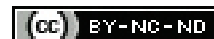


Factors Affecting Attitude towards Research among Nursing Students: A Cross-sectional Survey from Taif, Saudi Arabia

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ABSTRACT

Introduction: Research skills are an essential part of what it takes to be a professional nurse. While the research attitudes of nursing students in other countries have been extensively studied, research on nursing students' attitude towards nursing research in Saudi Arabia is limited.

Aim: To examine the factors affecting nursing students' Attitude Towards Research (ATR).

Materials and Methods: A cross-sectional study was conducted in the Department of Nursing, Faculty of Applied Medical Sciences at Taif University, Taif, Saudi Arabia, over a duration of five months from March 2023 to August 2023. 60 fourth-year nursing students from a single Saudi University (Taif University) participated in the present cross-sectional research. The English version of the ATR questionnaire scale was the main instrument for data collection. The scale consists of 32 items, each with a corresponding Likert scale answer option ranging from "1-strongly disagree" to "5-strongly agree." Those who scored higher exhibited a more positive attitude toward

research. Differences in research attitudes were analysed using the t-test and one-way Analysis of Variance (ANOVA).

Results: The mean age of the study population was 21.7 ± 1.4 years. All 60 (100%) participants were males, and 44 (73.3%) of the study subjects were in the age group of 21 to 23 years. A total of 32 (53.3%) of the participants had high school research experience. The research attitude among nursing students had a composite mean score of 106.6 ± 18.4 . There was a statistically significant difference ($p < 0.05$) in mean attitude toward research scores among different age groups, types of secondary and high school graduates, and those with high school research experience.

Conclusion: The present study found a significant difference in ATR among nursing undergraduates concerning age, types of secondary and high school graduates, and high school research experience. Qualitative research might provide additional insights into the topic of attitude toward research among undergraduates.

Keywords: Anxiety, Education, Nursing research, Optimism, Usefulness for profession

INTRODUCTION

Research is a valued product of higher learning, and the incorporation of research information is fundamental to the delivery of nursing care. To ensure that current practices are based on scientific and trustworthy evidence, research may be utilised to either generate new information or validate and enhance existing knowledge [1-3]. Research in medical science is highly esteemed by the Saudi Commission for Health Specialties [4,5]. In Saudi Arabia, the Ministry of Education has provided financial incentives to encourage student participation in research at the university level [6]. The future of nursing relies on schools providing students with a strong foundation in research. Given the significance of research in shaping future nursing practices, it is imperative that it be included in the curriculum of undergraduate nursing programs [7,8]. Moreover, students can fully grasp the concept and value of nursing research through practical experience. Nevertheless, it has been observed that nurses often struggle to comprehend the relevance of nursing research to their daily work [9,10]. Additionally, the nursing research course must be prioritised since previous studies have indicated that it is the most challenging professional nursing course in the undergraduate program for students. Research enthusiasm, research engagement, and the utilisation of evidence-based nursing have all been associated with a positive research attitude [2,7,11,12]. Undergraduate students will play a pivotal role in shaping the future of nursing research, hence fostering positive attitude towards scientific research and exposing students to the research culture is essential for the advancement of the nursing profession [13]. It is a challenge, but nurse educators can help spark students' curiosity and nurture a more positive outlook on research [12,14,15]. While research

attitudes among nursing students worldwide have been extensively examined [16-20], little is known about the perspectives of Saudi nursing students. To the best of the researcher's knowledge, there is a scarcity of studies focusing on the perspectives of Saudi nursing students regarding research [16,17] and the factors that influence such perspectives. Understanding the factors that impact nursing students' perspectives on research is crucial, as evidenced by a review of the relevant literature [18]. Students' viewpoints on nursing research have been explored in various countries, highlighting the importance of doing so within one's own cultural context [8]. Efforts should be made to nurture and support students' interest in learning more about the value of research [19]. This research was conducted to address a knowledge gap and contribute to the existing understanding of these perspectives. Therefore, the purpose of the present study was to examine the factors influencing nursing students' ATR among Saudi undergraduates in their fourth year of nursing school.

MATERIALS AND METHODS

The present cross-sectional study was conducted in the Department of Nursing, Faculty of Applied Medical Sciences at Taif University, Taif, Saudi Arabia, over a duration of five months from March 2023 to August 2023. Taif University's Research Ethics Committee approved the study in March 2023 under the reference code (44-292).

Sample size calculation: Sampling was used to obtain the required number of study participants. The sample size was calculated using the Slovin's formula: $n = \frac{N}{1 + Ne^2}$, where: n = sample size, N = population size (65 male undergraduate nursing students in their fourth year), and e = acceptable margin of error (0.05).

Thus, $n = \frac{65}{1 + 65(0.05)^2} = \frac{65}{1.1625} = 55.91$. The sample size obtained was 55, rounded up to 60 study subjects of undergraduate nursing students in their fourth year at Taif University.

Study Procedure

The Bachelor of Science in Nursing (BSN) curriculum requires the nursing research subject as a core elective, and the students took the nursing research course during the first semester of 2023. The survey was conducted after the nursing research course had commenced, and the 60 undergraduate nursing students completed the survey questionnaire. The aim of the survey was clearly explained to participants, and they provided their consent to participate in the research before it began. Privacy and anonymity were maintained throughout the study.

The English version of the ATR questionnaire scale Papanastasiou EC [20] was utilised to collect data. The questionnaire link was distributed online through social media platforms, namely WhatsApp and Telegram. Students were requested to complete the questionnaire promptly. The ATR scale comprises a total of 32 items, divided into five factors. The first factor is research usefulness for the profession, consisting of nine items with a maximum score of 45 and a minimum score of 9. The second factor is research anxiety, with 8 items and a maximum score of 40 and a minimum score of 8. The third factor, labelled as 'positive ATR', comprises 8 items with a maximum score of 40 and a minimum score of 8. The fourth factor, 'relevance to life', includes 4 items referring to the use of research in a student's personal life, with a maximum score of 20 and a minimum score of 5. The final subscale, 'research difficulty', consists of 3 items, including 'having trouble with arithmetic' and 'finding it difficult to understand the concepts of research', with a maximum score of 15 and a minimum score of 3.

Each item was graded using a Likert scale ranging from "1-strongly disagree" to "5-strongly agree." Higher scores indicated a more positive attitude towards scientific research. The scale is prevalidated and demonstrates sufficient reliability across all five subscales of the ATR scale [20]. Research usefulness for the profession ($\alpha=0.93$), research anxiety ($\alpha=0.83$), positive attitude towards research ($\alpha=0.92$), research relevance to life ($\alpha=0.80$), and research difficulty ($\alpha=0.57$) all showed high levels of internal consistency reliability [20].

Demographic data, including age, gender, type of secondary and high school graduated from, as well as information on the researchers' background and experience, were also collected.

STATISTICAL ANALYSIS

The study data analysis was performed using Statistical Package for Social Sciences (SPSS) version 23.0. Differences in research attitudes were analysed using a t-test for independent samples and a one-way Analysis of Variance (ANOVA) since the normality test showed that the ATR scale scores did not substantially deviate from a normal distribution. The alpha value used for statistical significance was 0.05. $p < 0.05$ was considered the level of significance.

RESULTS

A total of 60 students in their fourth year of nursing participated in the present research; the majority were in the age group of 21-23 years. The mean age of the students was 21.70 ± 1.4 years. All the participants were males, and the vast majority (73.3%) had completed a governmental high school. Over half (46.7%) of students had conducted research while in secondary school, with the majority (53.3%) having done research while in high school. More than half of the participants had used the following research designs: descriptive, quantitative, or correlational study (40%), descriptive qualitative study (20%), experimental/quasi-experimental study alone (6.7%), and no research (33.3%) [Table/Fig-1].

Parameters	n (%)
Age (in years)	
<20	12 (20)
21-23	44 (73.3)
≥ 24	4 (6.7)
Gender	
Male	60 (100)
Female	0
Type of secondary school graduated	
Government	48 (80)
Private	12 (20)
Type of high school graduated	
Government	44 (73.3)
Private	16 (26.7)
Research experience in secondary school	
Yes	28 (46.7)
No	32 (53.3)
Research experience in high school	
Yes	32 (53.3)
No	28 (46.7)
Type of research conducted	
Descriptive, quantitative, or correlational study	24 (40.0)
Descriptive, qualitative study	12 (20.0)
Experimental or quasi-experimental study	4 (6.7)
I didn't conduct any research	20 (33.3)

[Table/Fig-1]: Demographic variables of the study participants (N=60).

The research attitude among nursing students had a composite mean score of 106.6 (SD=18.4). Comparing the mean research attitude scores with demographic variables of the study participants, our results revealed that students in the age group ≥ 24 years were observed to have lower attitude towards research scores (98.00 ± 0.00) compared to students in the age group of < 20 years (124.00 ± 19.20). The difference between the mean scores of different age groups was statistically significant. Age ($p < 0.001$), type of secondary school graduated ($p < 0.001$), type of high school graduated ($p = 0.003$), and research experience in high school ($p = 0.021$) were all shown to have statistically significant effects on nursing students' attitude towards research [Table/Fig-2].

Parameters	Mean \pm SD	T/F statistics	p-value
Age (in years)			
<20	124.00 \pm 19.20	8.52	<0.001
21-23	102.64 \pm 44.00		
≥ 24	98.00 \pm 4.00		
Gender			
Male	106.60 \pm 18.44		
Type of secondary school graduated			
Government	102.25 \pm 15.62	-4.12	<0.001
Private	124.00 \pm 19.20		
Type of high school graduated			
Government	102.45 \pm 16.32	-3.09	0.003
Private	118.00 \pm 19.64		
Research experience in secondary school			
Yes	102.71 \pm 21.08	-1.54	0.128
No	110.00 \pm 15.32		
High school research experience			
Yes	101.50 \pm 18.87	-2.38	0.021
No	112.43 \pm 16.38		

Type of research conducted			
Descriptive, quantitative, or correlational study	106.17±21.31	1.83	0.151
Descriptive, qualitative study	116.33±26.01		
Experimental or quasi-experimental study	96.00±00.00		
I didn't conduct any research	103.40±4.52		

[Table/Fig-2]: Comparison of the mean research attitude scores with demographic variables of the study participants (N=60).
SD: Standard deviation

However, students' views towards research did not change significantly ($p=0.128$) depending on the research experience in secondary school and by the kind of study they conducted, as shown by a one-way analysis of variance ($p=0.151$) [Table/Fig-2]. The means and standard deviations for the five subscales (factors) were as follows: research usefulness for the profession (24.0 ± 8.0), research anxiety (27.9 ± 8.0), positive attitude towards research (27.9 ± 8.7), research relevance ($M=12.5$, $SD=1.8$), and research difficulty (8.7 ± 2.9) [Table/Fig-3].

Maximum	Minimum	Values (Mean±SD)	No. of items	Subscales of ATR
45.00	9.00	33.5±10.8	9	Research usefulness for profession
40.00	13.00	24.0±8.0	8	Research anxiety
40.00	8.00	27.9±8.7	8	Positive Attitude Towards Research (ATR)
15.00	8.00	12.5±1.8	4	Research relevance to life
15.00	3.00	8.7±2.9	3	Research difficulty
147.00	82.00	106.6±18.4	32	Composite score

[Table/Fig-3]: Mean scores of the five subscales of the Attitude Towards Research (ATR) questionnaire.

DISCUSSION

The purpose of the present research was to examine the factors affecting nursing students' ATR. The research attitude among nursing students had a composite mean score of 106.6 ($SD=18.4$). A review also found that nursing students typically have a good attitude toward research [18]. Researchers have found similar positive ATR among nursing students in Saudi Arabia [2], Jordan [12], Turkey [13], Pakistan [21], and the United States [22]. This finding is significant because positive attitudes inspire more student engagement in academic research [8]. The research also indicated that there was a difference in research attitudes between nursing students who had completed their secondary or high education at public or private institutions ($p<0.05$). Very little research comparing the research attitudes of students at public and private schools has been published. Pupils may have acquired favourable attitude towards research since many public high schools in the country provide specific science subjects and urge them to perform investigatory projects and scientific studies. Students who have not been exposed to research methods before going to university often have negative attitudes and feelings when they are suddenly introduced to them [1,2]. However, further research is required to confirm the results of the present study.

In addition, students who had conducted research in secondary or high school were less enthusiastic about it than those who had not. Students' positive ATR may have been impacted by their participation in and exposure to research-related activities. Similarly, one study by Ünver S et al., found that students who had previously conducted research and engaged in scientific activities had higher positive attitude towards research than students who had never conducted any research before [13]. Positive research attitudes were associated with course completion ($p<0.001$) [8]. Thesis development had a similar constructive effect on students' research perspectives ($p<0.001$) [16,23]. It was also shown that taking a

research course or engaging in other research-related activities improved students' perspectives on the importance of research in the nursing profession [20]. The implementation of research courses in the preuniversity curriculum seems to have helped students [2].

In the present study, more than half of the participants were able to gain research experience while still in high school. The mean attitude score was also positively associated with age, with younger students having a more positive attitude towards research ($p<0.001$). The results suggest that boosting students' familiarity with research and their capacity and readiness to do it might lead to positive emotions about research and modify students' positions or attitude towards it. Students need to be encouraged to participate in research so that future generations of nurses are open to using its results in practice [17,24].

In the present study, the results of the ATR revealed that positive attitudes were seen in subscales research usefulness for the profession with a mean score of 33.5 ($SD=10.8$) and positive ATR 27.9 ($SD=8.7$). The positive results of the present study can be ascribed to the present study university's efforts, which are part of its mission and strategic goals, to establish an intense research environment in the nursing program. Comparable results were observed in a study by Al Furaikh S et al., among King Saud University, Riyadh, Knowledge, Skills and Abilities (KSA) level 5-8 undergraduate medical students [2]. Of these, 68.4% of nursing students expressed a positive attitude towards research and believed that the scientific investigation of the phenomenon is essential, required, and of utmost importance to their clinical practice and training program.

In the present study, students in the age group of ≥ 24 years were observed to have lower mean attitude towards research scores (98.00 ± 0.00) compared to students in the age group of <20 years (124.00 ± 19.20) ($p<0.001$). The present result is consistent with a study conducted in the United States by Burrell SA et al., which found that students between the ages of 18 and 19 years had significantly more positive attitudes about participating in nursing education research with a mean of 38.47 ($SD=4.44$) than students who were 20 to 21 years old with a mean of 36.59 ($SD=5.08$) ($p=0.028$) [22]. However, in their research, Meraj L et al., stated that older medical students showed more positive attitudes than their younger peers [25].

Additionally, students' views towards research did not change significantly ($p=0.128$) depending on the research experience in secondary school and the type of study they conducted, as shown by a one-way analysis of variance ($p=0.151$). Abu-Zaid A and Alnajjar A stated that medical students with prior scientific research experience showed more positive attitude towards scientific research than those without [26]. In a study conducted in Saudi Arabia by Al-Hilali SM et al., results showed that 44.4% of undergraduate medical students had positive attitude towards health research because they believed that their previous experiences and skills in conducting research had facilitated their personal development [27]. The literature's findings demonstrate how research experience benefited nursing students' professional identities, improved their ability to think and make decisions, and enhanced their overall quality of life. Students' research experiences shape their outlook on conducting research and foster a positive attitude. Lastly, these experiences have an impact on their postgraduation professional roles and future. Therefore, school directors should plan and facilitate student engagement in scientific activities, and educators can encourage students to read scientific nursing publications and participate in scientific research projects to help nursing students enhance their research skills. Nursing students' awareness of new advancements and trends in both national and international nursing may grow as a result of these activities, which may inspire them to explore the results of other cultures and engage in more scientific study.

Limitation(s)

Firstly, undergraduate nursing students at one Saudi Nursing School were surveyed about their attitude towards research. Since only one school was surveyed, the results cannot be generalised on a wide scale. Therefore, caution must be exercised when accepting and implementing the results of the present research. Secondly, the sample size was very small as it only included all the male students in the nursing department; hence, further studies with a larger sample size and across multiple nursing schools should be conducted.

CONCLUSION(S)

The present study found a significant difference in Attitude Towards Research (ATR) among nursing undergraduates with respect to age, type of secondary and high school graduation, and high school research experience. Qualitative research might shed a different light on the topic of attitude toward research among undergraduates.

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