

Current status of scientific research of nursing students at Hue University of Medicine and Pharmacy

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Abstract

Background: Experiences of performing scientific research are significantly to enhance nursing evidence-based practice. This study aimed to describe the current status of scientific research of nursing students, and identify attitudes of nursing students toward scientific research at Hue University of Medicine and Pharmacy, Hue University. **Materials and methods:** Retrospective study and a cross-sectional study design were used. A sample of 47 Bachelor's thesis in nursing and 516 nursing students at University of Medicine and Pharmacy, Hue University was involved. Data were collected using a questionnaire, which including: (1) General characteristics, (2) "Critical appraisal checklist for cross-sectional study toolkit", and (3) "The Nursing students' attitudes towards and awareness of research and development within nursing scale". Multivariable regression analyses were used to find the associated factors of attitude toward scientific research. **Results:** Most of undergraduate theses ensure quality assurance in research. Overall, attitude of scientific research among nursing students is moderate. Year of study, ranked academic, read scientific research regularly, and plan to participate in scientific research were significantly associated with attitudes toward scientific research. **Conclusion:** There is a need to motivate nursing students to participate in scientific activities through provide research and offer opportunities for them to do scientific research.

Key words: *scientific research, attitude, awareness, nursing students.*

1. BACKGROUND

Scientific research is regarded as one of the most crucial activities of students at universities of education. Scientific research is necessary within practice to promote evidence-based practice, patient safety and quality of care [1,2]. Having strong scientific research experience among nursing students enhance responding to expectations worldwide for rapid and continuous improvements [3].

Scientific research help students to developing critical thinking, teamwork skills, and problem solving [1,4]. Nursing students were able to appreciate crucial research for practice, the importance of conducting research to ensure optimal patient outcomes, and the value of research for knowledge advancement in the nursing profession [5]. However, students had rarely experience in scientific activities [3,4], thus enhancing educational strategies would support them to integrating evidence based practice in clinical practice as well increasing research methodology [4]. The aim of this study was to:

- *To describe the current status of scientific research of nursing students from 2017 to 2021.*

- *To identify students' attitudes of nursing students toward scientific research at Hue University of Medicine and Pharmacy, Hue University; and related factors.*

2. MATERIALS AND METHODS

Study design: Retrospective study and a cross-sectional design was used in this research from January 2022 to September 2022.

Participants: In retrospective study design, 47 nursing undergraduate theses were selected from 2017-2021. In a cross-sectional study design, nursing students from freshmen to final year students at the University of Medicine and Pharmacy, Hue University, who agreed to participate in the research were recruited. The sample size was calculated using WHO Sample size software [6] with $1-\alpha = 95$, $d = 0.05$, $\epsilon = 1$, $\mu = 0.05$, $\sigma = 0.55$, and adding 10% drop-out rate. In total, 516 nursing students participated in this research.

Data Collection Tools: the pre-designed instruments include general characteristics, critical appraisal tool [7] and the Nursing students' attitudes towards and awareness of research and

development within nursing scale [8]. Critical appraisal tool developed by Center for Evidence based management, consists of 12 items, which addressed the internal validity and risk of bias of case series design [7]. The Nursing students' attitudes towards and awareness of research and development within nursing scale was developed by Bayik et al [8]. This scale consists of 29 items with a five-point Likert scale. The tool was showed to be reliable with internal consistency reliability coefficient of 0.89 for the total scale in original scale. This instrument was translated into Vietnamese language through back translation process [9], and coefficient of reliability in this study was 0.81.

Data Collection: nursing students were recruited when they attended lecture at the university. The researchers explained the content and purpose of this study using instructions and distributed questionnaire to the nursing students who agreed to participate. Students completed questionnaires through google form to reducing missing data.

Data Analysis: using SPSS 20.0 software. Statistical algorithms used in the study include

frequency calculation, percentage calculation, and multivariate regression.

Ethical Considerations: an ethical review of this study was allowed for exemption by Hue University of Medicine and Pharmacy where data were collected. Subjects volunteered to participate in the study and the information was used for research purposes. Only the members of our research team could access the collected questionnaires.

3. RESULTS

3.1. Status of scientific research of nursing students

Table 1 shows characteristics of bachelor's thesis, which was completed from 2017 to 2021. Most of the students chose internal medicine (48.9%) as their research area. The only study design was found in all theses were a cross-sectional study design. All undergraduate theses describe clearly research question, methodology design, sampling, sample size, analyzing data, and applying result in organization (Table 2). There is a rate of 12.8% thesis did not mention about the valid and reliable of the instruments.

Table 1. General characteristics of bachelor's thesis of nursing students (N = 47)

	Characteristics	Quantity	Ratio (%)
The research area	Internal medicine Nursing	23	48.9
	Surgical Nursing	6	12.8
	Obstetrical Nursing	7	14.9
	Pediatric Nursing	9	19.1
	Psychological Nursing	1	2.1
	Intensive Care Nursing	1	2.1
Research methodology	Cross-sectional study	47	100.0
Dissertation year	2017	12	25.5
	2018	12	25.5
	2020	9	19.1
	2021	14	29.8

Table 2. Status of critical appraisal thesis of undergraduate thesis (N = 47)

Characteristics	n	%
Did the study address a clearly focused question/issue?	47	100
Is the research method (study design) appropriate for answering the research question?	47	100
Is the method of selection of the subjects (employees, teams, divisions, organizations) clearly described?	47	100
Could the way the sample was obtained introduce (selection) bias?	47	100

Was the sample size based on pre-study considerations of statistical power?	Yes	17	36.2
	No	30	63.8
Was the sample of subjects representative with regard to the population to which the findings will be referred?	Yes	47	100
	Yes	28	59.6
Was a satisfactory response rate achieved?	No	17	36.2
	Can't tell	2	4.2
	Yes	29	61.7
Are the measurements (questionnaires) likely to be valid and reliable?	No	6	12.8
	Can't tell	12	25.5
Was the statistical significance assessed?	Yes	47	100
Are confidence intervals given for the main results?	Yes	47	100
Could there be confounding factors that haven't been accounted for?	Yes	47	100
Can the results be applied to your organization?	Yes	47	100

3.2. Attitudes of nursing students towards scientific research

As shown in Table 3, a total of 516 samples were recruited for this study. Most nursing students are female with 93.4%. Students with academic achievements in the previous semester got good with 48.4%. There are 74.8% students who have never participated in scientific research activities/courses, 77.9% students do not read scientific research articles regularly, 89.3% students do not plan to do scientific research activities. Most of students did not publish papers in scientific journals, and never participated to collecting data.

Table 3. Characteristics of the nursing students (n = 516)

Variables	n (%)	
Age = 20,01 (1,21)	18 - 20	336 (65.1)
	21 - 24	180 (34.9)
Gender	Male	29 (5.6)
	Female	482 (93.4)
	LGBTQ+	5 (1.0)
Residence	Urban	186 (36.0)
	Rural	330 (64.0)
Ethnic	Kinh	488 (94.6)
	Other	28 (5.4)
Year of study	1 st year	189 (36.6)
	2 nd year	149 (28.9)
	3 rd year	91 (17.6)
	4 th year	87 (16.9)
Religion	Buddhism	127 (24.6)
	Christian	19 (3.7)
	Protestantism	4 (0.8)
	No religion	347 (67.2)
	Other	19 (3.7)

Ranked academic	Excellent	11 (2.2)
	Very good	77 (14.9)
	Good	250 (48.4)
	Average	178 (34.5)
Participate scientific meetings/nursing research course	Yes	130 (25.2)
	No	386 (74.8)
Having often read research article	Yes	114 (22.1)
	No	402 (77.9)
Having participated a research activity	Yes	55 (10.7)
	No	461 (89.3)
Having planned to do scientific research	Yes	135 (26.2)
	No	381 (73.8)
Having conducted scientific research	Yes	35 (6.8)
	No	481 (93.2)
Having published research article	Yes	11 (2.1)
	No	505 (97.9)
Having participated in data collection	Yes	91 (17.6)
	No	425 (82.4)

Table 4 presents the participant' attitudes towards and awareness of research and development in nursing. Students gave the lowest score in the section "I think it is interesting to read scientific articles about nursing care" with an average score of 3.03 (0.78), while the highest figure was found in the category "It is not meaningful to devote oneself to research in nursing" with an average score of 3.72 (0.99). The average score of attitudes of nursing students towards scientific is 98.43 (13.47).

Table 4. Attitudes towards and awareness of scientific research (n=516)

Items	Mean (SD)	Min-Max
As a nursing student, you must be able to read literature in English	3.13 (0.75)	1 - 5
I think it is interesting to read scientific articles about nursing care	3.03 (0.78)	1 - 5
Nursing science and nursing research describes nursing care and makes it visible	3.32 (0.75)	1 - 5
Research literature on nursing should be available at the workplace	3.07 (0.74)	1 - 5
Being involved in development work in nursing should be part of the nurse's job	3.34 (0.73)	1 - 5
I am keen to participate in international scientific conferences	3.09 (0.81)	1 - 5
Lecturers on the nursing education program are/should be a resource in the workplace to stimulate the development of nursing	3.26 (0.74)	1 - 5
A PhD for nurses should be prerequisite for certain senior positions in nursing	3.05 (0.77)	1 - 5
We should have more nurses in clinical work with a PhD/postgraduate education	3.26 (0.76)	1 - 5
The results of nursing research must be disseminated better to nurses in their work	3.32 (0.75)	1 - 5
Nursing research is essential for me in my development as a professional nurse	3.28 (0.76)	1 - 5
Nursing research is essential for me in my development as a professional nurse	3.14 (0.72)	1 - 5
Students on the nursing program are/should be resources in the workplace to stimulate the development of nursing	3.36 (0.79)	1 - 5
It is self-evident that the nursing profession should be based on scientific and reliable experience	3.38 (0.81)	1 - 5

Students should take the time to read research reports	3.11 (0.76)	1 - 5
Introducing changes and testing new ideas is very important in the nursing profession	3.23 (0.73)	2 - 5
I think the questions in this questionnaire are important	3.34 (0.85)	1 - 5
Participating in development work in nursing does not benefit nursing skills	3.47 (0.99)	1 - 5
The nursing profession does not require research-based knowledge to the same extent as the medical profession	3.56 (0.95)	1 - 5
The nursing profession is a practical profession and does not have to include research	3.63 (0.97)	1 - 5
It is not meaningful to get involved in development work in nursing	3.69 (0.91)	1 - 5
We do not need nurse scientists to develop patient care, the practice nurses can do that themselves	3.60 (0.99)	1 - 5
Nursing research complicates the ordinary work of nursing	3.59 (0.89)	1 - 5
Nursing research does not raise the status of the nursing profession	3.68 (1.03)	1 - 5
Further training in research and research-based studies is not important for the future	3.45 (1.03)	1 - 5
Taking part in research does not lead to greater professional skill as a nurse	3.64 (0.95)	1 - 5
It is unrealistic to believe one can apply research results to practical nursing	3.48 (0.96)	1 - 5
I do not bother to find out about research results	3.65 (0.93)	1 - 5
It is not meaningful to devote oneself to research in nursing	3.72 (0.99)	1 - 5
Mean score	98.43 (13.47)	77 - 142

As shown in *Table 5*, multivariate linear regression analysis was performed to define variables that correlated with attitudes towards and awareness of scientific research. The regression model was found statistically significant ($F = 37.23$). The model explained 22.2% of the variance in attitudes towards and awareness of scientific research ($R = 0.23$, adjusted $R^2 = 0.22$). The significant relationships were statistically determined in the positive way between attitudes toward scientific research and year of study ($\beta = 11.89$, $p < 0.001$); ranked academic ($\beta = 14.03$, $p < 0.001$); read scientific research regularly ($\beta = 3.07$, $p = 0.02$); and plan to do scientific research ($\beta = 5.87$, $p < 0.001$). It means that students at the 4th year with excellent academic results, reading research article regularly and planned to do scientific research are more likely to have positive attitudes toward scientific research.

Table 5. Factors associated with attitudes of nursing students towards scientific research (N = 516)

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Std. Error	Beta		
Year of study	11.89	1.47	0.33	8.08	< 0.001
Ranked academic	14.03	3.72	0.151	3.8	< 0.001
Having often read research article	3.07	1.32	0.09	2.32	0.02
Having planned to do scientific research	5.87	1.22	0.19	4.81	< 0.001
$R^2(\text{Adjusted } R^2) = 0.23 (0.22); F = 37.23$					

4. DISCUSSION

4.1. Status of scientific research of nursing students

A retrospective study is applied on 47 graduate theses of nursing students in 5 years, in which, there were 23 topics. This result is lower than the number of

undergraduate nursing thesis had done in 5 years from 2016 - 2020 at Nam Dinh University of Nursing (81 theses) [10]. The reason for this difference is that the number of nursing students at Nam Dinh University of Nursing is larger than the number of nursing students

in our study, while the number of students select to do thesis was calculated as a percentage of the total number of students of the course.

All theses use a cross-sectional descriptive research design in quantitative research. The reason why is that it considers as a simple research design, suitable to conduct scientific research from undergraduate students. The university and faculties should encourage students to use other research designs to improve their scientific research capacity. The number of theses each year is relatively stable, from 12 - 14 topics, only in 2020, there are the least number of theses over the period with 9 theses accounted for 19.1%. In 2020, there was outbreak of the COVID-19 pandemic, thus lack of contact research participants occurred due to social distancing measures against the epidemic, would be leading to students' apprehension in choosing to conduct a thesis [11].

The results of using the Critical appraisal checklist for cross-sectional study toolkit [7] to evaluate 47 theses mentioned above: all studies describe health issues of interest with appropriate research design, and sampling criteria and sampling methods are presented in detail. However, 61.4% of the studies with the questionnaire were evaluated for reliability and validity, 36.2% of the dissertations introduced the formula for calculating sample size. This result provides important information to help the educators develop measures to improve the quality of theses in particular and students' scientific research in general.

4.2. Attitudes of nursing students towards scientific research

The awareness of nursing students towards scientific research in this study is moderate with the overall average score of 98.43 (13.47). This result is lower than the study of Erkin et al in Turkey (2017), in which the group who attended and did not attend the nursing research course had an overall mean score of 121.49 (7.30) and 120.25 (6.60) [12]. It could be because students in our study have less experiences participating in scientific activities than students in Erkin's research.

In this study, results of the multivariate linear regression analysis have showed that year of study (4th), ranked academic, read scientific research regularly, plan to do, and participate to scientific research activities were significantly positively correlated with attitudes of students toward scientific research. Similarly, Halabi (2016) found an association between final year nursing students,

regular reading of scientific research articles/journals and positive attitude about scientific research [13]. This is also similarly with other researches, they showed that factor influenced awareness about scientific research including participated in scientific conferences, participated in scientific research activities conducted research, collected data for scientific research activities [1, 12]. In this study, prioritizing good students with opportunities to study and practice scientific research when making theses will motivate students to study; however, this inadvertently creates inequality in the opportunity to conduct research between high achieving and low achieving students. Therefore, it should have innovation strategies to promote scientific activities for all students in the training program.

Reading scientific studies is a good way for students to learn more about scientific research and report writing, while updating new knowledge to support evidence-based practice. According to Polit and Beck [14], reading scientific research articles and participating in scientific conferences are considered effective methods to develop research evaluation skills in education. The study was conducted by Toraman et al. (2017) shows that writing a thesis or research proposal has a positive effect on improving students' attitudes towards scientific research [15]. Therefore, students need to actively participate in scientific research activities, further, university and faculties need to organize activities related to scientific research in order to create conditions for students to have the opportunity to promote scientific research activities in order to increase awareness, attitude and capacity on scientific research.

5. CONCLUSIONS AND RECOMMENDATIONS

Research area of nursing students at Hue University of Medicine and Pharmacy, Hue University ranges in a wide range of fields, most of bachelor's thesis of nursing students ensure quality assurance in research. Results of our study show that the attitudes of scientific research on nursing students is at an average level. In which, the predictor affecting nursing research attitudes is a 4th year student with excellent academic performance in the previous semester, having read scientific research articles regularly, and planning to participate in scientific research activities. Therefore, it is necessary to promote scientific research on nursing students. Furthermore, students should actively participate in scientific research activities in order to promote and enhance their scientific research competencies.

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