The Open Public Health Journal
DOI: 10.2174/0118749445282637240322073005, 2024, 17, e18749445282637
ISSN: 1874-9445

RESEARCH ARTICLE **OPEN ACCESS**

Attitude of "AAB College" Nursing Students Towards Scientific Research

Edona Haxhija[1,*], Zamira Shabani[2], Armela Zylfo[1], Donika Shkoza[2] and Arlinda Ramaj[3]

[1]*Department of Nursing, Faculty of Nursing, University of Pristina "AAB College", Kosovo, Kosove*
[2]*Department of Nursing, Faculty of Natural Sciences, University of Shkodra"Luigj Gurakuqi", Shkodër, Albania*
[3]*Epidemiological and Environmental Health Department, Tirana Health Care Unit, Tirane, Albania*

Abstract:

Aims: AAB College is a non-public institution that dates back to 2017, and during its internal evaluation, the involvement of nursing students in scientific research has appeared problematic, so the purpose of this study is to first identify the attitude of nursing students towards scientific research only in this college later in the near future we will compare with a public institution.

Background: Since higher education institutions are subject to accreditation, and one of the key points is scientific research and the involvement of students in this process, we thought of investigating this issue. It is necessary for nursing students to have a culture of scientific research because this affects the increase of their performance in school, at work and also in the improvement of the quality of service to patients. Nursing students should be initiated into the research culture and adopt positive attitudes toward scientific research during their undergraduate education to improve the nursing profession, contribute to the professionalization of this profession, and maintain quality of care, nurse autonomy, and power. This research should transmit, promote, and protect knowledge in the improvement of teaching, scientific research, and community services.

Objective: Cross-sectional descriptive statistics were used to summarize the importance of research to nursing students, the time students spend on research, student attitudes toward science, how collaborative research professors were with students, and the motivation provided to students by faculty or professors.

Methodology: Data collection was carried out during January - June 2022. The sample was randomly selected. In this study, 300 students of "AAB College" were included. Students were given a questionnaire administered by us. To perform the statistical analysis, we used the SPSS program 19 version and Microsoft Office 2010.

Results: The minimum age of the students who were interviewed is 18 years. 64% of these students are female (n=192), and 36% are male (n=108).

Conclusions: The largest percentage of students state that scientific research is "Very important" for them. The lectures related to research in nursing have "a lot of influence" on their formation. Students spend "Enough" time or energy on scientific research. The faculty/college where they study does not offer them support for studies or scientific activities. The majority of students have not participated in any scientific activity, but students who have been active or passive participants in scientific activities are referred to being provided with training certificates. Students feel "enough" motivated to carry out scientific work in the nursing field.

Keywords: Conference, Nursing, Perception, Research, Science, Students.

*Address correspondence to this author at the Department of Nursing, Faculty of Nursing, University of Pristina "AAB College", Kosovo, Kosove;
E-mail: edona.haxhija@universitetiaab.com

Cite as: Haxhija E, Shabani Z, Zylfo A, Shkoza D, Ramaj A. Attitude of "AAB College" Nursing Students Towards Scientific Research. Open Public Health J, 2024; 17: e18749445282637. http://dx.doi.org/10.2174/0118749445282637240322073005

Received: October 18, 2023
Revised: March 12, 2024
Accepted: March 13, 2024
Published: April 22, 2024

1. INTRODUCTION

Nursing is a dynamic profession that functions as a social, applied, and empirical science [1, 2]. Nursing studies investigate not only human beings but also their experiences and approaches, events, and problems in a questioning manner, delivering rational and evidence-based solutions to problems in light of available information and science [2].

Basing nursing practices on scientific information brings professional identity to the profession [3]. Scientific attitude is when a student thinks like a scientist, while attitudes toward science include a student's interest in scientific ideas, their opinion of scientists, and the responsibility they have for science in society [4]. To sustain professionalism, members of a profession must be curious, investigative, open to learning, innovative, creative, and independent; cooperate with members of other professions; have critical analytic thinking abilities; implement evidence-based care; and evaluate outcomes [1, 5]. To bring scientific qualifications to a profession, its members should recognize the problems they face, determine the problems and variables related to the problem, and find solutions to these problems using scientific research processes [1, 6, 7].

Nurses have embraced the necessity of doing scientific research to respond to the expectations worldwide for rapid and continuous improvement [8]. A dominant area of attitudinal research has found a link between students' attitudes toward a subject and their ability to succeed in a subject area [9]. As attitudes toward science become more positive, the motivation to learn science content also increases [10]. According to Young (1998) [11], attitudes toward science can be considered quite stable; however, with intervention, students can learn new things that change their attitudes. This malleability is important, as a person's attitude about a subject and their motivation are related to behavior. Osborne *et al*. (2003) [9], studies have found links between motivation and attitudes towards science. As students perceived the information as valuable, their attitudes toward the topic also became more positive [12]. Despite the chances of being staffed at the universities as nurse academicians being very limited, evidences also indicate that there is an increasing interest of Turkish nursing and midwifery students in scientific activities during their undergraduate education for a few years, although it is not essential and necessary to be a nurse or midwife in practice. Therefore, national and international students' congresses are organized at which increasing numbers of students attend from year to year [13].

AAB College is the largest non-public institution of higher education in the Republic of Kosovo and in the region. Currently, AAB counts a total of 14 faculties that offer study programs at the BA and MA level. The Faculty of Nursing at AAB College is a relatively new faculty, and it was initially accredited with the Bachelor program in 2016-2017.

The Faculty of Nursing has as a strategic objective the preparation of nurses who will implement specialized practices in narrow areas of nursing and, in this way will contribute to the advancement of health services as a whole. Students of the Faculty of Nursing benefit on the basis of scientific knowledge from a comprehensive approach to the role of nursing in promoting health for individuals, families, and the community in general, which aims to prevent and control diseases, as well as preserve and improve the health of the population.

In the field of research and scientific research, the Faculty of Nursing has marked a significant improvement. Research and its further development is an essential point of the Faculty of Nursing of AAB College so that through scientific research we can understand the world through observation, analysis, and interpretation.

The goal of the Faculty of Nursing at AAB College is the growth and development of research projects within the faculty. Every research carried out should serve to improve teaching and bring new data about the current situation of the community. The priority of the Faculty of Nursing is the engagement of students in research projects, taking into account the fact that students in the future will be the generation that will be part of health policies, will affect the real health situation and must be trained to improve these barriers or deficiencies.

These researches should transmit, promote, and protect knowledge in the improvement of teaching, scientific research, and community services. If we want to encourage nurses to do research and increase the utilization of research results, greater effort should be invested in teaching research methodology, introducing more flexible working hours and developing other support systems [14].

Therefore, it is important to understand the attitudes of nursing students toward scientific research. As undergraduate nursing education is a three year degree program in Kosovo. The purpose of this study was to determine the attitudes toward scientific research of nursing students in all three academic years; later in the near future, we will compare with a public institution.

2. MATERIAL AND METHODS

2.1. Participants

From a total of 750 bachelor and master nursing students, initially, we tried to include 350 students, but 50 of them refused to cooperate, therefore 300 students were finally included in this study [15]. The minimum age of the interviewed students is 18 years, while the prevalent age is the age group above 21 years. Sixty-four percent of these students are female (n=192) and 36% are male (n=108). This is justified because the largest number of students in the nursing department are female. The interviewed students are bachelor and master level, where the highest percentage of participation in this study is the third-year bachelor students with 43% (n=129) while the lowest percentage of participation is the first-year students with 9.7% (n=29).

2.2. Measures

The participants who completed the questionnaire were only nursing students at AAB College. The questionnaires for the students were carried out in the Nursing department of the "AAB College" inside the auditorium. Before starting the questionnaires, the consent of the students who wanted to participate in the study was obtained.

The questionnaire was translated and back-translated and submitted for evaluation by an expert. We have previously piloted it with 20 students, and the reliability level is 80%, and the validity is 85%. The period of six months is justified due to the fact that the questionnaire was distributed in hard copy and face to face. We also used the time when they were in the auditorium, but the fact is that when one year is in the auditorium, the next year is in professional practice. This has taken us time to administer the questionnaire and enter the data.

2.3. Procedure

Data collection was carried out in the period January - June 2022. The sample was selected randomly. Since this questionnaire was done in the auditorium, first ten students of each group were chosen. In each group, the first half of the list of students was taken. This is how the sample of almost 50% of the students for the second and third year was reached. Meanwhile, the first-year students refused, and we managed to get only 29 students, keeping in respect the same selection method. Students were given a questionnaire administered by us. The questionnaire contained 10 questions through which we obtain the necessary information regarding the attitude of nursing students towards scientific research, such as (the importance of scientific research for students, the time they spend researching, how many participants they are in conferences, the support that offered to them by the faculty and professors, *etc*.).

To perform the statistical analysis, we used the SPSS program, version 19 and Microsoft Office 2010. At first, we analyzed the distribution of independent and dependent variables. Then, we analyzed whether there is a link between the independent and dependent variables. The independent variables include age and gender (male *vs*. female, academic year). We included questionnaire questions in the dependent variables. We took two hypotheses, specifically the null hypothesis and the alternative one. Null hypothesis: There is no correlation between age, gender, academic year, and students' attitudes towards scientific research. Alternative hypothesis: There is a correlation between age, gender, academic year, and students' attitudes towards scientific research. The research was limited by the refusal or non-participation of the first-year students as well as the duration (6 months) of the administration of the questionnaire because the students were not all present in the auditorium at the same time. The system is such that one year is in practice, and the next year is in the auditorium. Therefore, we had to wait for the students of all years to be involved.

3. RESULTS AND DISCUSSION

The most prevalent age in our study is the age group over 21 years 51%, followed, respectively, by the age 19 years, 22%, 20 years, 21.7%, and 18 years 5.3%. Sixty-four percent of the participants in the study are female, and 36% of the participants are male.

The highest percentage of participants in this study are third-year students at 43%, followed by second-year students at 30.7%, and then master students at 16.7%, while the lowest percentage of participation in this study is for first-year students at 9.7% (Table **1**).

When the students were asked about the importance of scientific research, 59% of students answered that scientific research is very important, 31.7% sufficiently important, 6% slightly important, and 3.3% stated that it is not at all important (Table **2**).

About the impact of lectures related to nursing research on them, 60.7% of students stated that scientific research is very important, 32.7% stated that scientific research is sufficiently important, 5.3% of students stated that scientific research is slightly important and 1.3% of students stated that scientific research is not at all important (Table **2**).

30.7% of students spend a lot of time or energy on scientific research, 41.7% of students spend enough time, 24.3% of students reported spending little time, and 3.3% of students reported spending not at all time or energy on scientific research (Table **2**).

Table 1. Demographic data.

Frequency (%)		
Age (Years old)	18	16 (5.3)
	19	66 (22)
	20	65 (21.7)
	≥21	153 (51)
Gender	F	192 (64)
	M	108 (36)
Academic Year	I	29 (9.7)
	II	92 (30.7)
	III	129 (43)
	Master	50 (16.7)

When they were asked about their preparation for scientific methods and research skills, 42.3% of students stated that they were sufficiently prepared, 29.7% stated they were little prepared, 21.3% stated they were very prepared and 6.7% stated they were not at all prepared (Table **2**).

The majority of students, *i.e*. 37.7%, expressed that they feel motivated enough to carry out scientific work in the nursing field, 34% feel very motivated, 21.3% feel a little motivated, and only 7% feel not at all motivated (Table **2**).

As we can see in Table **3**, 58.3% of students said that it is very important to understand scientific concepts and strategies that nurses should be good at research, 33.3% said that it is somewhat important, while 8.3% said that it

is irrelevant. Moreover, 52.7% of students said that it is very important to be creative, 40.3% of students said that it is somewhat important, while for 7% of students it is totally irrelevant. About the importance of understanding how science is used in the nursing field, 58.7% of students said that it is very important, 35% stated that it is somewhat important, while 6.3% said it is totally irrelevant. In our study, 64.3% of students said that the reasoning for supporting the conclusions is very important, 30.7% stated that it is somewhat important, while 5% of them said totally irrelevant (Table **3**).

As we can see from Table **4**, 49.7% of students agree that science is mainly an abstract subject, 27% disagree, 15.7% strongly agree, and 7.7% answered strongly disagree. About the statement that science is mainly a formal way of representing the real world, 57.3% of students agree with this statement, 24.7% strongly agree, 12% disagree, and 6% strongly disagree.

While about the statement, "Science is mainly a practical and structured guide for addressing real situations," 55.7% of students agree, 26% strongly agree, 12.3% disagree, and 6% of them strongly disagree.

About the statement of students regarding having a natural talent for science, 44.3% of them agree, 29% strongly agree, 18.7% disagree, and 8% strongly disagree.

Regarding the statement, it is important that professors should give students prescriptive and sequential directions for doing research papers, 48.3% agree, 39% strongly agree, 6.7% disagree, and 6% strongly disagree. About the item of necessary and efficacy of science assignment, 43.7% of students agree, while 21.7% disagree, 21.7% strongly agree, while 13% of them strongly disagree.

Table **5** shows the results regarding the time spent in the research class for individual work or group work, with or without the help of the professor. We can see that the students spent several hours in scientific research from the time dedicated to this purpose, regardless of the nature of the organization's work, individually with or without help, as well as in groups with and without help.

Regarding individual work without the help of the professor, 58% of students answered that in some lessons, they work individually without the help of the professor, 20% of them never work, 18.3% work in most lessons, and 3.7% of them work in every lesson.

Regarding individual work with the help of the professor, about 40.3% of students answered that in some lessons, they work with the help of the professor, 32% work in most lessons, 16% reported that they never work, while 11.7% reported that they work in every lesson.

While about working in pairs or small groups without the help of the professor, 46% of students answered that they work on some lessons, 26% of students answered that they work on most of the lessons, 16.7% of students answered that they never work, while 11.3% of students answered that in every lesson they work in small groups without the help of the professor. Regarding working in pairs or small groups with the help of the professor, 44.7% of the students answered that they work in some lessons, 31% answered that they work in groups during most of the lessons, 13.3% answered every lesson, while 11% answered that they never work with the help of the professor.

Table 2. Students' perceptions regarding the scientific research.

Question	Q1. Distribution According to the Perception of the Importance of Scientific Research N (%)	Q2. Distribution of Impact of Lectures Related to Nursing Research N (%)	Q3. Distribution of Time Spent on Scientific Research N (%)	Q7. How Prepared do you Think you are about Scientific Methods and Research Skills N (%)	Q10. How Motivated do you Feel to do Scientific Work in the Nursing Field N (%)
Not at all	10 (3.3)	4 (1.3)	10 (3.3)	20 (6.7)	21 (7)
Slightly/Little	18 (6)	16 (5.3)	73 (24.3)	89 (29.7)	64 (21.3)
Sufficiently/Enough	95 (31.7)	98 (32.7)	125 (41.7)	127 (42.3)	113 (37.7)
Very /A lot	177 (59)	182 (60.7)	92 (30.7)	64 (21.3)	102 (34)
Frequency N (%)	300 (100)	300 (100)	300 (100)	300 (100)	300 (100)

Table 3. Students` perceptions of ability in scientific research.

Q4: For a Nurse to be Good at Research, how Important do you Think it is for you to:	4.1 Understand Scientific Concepts, Principles and Strategies N(%)	4.2. Be Creative N (%)	4.3 Understand how Science is used in the Nursing Field N (%)	4.4 Be able to Provide Reasons to Support their Conclusions N(%)
Irrelevant	25 (8.3)	21 (7)	19 (6.3)	15 (5)
Somewhat important	100 (33.3)	121 (40.3)	105 (35)	92 (30.7)
Very important	175 (58.3)	158 (52.7)	176 (58.7)	193 (64.3)
Frequency N (%)	300 (100)	300 (100)	300 (100)	300 (100)

Regarding the support that the college offers to the student to carry out studies and participate in scientific activities, the largest percentage of students 53% stated that the college does not offer them support for scientific activities, compared to 47% of students who stated that the faculty where they study offers them support for scientific activities (Table **6**).

Regarding active or passive participation in a conference, 59.7% answered that they have not participated in any scientific activity, while 40.3% answered that they participated in scientific activities (Table **6**).

Regarding the equipment with training certificates for participation in scientific activities, the majority of students, 84.3%, stated that they were equipped with training certificates and 15.7% were not provided with a training certificate after participating in the scientific activity (Table **6**).

Table 4. Students` perceptions about the ability in scientific research.

Q5: To what Extent do you Agree or Disagree with each of the following Statements:	5.1. Science is Primarily an Abstract Subject	5.2. Science is Primarily a Formal Way of Representing the Real World	5.3. Science is Primarily a Practical and Structured Guide for Addressing real Situations	5.4. Some Students have a Natural Talent for Science and Others do not	5.5 It is Important for Professors to Give Students Prescriptive and Sequential Directions for Doing Research Papers	5.6 Students see a Science Assignment as an Unnecessary Burden and not at all Effective
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Strongly disagree	23 (7.7)	18 (6)	18 (6)	24 (8)	18 (6)	39 (13)
Disagree	81 (27)	36 (12)	37 (12.3)	56 (18.7)	20 (6.7)	65 (21.7)
Agree	149 (49.7)	172 (57.3)	167 (55.7)	133 (44.3)	145 (48.3)	131 (43.7)
Strongly agree	47 (15.7)	74 (24.7)	78 (26)	87 (29)	117 (39)	65 (21.7)
Total	300 (100)	300 (100)	300 (100)	300(100)	300 (100)	300 (100)

Table 5. Distribution according to working hours for scientific research.

Q6: During the Research Hour, how often do you:	6.1 Work Individually without the Help of the Professor N (%)	6.2 Work Individually with the Help of the Professor N (%)	6.3 Work in Pairs or Small Groups without Help from the Professor N (%)	6.4 Work in Pairs or Small Groups with Help from Professor N (%)
Never	60 (20)	48 (16)	50 (16.7)	33 (11)
Some lessons	174 (58)	121 (40.3)	138 (46)	134 (44.7)
Most lessons	55 (18.3)	96 (32)	78 (26)	93 (31)
Every lesson	11 (3.7)	35 (11.7)	34 (11.3)	40 (13.3)
Total N(%)	300 (100)	300 (100)	300 (100)	300 (100)

Table 6. Support and participation in scientific activities of students.

Questions	Q8: Does the Faculty or Institution where you Study or Work Offer you Support (Financial, Emotional, *etc.*) to Carry out Studies and Participate in scienTific Activities N (%)	Q9a: Have you been an Active or Passive Participant in any Conference, Symposium or Scientific Activity N (%)	Q9b: If you have Participated in a Scientific Activity, have you Received a Training Certificate from that Activity in which you Participated N (%)
NO	159 (53)	179 (59.7)	19 (15.7)
YES	141 (47)	121 (40.3)	102 (84.3)
Total N (%)	300 (100)	300 (100)	121 (100)

Table 7. Correlations between age, gender, and academic year regarding the attitude towards scientific research (p-value, χ2).

Items	Gender	Age Groups	Academic Year
Q1	0.114	**0.011**	**0**
Q2	0.15	**0.042**	**0.003**
Q3	0.968	0.688	0.026
Q4.1	0.426	0.622	0.128
Q4.2	0.423	0.513	0.016

(Table 7) contd.....

Items	Gender	Age Groups	Academic Year
Q4.3	0.995	0.509	**0.047**
Q4.4	0.031	0.521	0.001
Q5.1	0.284	0.07	**0.021**
Q5.2	0.2	0.421	0.478
Q5.3	0.606	0.93	0.753
Q5.4	0.376	0.409	0.579
Q5.5	0.157	0.311	0.496
Q5.6	**0.024**	**0.031**	**0.001**
Q6.1	**0.012-**	0.859	0.55
Q6.2	0.238	0.077	0.323
Q6.3	0.098	0.25	0.12
Q6.4	0.985	0.086	**0.032**
Q7	0.848	0.656	**0.019**
Q8	**0.026**	**0.038**	0.07
Q9a	0.114	**0.000+**	**0.000+**
Q9b	0.18	**0**	**0**
Q10	0.849	0.075	**0.017**

Therefore,of the participants in our study, only 40% of them stated to being an active or passive participant in scientific activities. 84% of these participants stated to being provided with a training certificate, and 16% stated that they have not been provided with a training certificate (Table **6**).

We notice that there is a statistically significant difference between the first question of the questionnaire, age (p=0.011) and academic year (p=0). We can say that with increasing age, students are more likely to express that scientific research is essential.

We find that there are statistically significant differences between the impact nursing research lectures have on students' age (p=0.042) and academic years (p=0.003). Students in higher years are more likely to say that the lectures on scientific research have a lot of influence.

There is also a statistically significant difference between the importance of understanding the use of science in the field of nursing to be a good nurse and the academic year (p=0.047). As the academic year progresses, students are more likely to express that for being a good research student, it is essential to understand how science is used in the nursing field.

About the statement that science is mainly an abstract subject and the academic year (p=0.021), it appears that there is a statistically significant difference. Students in higher years are more likely to strongly agree that science is largely an abstract subject.

From the above table, we notice that there are statistically significant differences between the statements that students see the scientific task as an unnecessary, not at all effective load-related gender (p=0.024), age (p=0.031), or academic year (p=0.001). Male students, those of older age, as well as those of higher years of study are more likely to fully agree with the statement.

Regarding the frequency that students working individually without the help of the professor, the correlations with gender, age, or academic year are statistically significant only with gender (p=0.012-). Females are more likely to say that they work more hours individually without the help of the professor.

Regarding the frequency that students work in pairs or in small groups with the help of the professor, from the above table we see that there is a statistically significant difference between this statement and the academic year (p=0.032). Students in higher years are more likely to say that they spend fewer hours in pairs or small groups with the help of the professor.

There is a statistically significant difference between the opinions that students have regarding the skills they possess in scientific methods and the academic year (p=0.019). Students in higher academic years are more likely to express that they feel very prepared about scientific methods and research skills.

We note that there are significant statistical differences between the statements regarding the support provided by the faculty to participate in scientific activities by gender (p=0.026) and age (p=0.038).

Regarding active or passive participation in any conference, symposium, or scientific activity from Table 7 above, we notice that there are very significant differences between this statement and age (p=0.000+), as well as between this same statement and the academic year (p=0.000+). We can say that with increasing age and academic years, they are more likely to agree with the statement.

There are very significant differences between the certificate of participation, training, and age (p=0), as well as between this statement and the academic year (p=0). We can say that with the increase in age and academic years, they are more likely to say that they have received a training certificate from participating in a conference, symposium or scientific activity.

There is a statistically significant difference between the motivation to do scientific work in nursing and the

academic year (p=0.017). Students in higher academic years are more likely to express that they feel very motivated to carry out scientific work in the nursing field.

CONCLUSION

Based on the results of the study, it is noted that the largest percentage of students refer to scientific research as essential. Lectures related to research in nursing have a lot of influence on student formation. Students refer that it is essential to be creative and to understand the use of science in the nursing field. They agreed with the importance of giving continuous instructions to professors for the performance of scientific works. The students refer to that work individually and in small groups with or without the help of the professor for several hours of study. The faculty where the study does not offer support for scientific activities, the studentshave not participated in any scientific activity, but those students who have been active/passive participants in scientific activities are referred to being provided with training certificates. They feel sufficiently motivated to carry out scientific work in the nursing field. It is a fact that with the increase in age, students are more responsible and interested in their profession. Therefore, they require participation in trainings, conferences and symposiums. They are aware that in the future, they will be certified as professionals and will undergo continuous education; therefore they see it as an opportunity to prepare for this process. This is proven by the full participation of students in the second cycle of master's studies.

ETHICAL STATEMENT

This study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the AAB College at the meeting held on May 23, 2023.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available by request from the primary author [E.H].

FUNDING

This research was not funded by a grant.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

ACKNOWLEDGEMENTS

The authors express their sincere thanks to all participants who gave their opinions regarding the subject.

REFERENCES

[1] ADIGÜZEL O, TANRIVERDİ H, Özkan DS. Occupational professionalism and the case of nurses as the members of the profession. J Am Sci 2011; 9(2): 235-60. Available from: https://dergipark.org.tr/tr/download/article-file/705504

[2] Karagözoğlu Ş. Science, scientific research process and nursing. JHacett Univ Sch Nurs 2006; 13(2): 64-71. http://dx.doi.org/10.30958/ajhms.X-Y-Z

[3] KORKMAZ ÖG. Professionalism and nursing in Turkey. Hacett Univ Facul Heal Sci Nurs J 2011; 18(2): 59-67. Available from: https://www.hacettepehemsirelikdergisi.org/pdf/pdf_HHD_124.pdf

[4] Gardner PL. Attitudes to science. Stud Sci Educ 1975; 2(1): 1-41. http://dx.doi.org/10.1080/03057267508559818

[5] Laaksonen C, Paltta H, von Schantz M, Ylönen M, Soini T. Journal club as a method for nurses and nursing students' collaborative learning: a descriptive study. Health Sci J 2013; 7(3): 285. Available from: https://www.itmedicalteam.pl/articles/journal-club-as-a-method-for-nurses-and-nursing-students-collaborative-learning-a-descriptive-study.pdf

[6] Bökeoğlu OÇ, Yılmaz AG. The relationship between university students' attitudes towards critical thinking and research concerns. Educational Management in Theory and Practice 2005; 41(41): 47-67. Available from: https://dergipark.org.tr/en/download/article-file/108379

[7] Rezaei M, Zamani-Miandashti N. The relationship between research self-efficacy, research anxiety and attitude toward research: A study of agricultural graduate students. Journal of educational and instructional studies In the world 2013; 3(4): 69-78. Available from: https://www.arastirmax.com/en/publication/journal-educational-and-instructional-studies-world/3/4/69-78

[8] Aydin Y, Adıgüzel A, Topal EA. Determination of attitudes of midwives and nurses towards scientific studies. Journal Human Rhythm 2015; 1(4): 168-75. Available from: https://dergipark.org.tr/en/download/article-file/105574

[9] Osborne J, Simon S, Collins S. Attitudes towards science: A review of the literature and its implications. Int J Sci Educ 2003; 25(9): 1049-79. http://dx.doi.org/10.1080/0950069032000032199

[10] Maynard Wang MN, Wu KC, Iris Huang TC. A study on the factors affecting biological concept learning of junior high school students. Int J Sci Educ 2007; 29(4): 453-64. http://dx.doi.org/10.1080/09500690601073152

[11] Young T. Student teachers' attitudes towards science (STATS). Eval Res Educ 1998; 12(2): 96-111. http://dx.doi.org/10.1080/09500799808666934

[12] Dalgety J, Coll RK, Jones A. Development of chemistry attitudes and experiences questionnaire (CAEQ). J Res Sci Teach 2003; 40(7): 649-68. http://dx.doi.org/10.1002/tea.10103

[13] BALKAYA NA, ÇEVİK ND, NALBANT MA, *et al*. Why nursing and midwifery students do research and participate in scientific activities? Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi 2014; 4(3): 1-6.

[14] Kuuppelomäki M, Tuomi J. Finnish nurses' views on their research activities. J Clin Nurs 2003; 12(4): 589-600. http://dx.doi.org/10.1046/j.1365-2702.2003.00756.x PMID: 12790873

[15] Population Proportion : Sample Size. https://select-statistics.co.uk/calculators/sample-size-calculator-population-proportion/