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## Knowledge, attitudes, and perceptions of preparatory-year Students towards the nursing profession in KAU, Jeddah, Saudi Arabia

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The shortage of qualified nurses is a huge challenge all over the world. This challenge is expected to increase as the economy and population grow. Additionally, the COVID-19 pandemic highlighted the desperate need to increase the number of qualified nurses. Currently, Saudi Arabia is experiencing a tremendous nursing shortage. Therefore, this study aimed to determine the knowledge, attitudes and perceptions of preparatory-year health students towards the nursing profession. A quantitative cross-sectional study was conducted using an online questionnaire. A total of 359 students participated in the study, of whom 58.5% were female and 41.5% were male. Most of the participants (95.8%) were 18–20 years old, and 98.9% were single. The result suggested a high level of participants' knowledge about the nursing profession ( $M = 4.14$ ) and a positive attitude about the nursing profession ( $M = 3.34$ ). However, the intention of the participants to study nursing was low ( $M = 2.87$ ). This low interest in nursing was due to several factors, such as having to work with the opposite sex (85%), long working hours (84%), high workload (75%), night shifts (71%) and decision-makers' ignorance about the importance of the nursing profession (70.53%). This study highlighted that the reason preparatory-year students have less interest in choosing nursing as a profession was mainly related to the job description and nature of the job. Therefore, it is necessary to discuss these issues with policy-makers and stakeholders to provide suggestions for attractive work environments for the nursing profession and hence increase the number of nursing graduates.

**Keywords:** Nursing, Professions, Knowledge, Attitude, Students, Intentions, Factors

### INTRODUCTION

The nursing profession is one of the most necessary professions in the healthcare system. According to the World Health Organization (WHO), nursing represents a significant share, nearly 50%, of the global health workforce, and the nursing shortage represents more than 50% of health workers; the shortage of qualified nurses is a huge challenge for health care systems all over the world (WHO, 2022). This challenge is expected to increase as the economy and population grow. Generally, hospital administrators have alerted stakeholders in healthcare systems of the nursing shortage issue (Ochieng et al. 2022). Additionally, the COVID-19 pandemic highlighted the desperate need to increase the number of qualified nurses (Shiow-Ching, 2021; Chan et al. 2021). This is especially because of the exhaustion of

nurses caused by nurses being infected by COVID-19 and the long recovery period, which led to the overloading of their other nursing colleagues (Ochieng et al. 2022). In a study by the American Association of Critical Care Nurses (AACN) that included over 6,500 critical care nurses, 92% of the respondents said that the pandemic had depleted nurses at their hospital (AACN, 2021). Moreover, the American Nurses Association (ANA) has been working for more than two decades to address nurse staffing levels to enhance working conditions for nurses and to achieve optimal patient outcomes (ANA, 2021). This shortage in nurses is due to the low number of students enrolled in university who choose to enrol in nursing colleges (Alomar, 2004; Rossiter et al. 1999).

Several studies were conducted to explore reasons of shortage in the number of qualified nurses. Research

explored students' knowledge and attitudes towards the nursing profession, as well as factors that influence students' choices of enrolment in their speciality. A descriptive study conducted by Rossiter et al. (1999) to examine the level of awareness about the nursing profession among high school students showed that students were generally knowledgeable about nursing and had a positive attitude towards nursing, but they were still hesitant to pursue nursing as a career. It also suggested that students who had been in contact with a nurse showed a slightly more positive attitude towards nursing and a slightly higher intention to pursue nursing as a career than those who had not had any contact with a nurse. Students considered nursing to be a low-paid profession.

Another study conducted by Al-Omar (2004) on high school students in Riyadh, Saudi Arabia, indicated that students were knowledgeable about the nursing profession and had a moderate attitude towards it, but their interest in becoming nurses was minimal. Only 44.3% of participants agreed that nurses are well educated. Al-Omar suggested that students would be more attracted to the nursing profession if they were more knowledgeable and had a positive attitude towards nursing.

Similarly, Keshk et al. (2016) conducted a study of preparatory-year students in Qassim City, Saudi Arabia, to determine the students' perceptions of nursing and its impact on their career choice. Although the participants had a positive view of the nursing profession and agreed that it was important, they did not consider nursing their career choice. The results showed that more than half (54.8%) agreed that nurses should be well educated and having a university degree (Keshk et al. 2016). Also, the opinions of family members about nursing influenced the career decisions of their children. One third of the participants had one or two parents who are nurses, and for nearly two thirds of them, their sources of views about nursing was someone they knew who was a nurse. Nearly half of the participants disagreed that nursing is a feminine job, and they reported that nurses are not paid well.

On the other hand, Elibol and Seren (2017) studied the reasons that influenced students to choose the nursing profession and their perceptions of nursing in Istanbul. The results showed that the majority of participants were knowledgeable about the nursing profession before they attended nursing school. Although half of the participants had a negative attitude towards nursing, they reported that they chose nursing as a profession because it is the easiest way to secure a job. Another reason was being influenced by having at least one person in their family in the nursing profession. Likewise, Marcinowicz et al. (2016) conducted a qualitative study that identified several reasons why students had chosen the nursing profession: desire to help others, family tradition, desire to work abroad, failure to get into another course, pure chance and low admission requirements (compared to medical

admission requirements). Similarly, Liaw et al. (2017) found that the most influential reason for not choosing nursing was gender stigma and parents who would be less proud and less likely to support them. Wilkes et al. (2015) found that nursing was a popular choice among students in Australia because it is regarded as a profession that provides safety and the opportunity to assist and care for others. Other factors influencing choice of profession among undergraduate students in health colleges were explored by Wu et al. (2015), including students' countries of origin, family culture and personal preferences; this was especially true in cultures that consider nursing to be a low-paying and low-status profession. Participants also mentioned that parents often do not encourage their children to pursue nursing because they believe that nursing is an inferior job. Moreover, salaries have been one of the factors that affect motivation: nurses are paid much less than other healthcare professionals.

Currently, Saudi Arabia is experiencing a tremendous nursing shortage (Alsadaan et al. 2021). Also, the population of Saudi Arabia is expected to reach 37 million by 2025 (Falatah & Conway, 2019), but the number of graduated nurses in Saudi Arabia is extremely low compared to other countries. Saudi Arabia graduates approximately 10.8 nurses per 100,000 population, reflecting the low number of Saudi nursing students enrolled in nursing colleges (Alluhidan et al. 2020). In recent years, the number of Saudi nurses has been slightly increasing. According to statistics from the Ministry of Health (MOH, 2021), the number of local Saudi nurses has grown in the last five years, the number of Saudi citizen nurses increased from 14.4% in 2017 to 33.3% in 2021. However, one of the goals of the Saudi Vision 2030 is to increase the number of nurses to improve healthcare delivery in Saudi Arabia. A statistical prediction has been made in 2018 by SCFHS, shows that in the next 5 years the number of Saudi nurses will reach 26222 in 2027. (SCFHS, 2018). Public perception of the profession has significant effects on students' choice of nursing as a career to minimise the nursing shortage in the KSA (Elmorshedy et al. 2020; Mahran et al. 2012). Although many studies have investigated the attitudes of students towards nursing as their future career, the attitudes of Saudi Arabian students in this respect have not been adequately examined. Consequently, the purpose of this paper is to determine the knowledge, attitudes and perceptions of preparatory-year students towards the nursing profession. The results of this study may provide a foundation for policy-makers and stakeholders in planning and developing strategies for the recruitment and promotion of the profession and may highlight solutions to provide suggestions for attractive work environments for the nursing profession and hence increase the number of nursing graduates.

## MATERIALS AND METHODS

A quantitative cross-sectional research design was adopted to determine the knowledge, attitudes and perceptions of preparatory-year students towards the nursing profession. A total of 359 students from the preparatory year in the health science track at King Abdulaziz University participated in this study. Data were collected from 9 May 2022 to 11 July 2022. A self-administered online questionnaire was used to collect data after permission was granted from the author (Al-Omar, 2004). The questionnaire included five parts, with a total of 36 items. Part one included 5 items on demographic data and the career choice of respondents; part two included 9 items on the students' knowledge of the nursing profession; part three included 10 items on attitudes towards the nursing profession; part four included 4 items on intention to study nursing; part five included 8 items on the factors that influence students from choosing the nursing profession. The responses were measured on a 5-point Likert scale ranging from 'strongly agree' (score 5) to 'strongly disagree' (score 1). The reliability of the original tool was measured using alpha coefficients of 0.83 for knowledge, 0.71 for attitude, 0.84 for intention and 0.70 for causes preventing students from becoming nurses; the overall reliability coefficient of the questionnaire was 0.83. Ethical approval was obtained from the Research Ethics Committee of the Faculty of Nursing at King Abdulaziz University. An informed consent form was provided that allowed participants to read the information of the study and decide whether they would participate, and their data were completely anonymous. The participation was voluntary, and the participants had the right to refuse to participate. Data were analysed using SPSS version 26. The frequencies, percentages, means and standard deviations were computed for the descriptions of the dimensions of knowledge, attitude, intention and causes.

	Female	210	58.5%
Social status	Married	4	1.1%
	Non-married	355	98.9%
What special would you like to role in?	Nursing	28	7.8%
	Medicine	256	71.3%
	Dentist	12	3.3%
	Pharmacy	12	3.3%
	Medical Laboratory	6	1.7%
	Radiology	4	1.1%
	Nutrition	7	1.9%
	Physical therapy	2	0.6%
	Occupational therapy	3	0.8%
Do you have friends / relatives in nursing?	Yes	120	33.4%
	No	236	65.7%
If yes, the relation	Not applicable	239	66.6%
	My cousin	2	.6%
	My sister	18	5.0%
	My brother	6	1.7%
	Aunt or aunt sister	33	9.2%
	Mother	5	1.4%
	Uncle or uncle sister	19	5.3%
	Person of my family	18	5.0%
Friends	18	5.0%	

**Knowledge about the Nursing Profession**

Participants had a high level of knowledge about the nursing profession ( $M = 4.14$ ). Most respondents (96.10%) agreed that nurses are well educated, (87.30%) agreed that nursing is based on scientific knowledge, (93.98%) agreed that nursing involves caring for patients, (91.42%) agreed that nursing provides a comfortable environment for patients and (65.4%) agreed about nurses can plan individual care in collaborating with patient. This may help patients and their families to decide on a care plan (Table 2).

**Attitude towards the Nursing Profession**

Participants had a positive attitude towards the nursing profession ( $M = 3.34$ ). The majority (95.54%) agreed that nurses are paid a reasonable salary, 91.14% enjoyed caring for people, 77.94% reported being comfortable with the idea of being a nurse, 73.82% agreed that it is very fulfilling to see patients getting better, and 48.69% found nursing an interesting job. Slightly more than half of the participants (51.09%) agreed that nursing is a profession for females only (Table 3).

**Intention to Study Nursing**

Even though 77.27% of participants reported that they felt their character was appropriate for nursing and more than half of the participants (64.79%) had families that supported them becoming nurses, only 38.72% were interested in nursing. Also, 48.58% thought that nursing was not an important profession due to peer pressure (Table 4).

**RESULTS**

**Demographic Data**

Table 1 presents the distribution of the study participants according to their socio-demographic characteristics. More than half of the study participants (58.5%) were female, and (41.5%) were male. The majority of participants (95.8%) were between 18 and 20 years old. Most of the participants (71.3%) wanted to join medicine college, though only (7.8%) chose to join nursing college. More than half of the participants (65.7%) had no friends or relatives in nursing. Only (33.4%) from participants had friends or relatives in nursing, (88%) of them do not want to join nursing and (12%) want to pursue nursing.

**Table 1: Demographic Data**

		Count	%
Age	18-20	344	95.8%
	20-23	13	3.6%
	>24	2	0.6%
Gender	Male	149	41.5%

**Table 2: Knowledge about nursing profession**

	Strongly disagree		Disagree		Do not know		Agree		Strongly agree		Mean	Standard Deviation	%	Level	Order
	Count	%	Count	%	Count	%	Count	%	Count	%					
Nurses are well educated	2	0.6%	1	0.3%	9	2.5%	41	11.4%	306	85.2%	4.81	0.54	96.10%	Very High	1
Involves caring for patients	0	0.0%	3	0.8%	19	5.3%	61	17.0%	276	76.9%	4.70	0.61	93.98%	Very High	2
Provides comfortable Environment for patients	2	0.6%	4	1.1%	26	7.2%	82	22.8%	245	68.2%	4.57	0.72	91.42%	Very High	3
Nursing care is based on scientific knowledge	4	1.1%	13	3.6%	42	11.7%	89	24.8%	211	58.8%	4.36	0.90	87.30%	Very High	4
Able to use their own initiative in their work	7	1.9%	16	4.5%	69	19.2%	107	29.8%	160	44.6%	4.11	0.99	82.12%	High	5
Plan individual care in collaboration with patients	13	3.6%	27	7.5%	84	23.4%	101	28.1%	134	37.3%	3.88	1.11	77.60%	High	6
Includes educating and promoting to maintaining health	10	2.8%	48	13.4%	77	21.4%	92	25.6%	132	36.8%	3.80	1.15	76.04%	High	7
Nurses provide patients with emotional support	23	6.4%	36	10.0%	99	27.6%	86	24.0%	115	32.0%	3.65	1.21	73.04%	High	8
Nurses assist doctors in caring for patients	32	8.9%	52	14.5%	108	30.1%	76	21.2%	91	25.3%	3.40	1.25	67.91%	Moderate	9
Knowledge about nursing profession											4.14	0.57	82.84%	High	

**Table 3: Attitude toward nursing profession**

	Strongly disagree		Disagree		Do not know		Agree		Strongly agree		Mean	Standard Deviation	%	Level	Order
	Count	%	Count	%	Count	%	Count	%	Count	%					
The pay in nursing is reasonable	1	0.3%	3	0.8%	15	4.2%	37	10.3%	303	84.4%	4.78	0.58	95.54%	Very High	1
I enjoy caring and being with people	4	1.1%	11	3.1%	28	7.8%	54	15.0%	262	73.0%	4.56	0.85	91.14%	Very High	2
It provides opportunities for travel around the world	15	4.2%	27	7.5%	80	22.3%	84	23.4%	153	42.6%	3.93	1.15	78.55%	High	3
I am comfortable with the idea of being a nurse	21	5.8%	34	9.5%	58	16.2%	94	26.2%	152	42.3%	3.90	1.22	77.94%	High	4
It is very fulfilling to see Patients getting better	13	3.6%	47	13.1%	100	27.9%	77	21.4%	122	34.0%	3.69	1.17	73.82%	High	5
It (nursing) is a challenging career	52	14.5%	69	19.2%	120	33.4%	50	13.9%	68	18.9%	3.04	1.29	60.72%	Moderate	6
It is a secure profession	66	18.4%	80	22.3%	116	32.3%	52	14.5%	45	12.5%	2.81	1.25	56.10%	Moderate	7
Nursing profession is a job for females only	98	27.3%	91	25.3%	86	24.0%	41	11.4%	43	12.0%	2.55	1.32	51.09%	Low	8
I think nursing is a very interesting job	113	31.5%	101	28.1%	66	18.4%	34	9.5%	45	12.5%	2.43	1.35	48.69%	Low	9
I can find a job in nursing wherever I go	235	65.5%	44	12.3%	38	10.6%	24	6.7%	18	5.0%	1.74	1.19	34.71%	Very Low	10
Attitude about nursing profession											3.34	0.56	66.83%	Moderate	

**Table 4: Intention to study nursing**

	Strongly disagree		Disagree		Do not know		Agree		Strongly agree		Mean	Standard Deviation	%	Level	Order
	Count	%	Count	%	Count	%	Count	%	Count	%					
I feel my character is appropriate for nursing	33	9.2%	26	7.2%	50	13.9%	98	27.3%	152	42.3%	3.86	1.29	77.27%	High	1
My family encourages me to be a nurse	64	17.8%	55	15.3%	73	20.3%	65	18.1%	102	28.4%	3.24	1.46	64.79%	Moderate	2
My friends think that nursing is an important profession	130	36.2%	64	17.8%	84	23.4%	43	12.0%	38	10.6%	2.43	1.36	48.58%	Low	3
I am interested in nursing	187	52.1%	73	20.3%	59	16.4%	15	4.2%	25	7.0%	1.94	1.22	38.72%	Low	4
Intention to study nursing											2.87	0.77	57.34%	Moderate	

**Table 5: Factors influencing students' choices regarding nursing profession**

	Strongly disagree		Disagree		Do not know		Agree		Strongly agree		Mean	Standard Deviation	%	Level	Order
	Count	%	Count	%	Count	%	Count	%	Count	%					
Requires working with opposite sex	18	5.0%	13	3.6%	49	13.6%	67	18.7%	212	59.1%	4.23	1.13	84.62%	Very High	1
Long working hours	6	1.7%	11	3.1%	66	18.4%	94	26.2%	182	50.7%	4.21	0.96	84.23%	Very High	2
High workload compared to other jobs	21	5.8%	36	10.0%	82	22.8%	99	27.6%	121	33.7%	3.73	1.19	74.65%	High	3
Night shifts	37	10.3%	28	7.8%	101	28.1%	84	23.4%	109	30.4%	3.56	1.28	71.14%	High	4
Decision-makers' ignorance about the importance of the nursing profession	35	9.7%	34	9.5%	103	28.7%	81	22.6%	106	29.5%	3.53	1.27	70.53%	High	5
Afraid of getting diseases	70	19.5%	50	13.9%	110	30.6%	64	17.8%	65	18.1%	3.01	1.35	60.22%	Moderate	6
Unpleasant environment to work	136	37.9%	107	29.8%	72	20.1%	25	7.0%	19	5.3%	2.12	1.15	42.40%	Low	7
I hate the sight of blood	205	57.1%	71	19.8%	44	12.3%	23	6.4%	16	4.5%	1.81	1.15	36.27%	Low	8
Factors to prevent being a nurse											3.28	0.60	65.51%	Moderate	

### Factors Preventing Students from Choosing the Nursing Profession

Table 5 presents factors that influenced participants' choices with regard to the nursing profession as follows: working with the opposite sex (84.62%), long working hours (84.23%), high workload (74.65%), night shifts (71.14%) and decision-makers' ignorance about the importance of the nursing profession (70.53%). Also, (35.9%) are afraid from getting diseases.

### DISCUSSION

This study aimed to determine the knowledge, attitudes and perceptions of preparatory-year students (health track) at King Abdulaziz University, Jeddah, Saudi Arabia, towards the nursing profession to highlight the factors that prevent students from seeking nursing as a profession.

#### Demographic Data

The participants in this study were 58.5% female and 41.5% male. Our results showed that only 7.8% of the participants responded that they would enrol in nursing. Our findings are compatible with those of Rossiter et al. (1999), Al-Omar (2004) and Keshak et al. (2016). In all these studies, the participants showed minimal intention to go into nursing rather than other specialties. This result suggests that there is a low level of intention to choose nursing as a profession all over the world. As mentioned previously, there is a serious shortage in the nursing profession. Healthcare systems are desperate for more nurses, and more effort must be made to encourage students to pursue nursing as a profession.

Also, 33.4% of participants had friends or relatives who were working in nursing. However, (88%) of them do not want to join nursing and (12%) want to pursue nursing. According to the findings, friends and relatives working in nursing have little influence on participants' enrolment in the nursing profession. This result is opposite those of Al-Omar (2004), Rossiter et al. (1999) and Keshak et al. (2016), whose results suggest that the more students had been in contact with a nurse, the higher intention they had to pursue nursing as a career. On the other hand, the studies of Eibol and Seren (2017) and Marcinowicz et al. (2016) showed that choosing nursing as a profession was influenced by family or family traditions. This suggests that views of nursing differ from one culture to another. There is no absolute rejection of the profession. Therefore, strategies and solutions to increase enrolment in nursing colleges must be reviewed and planned vigilantly.

#### Knowledge about the Nursing Profession

Our results showed that participants had a high level of knowledge about the nursing profession ( $M = 4.14$ ). Similarly, the studies of Rossiter et al. (1999), Al-Omar (2004) and Eibol & Seren (2017) found that students were knowledgeable about the nursing profession, suggesting

that the importance of the nursing profession is well known in society. This may be due to the efforts conducted by governments and nursing societies, such as clarifying the role of the nurse and introducing the profession in several events, such as International Nurses' Day. Moreover, the use of social media and smart phones with easy access to the internet has made it easy to have information in seconds at the click of a button. In addition, the recent pandemic of COVID-19 highlighted the importance of the nursing profession.

#### Attitude towards the Nursing Profession

Our findings show that the majority of students had a moderate attitude towards the nursing profession ( $M = 3.34$ ). This aligns with the results of Rossiter et al. (1999), Al-Omar (2004), Keshak et al. (2016) and Eibol and Seren (2017), which also suggested a positive attitude towards the nursing profession. This suggests that society views nursing as an important profession. This may be due to the increase in the awareness on the part of the current generation about the nursing speciality and the main role of the nurse in the health system.

Also, 51.09% disagreed that nursing is a job for females only. Likewise, Keshak et al. (2016) found that 58.3% disagreed with the idea that only women should be nurses. In Al-Omar's (2004) study, 71% of respondents disagreed that nursing was a job for females only. This result suggests a low gender stigma in the nursing profession. Interestingly, the majority of participants in our study (95.54%) agreed that nursing is paid a reasonable salary, which is in contrast to the studies of Rossiter et al. (1999), Keshak et al. (2016), Al-Omar (2004) and Wu et al. (2015), in which nursing was considered a low-paying profession. This may suggest that opinions on nursing salaries differ from person to person and from one country to another.

#### Intention to Study Nursing

Despite the moderate attitude towards the nursing profession, the intention to pursue nursing as a profession in our study was low. Only 38.72% of the participants reported that they were interested in nursing. Similar to previous studies, Al-Omar (2004), their intention and interest in enrolling in the nursing profession were low, although Wilkes et al. (2015) found a majority of participants interested in nursing as a major. This result may explain the shortage of nurses all over the world and highlight the importance of exploring the reasons for this reluctance to choose nursing as a profession.

#### Factors Preventing Students from Choosing the Nursing Profession

Previous studies suggested several factors that influenced students' choices of nursing as a profession: low family support, gender stigma, low pay, low status, cultural background and personal preferences, (Li et al (2010). However, the main reported factors were as

follows: working with the opposite sex (84.62%), long working hours (84.23%), high workload (74.65%), night shifts (71.14%) and decision-makers' ignorance about the importance of the nursing profession (70.53%). This indicates that the factors determining the choice for or against the nursing profession are different from one country to another. The choice perhaps depends on the person's culture and background, as well as the economic status of the country.

One limitation of this study was the difficulty of reaching preparatory-year students directly. A self-reporting electronic questionnaire was used to collect data, and this may have resulted in some bias. Also, this study was conducted at only one university in Jeddah City. Therefore, the results cannot be generalised. Further research is required at the universities of Jeddah's city to explore more about factors influencing students' choices for their future careers.

Decision-makers and stakeholders in Saudi Arabia need to examine the factors that prevent students from choosing nursing as a profession, especially the nature of the work, such as long working hours, high workloads and night shifts. There should be at least reconsideration of salaries and benefits for nurses to attract more students to the nursing profession.

## CONCLUSION

Lastly, we have noticed that participants had a high level of knowledge about the nursing profession. However, intention and interest in enrolling in the nursing profession were low. This result may explain the shortage of nurses all over the world and highlight the importance of exploring the reasons for this reluctance to choose nursing as a profession. The main reported factors were as follows: working with the opposite sex, long working hours, high workload, night shifts and decision-makers' ignorance about the importance of the nursing profession. The factors determining the choice for or against the nursing profession are different from one country to another. The choice perhaps depends on the person's culture and background, as well as the economic status of the country.

## CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

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We acknowledge the contributions of the participants in the study.

## AUTHOR CONTRIBUTIONS

OF designed and revised all sections of current study, Also AA designed and revised the methodology and result sections. The introduction section done by GM, the discussion section done by FA. The research questionnaire and statistical analysis has been done by

AN and GA.

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