance counselors.⁹ The National Health Service (NHS) in the United Kingdom has serious problem in recruiting and retaining nursing and midwifery staff. The Royal College of Nursing suggests that there are approximately 22,000 vacancies for registered nurses and midwives in the year 2000. The reasons for this problem includes salary, the changing nature of jobs, how valued the staff feel, and other employment opportunities.¹⁰ A study conducted in Hong Kong indicated that though high school students were to some extent knowledgeable on nursing they were unwilling to pursue nursing as a career. In fact, a report in 1991 from the Association of Hong Kong Nursing Staff 1991, affirmed that though there was a huge and widespread employment campaign undertaken in Hong Kong, the government attempt failed to attract enough nurses to fill 4000 unoccupied positions.⁶ Another study showed that young Asians in Britain were not attracted to nursing due to the discrimination against Asians, perceived low status of nursing, and poor financial incentives.⁷ A survey study covered 1131 secondary and university students in KSA showed that the low impression of nursing, cultural and communal values were identified as main causes that prevent the Saudi

nationals from entering the nursing profession.¹¹ A study conducted in KSA surveyed university students and their parents, showed that students were reluctant to enroll in nursing and both students and their parents hold incorrect knowledge and negative image of the nursing career. Reasons given for not choosing nursing as a career included community image of nursing, long working hours, and mixing with the opposite gender.¹ A study conducted in 1996 showed that female students of both health institutes and high schools in KSA agree that nursing is a compassionate job serving the community and the country.¹² Yet, this did not affect their decision to be or not to be a nurse. This study identified many reasons behind the high school students' choice for not choosing nursing as a profession. Reasons included family disagreement, cultural and communal values, worry of not getting married, harmful reputation of being a nurse, mixing with the opposite gender, unfamiliarity with job salaries, unfamiliarity with job progress opportunities, unfamiliarity with job nature, psychological stress due to dealing with patients, long working hours, night shifts, and the requirement of good-level of English language.

Methods. This was a descriptive analytical study. A stratified random sampling technique was used to represent both female and male Saudi high school students in all areas in Riyadh city. The sample size equation $n=(p)(1-p)(Z)^2/e^2$ yields that a sample size of 384 is required to represent large populations with 95% confidence level ($Z=1.96$), an error rate (e) of 5% and a proportion of the target population (p) equals 50%.¹³ However, 600 questionnaires were distributed to 3 male and 3 female schools to have a better representation of the population. According to the size of the population of the selected schools, 270 questionnaires were distributed to female schools and 330 questionnaires were distributed to male schools, of which, 503 questionnaires were returned, and 479 questionnaires were valid for analysis (79.8% response rate). The questionnaire consisted of 43 items, arranged into 4 sections: 5 questions on the demographic data and career choice of respondents, 12 questions on the students' knowledge on nursing, 10 questions on their attitudes towards nursing, 5 questions on their intention to study nursing, and eleven questions on the causes preventing students from becoming a nurse. Five-point Likert scales measuring strength of agreement were used for scoring the knowledge, attitude, intention, and causes preventing students from becoming nurses with one for 'strongly disagree' and 5 for 'strongly agree'. Three steps were carried out to increase the content validity of the questionnaire. The first was reviewing the relevant literature. Then, 2 hospital administration specialists (from the academic staff of King Saud University, Riyadh, KSA) and 2 experienced nurse practitioners reviewed the

questionnaire and gave their alterations and suggestions. Finally, a pilot study (on 10 high school female students and 10 high school male students) was conducted and their suggestions were taken into consideration. Cronbach's alpha coefficient was used to test the reliability of the instrument with 0.83; for knowledge, 0.71 for attitude, 0.84 for intention, 0.70 for causes preventing students from becoming a nurse, and the overall reliability coefficient of the questionnaire was 0.83, such results indicate quite high reliability. Data collection procedures started on November 2002 and completed on January 2003. A covering letter was attached to each questionnaire explaining the purpose of the study, and indicating that students' participation in the study was optional, and that their responses would remain unnamed. Accordingly, students who agreed were given the questionnaire to complete either in their school classroom or in their homes. Socio-demographic variables and future profession choice were analyzed using descriptive statistics such as frequencies and percentages. Data related to the dimensions of knowledge, attitude and intention were analyzed by descriptive statistics including frequencies, percentages, means and standard deviations. Stepwise multiple regression analysis was used to identify the significant independent factors (knowledge and attitude dimensions as well as the socio-demographic variables) influence the high school students' intention to select nursing profession.

Results. **Table 1** showed that the sample consisted of 56.1% male students against 43.9% females. It also showed that the majority of students (approximately 50%) were between 18 to 19-year-old, and approximately 9% of them were older than 19-year-old. Such young ages explains the fact that 95% of students were not married. The same table also showed the students' choice of future profession, only 5.2% of them indicated nursing as their preferred future profession, results showed that the most popular profession was "computer science" followed by "medicine" and then "teaching". It was also clear from the table that the majority (approximately 65%) of students does not have a nurse friend. Results in **Table 2** illustrates that respondents achieved a relatively high score on the knowledge dimension (mean value of 3.81 and SD of 0.59), but intermediate score on the attitude dimension (mean value of 3.39 and SD of 0.60) and a low score on the intention dimension (mean value of 2.76 and SD of 0.98). The descriptive statistics in **Table 2** indicated that a large extent of agreement was achieved for the knowledge dimension. Most of respondents knew that nurses assist doctors in caring for patients, nursing involves caring for patients, and nurses need skills and knowledge to provide care (ranged between 88.3-90.2%). The majority of respondents knew that

nursing provides comfortable environment for patients (76.9%) and includes promoting and maintaining health (72.2%). Almost 70% of students knew that nursing is based on scientific knowledge. The table also revealed that between 60-61% of respondents understand that nursing includes educating people to keep healthy and that nurses provide patients with emotional support. More than 55% of them were knowledgeable that nurses are able to use their own initiative in their work, and approximately 54% of them believe that nurses educate patients on their illness. On the other hand, less than 50% of the respondents knew that nurses plan individual care in collaboration with patients, and that nurses are well educated. A closer look at **Table 2** illustrates that from approximately 25-34% of respondent do not know that nursing involves providing patients with emotional support, educating people to keep healthy, educating patients on their illness, and that nurses are able to use their own initiative in their work, plan individual care in cooperation with patients, and that nurses are well educated. Respondents did not achieve high scores on the attitude dimension. More than 92% of them agreed that it is very fulfilling to see patients getting better, and more than 77% agreed that they enjoy caring and being with people. More than 71% of respondents disagree that nursing is a job for females only. However, only 25.9% of them agreed that nursing provides opportunities to travel around the world and less than one third agreed that they were comfortable with the idea of being a nurse and that they can find a job in nursing wherever they go. Only 44.4% of respondents indicated that nursing is a very interesting job. **Table 2** also showed that less than 40% agreed that nursing is a challenging career, a secured profession, and reasonably paid for. The same table also revealed that between 38-44.3% of respondents do not know that nursing is a challenging career that provides opportunities for the nurse to work anywhere around the world, and that it is a secured job. In addition, the table revealed that more than 42% of them know nothing about the salaries and other financial benefits of nursing. Responses on the intention dimension reflected very low scores. Just 41% of respondents' friends think that nursing is important job against 29% who disagreed. Approximately 32% of the respondents like to study nursing against 50.5% who disagreed. About 32% also feel that their characters are suitable for nursing versus 35.3% did not think so. Only 28.4% were interested in nursing, while 57% were not interested. Finally, only 22.4% of respondents think that their families encourage them to be nurses, while 54% did not think so. Results in **Table 3** illustrated that long working-hours, community does not appreciate nursing profession, night shifts, working with opposite sex, people down grade nurses and ignored-job by health decision-makers were

identified by the majority of respondents as causes preventing them from being nurses. People do not respect nursing profession, high work-load, avoid getting diseases, and unpleasant environment were also identified as causes preventing high school students from being nurses but with less level of agreement. Only 37.2% thought of the sight of blood as a cause preventing them from being nurses. To find out the significant factors influencing the Saudi Arabian high school students' intention of being a nurse, the stepwise multiple regression analysis (MRA) was utilized. In this model, the independent variables included the perceived obstacles, the knowledge and attitude dimensions as well as the socio-demographic variables. The availability of multicollinearity was tested by the variance inflation factors (VIFs). Yet, all VIFs values were significantly less than 10, which indicated a minimal level of multicollinearity.^{14,15} Results of the MRA are presented in **Table 4**. Results showed that the value of the F-ratio (68.33) is highly significant ($p < 0.001$), which means the model has a linear relationship between the independent and dependent variables and a high ability to predict the dependent variable (students' intention to choose nursing profession). The value of R showed a significant correlation between the independent variables and the dependent variable in this model; it was (0.648). The value of the determinant coefficient R^2 of the model indicated that the model predictors (significant independent variables) account for 42% of the variability in the high school students' intention to choose nursing profession. Though all independent variables were found in the previous studies, the value of R^2 in this study may indicate that there might be other important independent variables to be investigated. However, the model identified 5 independent variables, namely, the attitude dimension, having/not having a nurse friend, long working-hours, high workload compared to other jobs, and the knowledge dimension. The attitude dimension is the independent variable that has the highest influence on the high school students' intention to choose nursing profession ($\beta = 0.545$, $t = 12.95$, and $p < 0.001$). That is, the more positive attitude toward the profession, the more likely the student will choose nursing profession. The next highest influence on the high school students' intention came from "having/not having a nurse friend" ($\beta = 0.144$, $t = 4.04$, and $p < 0.001$), those who have nurse friends were more likely to choose nursing profession than those whom without a nurse friend. The third variable influences the students' intention was long working hours ($\beta = -0.086$, $t = -2.41$, and $p < 0.05$). That is, the more the student is convinced that nursing requires long working hours, the less probable he/she will choose nursing as a future career. The fourth variable influences the students' intention was the high work-load of nursing compared to other jobs ($\beta = -0.074$,

$t = -2.05$, and $p < 0.05$), which means the more the students are convinced that nursing has a high work-load compared to other jobs, the less likely they will choose nursing as a future job. Finally, the fifth variable was the knowledge dimension ($\beta = 0.081$, $t = 1.97$, and $p < 0.05$), which means the more knowledge on the nursing profession, the more probable the student will choose nursing profession. In addition, the rest of the socio-demographic variables (age, gender, and marital status) did not show a significant influence on the students' intention ($p > 0.05$).

Discussion. The results of this study showed minimal interest in nursing compared with medicine, computer science, teaching, and business administration. Thus, it is worthwhile to consider reasons for such obvious lack of interest in nursing profession. Initially, KSA as a major oil-rich country and with the new intention of the

Table 1- Frequency distribution of respondent socio-demographic variables.

Variable	Frequency n (%)
Age*	
Younger than 18	193 (40.5)
18 to 19	237 (49.7)
≥ 20	42 (8.8)
Total	477 (100)
Gender	
Male	267 (56.1)
Female	209 (43.9)
Total	476 (100)
Social status	
Married	23 (5)
Non-married	441 (95)
Total	464 (100)
Job	
Medicine	100 (20.9)
Computer Science	110 (23)
Engineering	35 (7.3)
Business Administration	48 (10)
Teaching	82 (17.1)
Accounting	19 (4)
Economic	14 (2.9)
Nursing	25 (5.2)
Other	46 (9.6)
Total	479 (100)
Do you have a nurse friend?	
Yes	166 (35.2)
No	306 (64.8)
Total	472 (100)
*originally a continuous variable	

Table 2 - Knowledge, attitude and intention descriptive results.

Statements	Agreed or strongly agreed		Do not know		Disagreed or strongly disagreed	
	n	(%)	n	(%)	n	(%)
Knowledge statement about nursing and nurses						
Provides comfortable environment for patients	368	(76.9)	74	(15.4)	36	(7.5)
Involves caring for patients	428	(89.3)	31	(6.5)	19	(3.9)
Includes educating people to keep healthy	292	(60.9)	125	(26.1)	57	(11.9)
Includes promoting and maintaining health	246	(72.2)	98	(20.5)	33	(6.9)
Nursing care is based on scientific knowledge	335	(69.9)	89	(18.6)	51	(10.6)
Nurses need skill and knowledge to provide care	423	(88.3)	31	(6.5)	24	(5.0)
Nurses educate patients about their illness	258	(53.9)	132	(27.6)	86	(18.0)
Nurses provide patients with emotional support	287	(60.0)	117	(24.4)	73	(15.2)
Plan individual care in collaboration with patients	215	(44.9)	154	(32.2)	107	(22.3)
Able to use their own initiative in their work	271	(55.6)	152	(31.7)	55	(11.5)
Nurses are well educated	212	(44.3)	163	(34.0)	102	(21.3)
Nurses assist doctors in caring for patients	432	(90.2)	23	(4.8)	24	(5.0)
Total			Mean = 3.810 SD = 0.586			
Attitude statements						
I think nursing is a very interesting job	213	(44.4)	131	(27.3)	131	(27.4)
I am comfortable with the idea of being a nurse	147	(30.7)	92	(19.2)	232	(48.4)
I enjoy caring and being with people	372	(77.7)	52	(10.9)	51	(10.7)
It (nursing) is a challenging career	188	(39.2)	182	(38.0)	105	(21.9)
It provides opportunities for travel around the world	124	(25.9)	200	(41.8)	152	(31.8)
It is a secure profession	186	(38.9)	205	(42.8)	86	(17.9)
The pay in nursing is reasonable	176	(36.9)	204	(42.6)	92	(19.2)
It is very fulfilling to see patients getting better	441	(92.1)	24	(5.0)	13	(2.7)
I can find a job in nursing wherever I go	145	(30.3)	212	(44.3)	121	(25.2)
Nursing profession is a job for females only	90	(18.8)	46	(9.6)	342	(71.4)
Total			Mean = 3.387 SD = 0.602			
Intention to study nursing statements						
I am interested in nursing	136	(28.4)	68	(14.2)	273	(57.0)
My family encourages me to be a nurse	107	(22.4)	112	(23.4)	259	(54.0)
I like to study nursing courses	151	(31.5)	86	(18.0)	242	(50.5)
My friends think that nursing is an important profession	197	(41.1)	141	(29.4)	139	(29.0)
I feel my character is appropriate for nursing	152	(31.7)	158	(33.0)	169	(35.3)
Total			Mean = 2.758 SD = 0.982			

Table 3 - Causes that prevent student from being a nurse.

Statements	Agreed or strongly agreed		Do not know		Disagreed or strongly disagreed	
	n	(%)	n	(%)	n	(%)
Community does not appreciate nursing profession	282	(58.9)	108	(22.6)	89	(18.5)
Majority of people down grade nurses	252	(52.6)	124	(25.9)	103	(21.5)
Requires working with opposite sex	258	(53.9)	98	(20.5)	123	(25.6)
Unpleasant environment to work	186	(38.9)	160	(33.3)	133	(27.8)
Long working-hours	284	(59.3)	137	(28.6)	58	(12.1)
Night shifts	269	(56.2)	123	(25.6)	87	(18.2)
People do not respect nursing profession	202	(42.2)	114	(23.8)	163	(34.0)
Afraid of getting diseases	190	(39.6)	135	(28.2)	154	(32.2)
I hate the sight of blood	178	(37.2)	87	(18.2)	214	(44.6)
High workload compared to other jobs	197	(41.2)	155	(32.2)	127	(26.6)
Ignored-job by decision-makers	231	(48.3)	142	(29.5)	106	(22.2)

Table 4 - Stepwise multiple regression analysis.

Variables	Beta	t - value	p value	R ²	Variance inflation factor (VIF)
Attitude dimension	0.545	12.95	0.000	0.385	0.385
Having a nurse friend? (0=no and 1=yes)	0.144	4.04	0.000	0.405	0.405
Long working-hours	-0.086	-2.41	0.016	0.410	0.410
High workload compared to other jobs	-0.074	-2.05	0.041	0.415	0.415
Knowledge dimension	0.081	1.97	0.048	0.420	0.420

F = 68.33, p value = 0.000, R = 0.648, R² = 0.42

government to introduce the cooperative health insurance as well as the relatively high salaries of teachers, medical doctors and computer specialists and the positive competitive nature of its people may affect school graduates to such specialties.

Results also indicated that the more knowledge and positive attitude on nursing, the more likely that the student would be attracted to nursing. In addition, results illustrated that those who have nurse friends were more likely to become nurses which means they had more chance of learning or knowing the nursing profession. Therefore, Saudi health decision-makers need to educate high school students on the nature and encouraging characteristics of modern nursing and its increasing respect as a skillful career. They need to emphasize to high school students that nursing profession offer chances for constant and secure employment with a variety of career directions and opportunities. This could work well bearing in mind that over 92% of respondents agreed that seeing patients recover is fulfilling, and more than 77% of them agreed that they enjoy caring and being with people. The introduction of cooperative health insurance is expected to attract more private healthcare providers, such providers need staff with medical and nursing education. To attract those with non-nursing interest, high school students need to be informed that nursing is the closest job to medicine and that leading positions in nursing require management and computer skills (can be achieved through proper training) and they can teach nursing courses in universities or inside hospitals, as well as educate people and patients to keep healthy. Respondents seemed less aware of the financial benefits of nursing jobs. Yet, if new high school graduates are to be attracted to nursing, salaries and benefits need to be reconsidered by decision-makers in KSA in order to compensate the long working hours and relatively high work-load in nursing profession. The respondents seemed less aware of the fact that nursing education can lead them to get a job wherever they go due to the international nursing shortage.

Finally, there is a clear need to educate the parents and community on the nature and promising features of modern nursing and its growing admiration as a skillful job. They need to know that nursing profession provides chances for secure employment with a variety of opportunities.

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