

## Nurses' Attitudes Toward Nursing Research

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### Abstract

**Aim:** The aim of the study was to examine the attitudes of nurses towards research in nursing.

**Methods:** The study involved 202 respondents. The respondents were nurses employed at Osijek Clinical Hospital. The Boothe's Attitudes on Nursing Research Scale was used as an instrument of research – a modified version by Bostrom, A. C.

Prior to statistical data processing, respondents were divided into two groups, considering the level of education: vocational nurses and Bachelors of Science in Nursing.

By age, respondents were divided into three groups: aged 20 to 35, 36 to 50 and 51 to 65. The differences between the observed groups were tested by the t-test and analysis of variance.

**Results:** There is a statistically significant difference in attitudes towards research given the level of education of the respondents ( $p = 0.015$ ). Bachelors of Science in Nursing have more positive attitudes towards research ( $\bar{x}=148.5$ ) compared to vocational nurses ( $\bar{x}=141.1$ ). A significant difference in attitudes towards nursing research was determined also with respect to the age of respondents ( $p = 0.002$ ). Younger nurses have a more positive attitude towards research in nursing ( $\bar{x} = 151.5$ ) than middle-aged ( $\bar{x}=140.9$ ) and senior-aged nurses ( $\bar{x}=140.1$ ) do. There is also a significant difference in the level of motivation for continuing professional education given the respondents' level of education ( $p = 0.019$ ).

**Conclusion:** Nurses show mildly positive attitudes towards nursing research.

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## Introduction

"Nursing research is systematic inquiry designed to develop trustworthy evidence about issues of importance to the nursing profession" (1). Nursing research, in the narrow sense, refers to "a scientific process that validates and refines existing knowledge and generates new knowledge that directly and indirectly influences clinical nursing practice" (2).

Scientific research in nursing dates back to Florence Nightingale. Her data collection and analysis of factors affecting mortality and the illness of soldiers during the war resulted in changes in health care (3). More precisely, although F. Nightingale recommended conducting clinical nursing research back in the mid-19th century, it was almost 100 years later that most nurses accepted her counsel. Still, there is reason for optimism. The number and quality of research in nursing is growing today (4). With the development of nursing education in the Republic of Croatia, the number of research projects in the field of health care has increased. However, in comparison to Western world countries, there is still not enough research in nursing in our country. The availability of nursing journals through online databases provides nurses in Croatia with a detailed insight into what has been hitherto investigated in the area of health care, allowing a comparison of the research results with those conducted in the world and facilitating the provision of evidence-based health care. Evidence-based clinical nursing practice represents a connection between nurses' personal experience and patients' value system on the one side and evidence on nursing and medical literature on the other (5). Evidence-based practice has shown correlation with better patient outcomes, as patient care decisions are then backed up by scientific evidence (6).

Research is an important factor in establishing and maintaining high standards of health care (7). Some of the limitations of scientific research application, both in general and in healthcare, are: moral or ethical problems, problems of complexity of human functioning, problems

related to measurement and control issues (8). Research shows that nurses find the following to represent main obstacles to research: lack of time, lack of interest and motivation, insufficient awareness of available research literature, insufficient authority to change the practice, lack of peer support, lack of support for the implementation of research findings in practice and insufficient understanding of the research process (6,9).

Some of the goals of nursing research are to promote evidence-based nursing practice, to secure the credibility of the nursing profession, to determine nursing practice responsibility, and to document the cost-effectiveness of nursing care (4).

Estabrooks et al. (10) have conducted an integrative review of literature and a meta-analysis of studies that deal with the impact of individual nursing personalities on research use. There were 20 studies involved in the meta-analysis, and 6 categories of potential individual characteristics were found, divided by the authors as follows: a) beliefs and attitudes, b) involvement in research activities, c) search for information, d) professional characteristics, e) education, and f) socio-economic factors. The authors concluded that all of these studies show methodological problems and it would be very difficult to suggest that any other individual characteristic, other than one's attitudes toward research, affects the use of research as such.

Attitude is an acquired, relatively durable and stable organization of positive or negative emotions, evaluations and responses to an object. Once formed, attitudes are resistant to change and are quite durable. Nevertheless, they can change under the influence of changed circumstances and new experiences. As the social behavior of a human is related to their attitudes, there is a great interest in examining attitudes in order to explain and predict behaviors or to influence behaviors by means of planned attitude-changing procedures (11).

Many studies have focused on the attitudes of nurses towards research, as well as on conditions that facilitate their implementation.

In 1989, Bostrom A. C. et al. conducted a survey on 720 Bachelors of Science in Nursing ("BSNs") and vocational nurses. The results of this study showed that both groups perceived that there was support for research activities both among their peers and in the hospital in which they were employed. They expressed their personal interest in participating in research activities and they strongly believed that clinical nursing practice was a suitable source of research in nursing. Lack of time was identified as a leading factor for their personal lack of involvement in research, as well as a lack of cost-effectiveness in terms of rewards or job promotions (9).

The results of Marsh and Brown's research, conducted in 1992 on 144 nurses employed in a private hospital, showed that nurses had mildly positive attitudes towards research. The degree of education was the only respondents' characteristic that was shown to be related to their attitudes (12).

Bjorkstrom and Hamrin concluded in their research that nurses generally have positive attitudes towards research. They found some discrepancies between age groups (younger nurses have a more positive attitude towards research) and in terms of the level of education (nurses with higher levels of education have more positive attitudes towards research) (13).

In 2007, Hofmeister examined the attitudes of nurses towards research and found that they had slightly positive attitudes. She also stated that, as the level of nurses' education increases, so do their positive attitudes towards research. She concluded that time, support and education are the main factors that could lead to more positive attitudes towards research (6).

A study conducted in Sweden on a sample of 1054 nurses was based on the attitudes of nurses towards research as well as their awareness and use of research findings. The results of the survey show that nurses generally have positive attitudes towards research (14).

The main purpose of this study is to examine attitudes of nurses towards research in nursing. Specific goals are focused on the following issues: 1) to investigate whether there is a difference in attitudes towards research in nursing with respect to the level of respondents' education, 2) to examine whether there is a difference in attitudes towards research in nursing with regard to the respondents' age; 3) to find out whether there is a difference in the level of motivation for continuing professional education given the level of respondents' education, and 4) to examine whether there is a difference in the level of motivation for continuing professional education with regard to the respondents' age.

## Materials and Methods

A cross-sectional study was conducted (15). The research was conducted in the period from May to August 2016 at Osijek Clinical Hospital. The study involved 202 respondents. The respondents were nurses employed at the Clinics, Institutes and Departments of Osijek Clinical Hospital. The research instrument used was Boothe's Attitudes on Nursing Research Scale, modified version by Bostrom A. C. (9), with prior permission to use. The original questionnaire has 46 questions. The question: "Nursing research is more essential in the medical setting than in the psychiatric setting" was eliminated from the questionnaire because of inappropriate application in our health system. The scale contains 3 subscales: *Interest and Environmental Support*, *Payoff and Benefits*, and *Barriers to Conducting Research*. Answers are given on the Likert 5-degree scale starting from 1 (*I completely disagree*) to 5 (*I completely agree*). The questionnaire results range in total from 45 to 225. A larger number indicates more positive attitudes towards research, while a high score on negative particles reflects negative attitudes. The total score on the first subscale can range from 20 to 100, on the second subscale from 17 to 85, and on the third from 8 to 40. Reliability coefficients for the whole questionnaire and for all three subscales have been calculated. Chronbach alpha for all the particles (with five reversed points) is 0.904. For the first subscale it

is 0.869, for the second subscale it is 0.839, and for the third subscale it is 0.439. The Hofmeister's study produced similar reliability coefficients for the three subscales (*Interest and Environmental Support* 0.879, *Payoff and Benefits* 0.844, and for the third subscale *Barriers to Conducting Research* it was 0.571) (6). The socio-demographic characteristics of respondents were collected through 6 questions (gender, age, level of education, workplace, level of motivation for further professional education and the number of nursing journals commonly read by the respondents). Prior to statistical data processing, the respondents were divided into two groups, with regard to the level of education: BSNs and vocational nurses. According to age, respondents were divided into three groups: aged 20 to 35, 36 to 50 and 51 to 65.

#### Statistical analysis

Categorical data were represented by absolute and relative frequencies. Numerical data were described by arithmetic mean and standard deviation. The differences between the observed groups (level of education, age) were tested by t- test and analysis of variance. After the analysis of variance as a post hoc analysis, Scheffe test was used. The level of significance was set at  $\alpha = 0.05$ . The analysis of the data obtained was done by SPSS for Windows (version 15.0, SPSS Inc., Chicago, IL, USA) (16).

#### Ethical principles

Prior to the research, the written consent of the Commission for Ethical and Vocational Issues of Nurses at the Clinical Hospital Osijek was obtained on 21st April 2016, as well as the written consent of the principal nurses of the Clinics and the Institutes where the research was conducted. The research was conducted in accordance with ethical principles and human rights in research.

## Results

The study involved 202 respondents, of whom 19 (9.4%) were male and 183 (90.6%) female. Out

of the total number of respondents, 98 (48.5%) were BSNs, and 104 (51.5%) were vocational nurses. The largest number of respondents worked at hospital departments (wards), 134 (66.3%). The age of respondents ranged from 21 to 64 (mean age was 40.4; SD = 11.2).

Overall results on the Boothe's Attitudes on Nursing Research Scale range from 89 to 198, with arithmetic mean of 144.7 (SD = 21.7). The results on the first subscale (*Interest and Environmental Support*) in this study range from 34 to 90, with an arithmetic mean of 62.7 (SD = 11.8), and the possible range from 20 to 100. On the subscale *Payoff and Benefits*, the results range from 29 to 76, with an arithmetic mean of 55.1 (SD = 10.0), and the possible range of 17 to 85. The results on the third subscale (*Barriers to Conducting Research*) range from 18 to 37, with an arithmetic mean of 26.9 (SD = 4.0), and the possible range from 8 to 40 (Table 1).

Average scores of individual particles for the three subscales are shown in Tables 2, 3 and 4.

BSNs have achieved a significantly higher total score on the Boothe's Attitudes on Nursing Research Scale compared to vocational nurses (t-test,  $p = 0.015$ ). A statistically significant difference between BSNs and vocational nurses has been found on the second subscale (*Payoff and Benefits*). In this subscale, vocational nurses score an average result of 53.1 (SD = 10.7), while the BSNs achieve the average score of 57.2 (SD = 8.7) (t-test,  $p = 0.003$ ). No statistically significant differences have been found between the observed groups on the two remaining subscales.

In order to determine differences in attitudes towards research according to the age of respondents, the subjects were divided into 3 age groups: 20 to 35, 36 to 50 and 51 to 65 years of age.

The analysis of variance confirmed that there was a statistically significant difference between the three age groups of respondents on the Boothe's Attitudes on Nursing Research Scale. A post hoc analysis (Scheffe test) confirmed the statistically significant difference between the first and the second age groups ( $p = 0.010$ ), and

**Table 1.** The attitudes of nurses toward nursing research

<b>The Boothe's Attitudes on Nursing Research Scale</b>	<b>min</b>	<b>max</b>	<b><math>\bar{x}</math> (SD)*</b>
Interest and Environmental Support	34	90	62.7 (11.8)
Payoff and Benefits	29	76	55.1 (10.0)
Barriers to Conducting Research	18	37	26.9 (4.0)
Total score	89	198	144.7 (21.7)

\* arithmetic mean (standard deviation)

**Table 2.** The average scores of individual particles for subscale Interest and Environmental Support

<b>Item</b>	<b>Interest and Environmental Support</b>	<b><math>\bar{x}</math> (SD)*</b>
1.	I would like to conduct research.	3.0 (1.3)
2.	I would like to put research high on my list of priorities.	2.8 (1.2)
4.	I believe my place of employment would provide me with ample assistance during the research process.	3.4 (1.1)
5.	I believe my place of employment would provide me with ample consultive assistance for conducting research.	3.5 (1.1)
6.	My supervisor would allow time in my daily assignment to conduct research.	3.3 (1.2)
8.	I know what is expected of me when submitting my research proposal to the hospital nursing research committee.	3.1 (1.0)
11.	I am familiar with selected statistical procedures used for the analysis of research findings.	2.9 (1.1)
12.	I believe my job provides the time necessary to conduct research.	2.4 (1.1)
13.	My colleagues (other professionals) would encourage me to conduct research.	3.3 (1.1)
14.	My peers in nursing would encourage conducting research.	3.5 (1.0)
15.	I believe my peers in nursing would assist in conducting research.	3.5 (1.0)
16.	My job provides ongoing educational programs in order to conduct research.	2.9 (1.1)
18.	I believe my working environment provides ample opportunity to conduct research.	3.3 (1.0)
19.	I believe my place of employment has ample secretarial assistance for anyone wishing to conduct research.	2.9 (1.1)
20.	I believe my place of employment has ample statistical assistance for anyone wishing to conduct research.	2.8 (1.1)
21.	I believe my place of employment has ample assistance for anyone for the analysis of results and findings of the research that is conducted.	2.8 (1.1)
27.	Nursing research requires more from me than I am willing to give to my job.	3.0 (0.9)
34.	Time spent giving patient care is more important than time spent conducting research.	4.1 (1.0)
35.	I am interested in conducting research.	2.9 (1.2)
44.	Nursing research should be initiated by nurse researchers.	3.4 (1.2)



**Table 3. The average scores of individual particles for subscale Payoff and Benefits**

Item	Payoff and Benefits	$\bar{x}$ (SD)*
3.	Nursing research is conducted because it allows nurses to be promoted.	3.5 (1.1)
9.	The informed consent necessary for employee participation in research prevents me from conducting research in my work areas.	3.3 (1.0)
22.	I would conduct research if I had the time.	3.1 (1.2)
23.	I would conduct research if I knew how to write the proposal, conduct and analyze the results and findings.	3.0 (1.2)
24.	Research findings that are advantageous to good patient care can be implemented in my working environment.	3.4 (1.1)
25.	Nursing research is the means whereby the theoretical basis for nursing practice is derived.	3.3 (1.2)
26.	Members of the treatment team other than nurses should conduct research relative to patient care.	3.3 (1.0)
29.	I would like to conduct a study of a problem in patient care.	3.1 (1.1)
30.	I would conduct research if patient assignments were lightened.	2.8 (1.1)
31.	Nursing research should be initiated by nurses in the clinical area.	3.4 (1.2)
33.	Nurses would conduct more research if more funds were available for them to use for this purpose.	3.7 (1.0)
36.	Nurses receive praise from their peers and colleagues when they conduct research.	2.8 (1.1)
37.	Nurses would conduct research if they were provided time for research.	3.7 (0.9)
38.	Nurses would conduct research if relief time were given to conduct research.	3.8 (1.0)
40.	I would do research if I knew more about it.	2.9 (1.2)
41.	Nurses are criticized too much by their peers when they conduct research.	2.9 (1.0)
43.	I believe that I would conduct research if someone more knowledgeable would help me in the process.	3.2 (1.2)

\* arithmetic mean (standard deviation)

The post hoc analysis did not find any difference between the second and third age groups ( $p = 0.977$ ).

Regarding the level of motivation for continuing professional education in relation to the respondents' level of education, the results show that there is a statistically significant difference between the examined groups ( $p = 0.019$ ). A higher level of motivation is present in BSN's. In the group of BSN's, a total of 8 (8.2%) respondents reported high motivation for

continuing their education, whereas in the group of vocational nurses a total of 5 (4.8%) respondents reported high motivation. Also, in the group of BSNs, 7 of the respondents (7.1%) were not motivated to continue their professional education, while in the group of vocational nurses 19 of them (18.3%) were not motivated at all.

Results on the level of motivation for continuing professional education in relation to the respondents' age show that the three age

**Table 4. The average scores of individual particles for subscale Barriers to Conducting Research**

Item	Barriers to Conducting Research	$\bar{x}$ (SD)*
7.	The process of submission of the research proposal to the hospital nursing research committee is too detailed.	3.3 (0.8)
10.	The informed consent necessary for patient participation prevents me from conducting research in my work areas.	3.2 (1.0)
17.	I have the skills and knowledge necessary for me to conduct research.	3.3 (1.0)
28.	Nursing research should be conducted by nurses with a baccalaureate degree.	3.7 (0.9)
32.	Nursing research should be initiated by nurses in education.	3.4 (1.1)
39.	Nursing research should be conducted by nurses with a doctorate.	3.3 (1.3)
42.	Nursing research should be conducted by nurses with a master's degree.	3.3 (1.2)
45.	Patient participation in nursing research is difficult to obtain.	3.3 (1.0)

\* arithmetic mean (standard deviation)

groups differ to a statistically significant extent in terms of the level of motivation for further education ( $p < 0.001$ ). Although in all three age groups most of the respondents are partially motivated to continue their professional education, the highest level of motivation is present in younger nurses (aged 20 to 35). Also, among the nurses of younger age, only 2 of them (2.6%) were not motivated to continue their education, while the number of unmotivated nurses aged 51 to 65 was 13 (25%).

The results also demonstrated that BSNs commonly read more nursing journals compared to vocational nurses. The difference between these two observed groups was statistically significant ( $p = 0.001$ ). Most of the respondents in all three age groups usually read one nursing journal. However, 31 (40.8%) respondents in the youngest age group and only 7 (13.5%) of them in the age group of 51 to 65 read no nursing journals whatsoever.

## Discussion

The results of our research have shown that nurses show mildly positive attitudes towards nursing research. Since the minimum possible score on the Boothe's Attitudes on Nursing Research Scale is 45, and the maximum is 225, the resulting mean of 144.7 (SD = 21.7) indicates

slightly positive attitudes towards research. These results are in line with the findings of previous studies (6, 7, 12, 17, 18), which also confirm that nurses' attitudes towards research are positive. As Hofmeister points out, such a positive attitude of nurses towards research is the key indicator of evidence-based practice (6).

Analyzing the overall outcomes on some subscales of Boothe's Attitudes on Nursing Research Scale also confirms the positive attitudes of nurses towards research. The analysis of the results on the three subscales is consistent with the findings of Hofmeister (6) and Bostrom (9), who also found that nurses perceive that research support exists among their peers and at the hospital; they find that research is important and useful for nursing practice and express their awareness about obstacles to conducting research.

In further analysis of the nurses' attitudes towards research, an examination of subjects' responses in individual particles of each subscale was performed. The average scores in individual particles of *Interest and Environmental Support* subscale show that the respondents agreed with the statement that time spent in patient care was more important than the time taken to conduct research. This is also the particle for which the respondents showed the

highest agreement in the whole questionnaire. Also, respondents expressed a somewhat higher degree of agreement with statements saying that they believed they would get the help needed to conduct the research at their workplace and that their associates would help. The highest disagreement was expressed with regard to the statement that they had enough time at work to carry out the research. A somewhat lower score has also been achieved in the particle that says research is high on the list of their priorities. It can be concluded from such results that nurses, despite their generally positive attitudes towards research, nevertheless give greater priority to patient care, rather than conducting research. It is therefore questionable if they understand the importance of implementing research findings in their practice and if they see the resulting benefit to patients. Concerning the *Payoff and Benefits* subscale, it has been shown that respondents agree the most with claims that nurses would conduct research if they were given free time and if they had more money available for that purpose. They agreed the least with the statement that nurses get praise from their associates and colleagues when conducting research. Such results on the *Payoff and Benefits* as well as *Interest and Environmental Support* subscale support earlier research results (6, 9), which also demonstrated that the time available, as well as working environment support, are important factors associated with the nurses' decision whether they will implement and apply research findings or not.

Average scores on particular particles of the *Barriers to Conducting Research* subscale show the respondents' highest agreement with the statement that the research should be conducted by the BSNs, which means that nurses are aware, to a certain extent, of the importance of education for acquiring knowledge of research methods.

Further analysis of nurses' attitudes towards research is focused on examining differences in attitudes with regard to the level of education and the age of the respondents.

Our results show that BSNs achieve a significantly higher total score on the Boothe's Attitudes on Nursing Research Scale compared to vocational nurses. This finding is in line with the findings of earlier research (7, 12, 17, 18), which also showed that the higher the level of education among respondents, the more positive the attitudes towards research. Given that nurses who attain a higher level of education get more familiar with the research process during their formal education, such findings are not surprising. As Marsh and Brown (12) point out, nurses who attended research methodology courses, either participating in research or were researchers themselves, have more positive attitudes towards research. Bostrom (9) finds some additional differences between BSNs and vocational nurses, and points out that BSNs claimed that conducting research was a desirable part of their nursing role and considered themselves better prepared for conducting research, while vocational nurses believed that research is also important for patient care, but they were not willing to put research before patient care. Consequently, the level of education is undoubtedly linked to positive attitudes towards research. Education should be a fundamental element for motivating and strengthening positive attitudes towards research (18).

There was a statistically significant difference between the three age groups of respondents on the Boothe's Attitudes on Nursing Research Scale. Although the results of some studies (12, 17) have not confirmed the correlation between age and attitudes towards nursing research, the findings of this study show that younger respondents have more positive attitudes towards research, as opposed to middle-aged and senior respondents. Fugleberg (19) also found that younger nurses achieve higher results on scales that measure involvement in research and attitudes towards research. This finding is also in line with the results of our research and one may say that nurses of younger age have more positive attitudes than nurses of middle and senior age. Regarding the level of motivation for continuing professional education, relative to the respondents' level of



education, most respondents from both groups were only partially motivated to continue their professional education. Nevertheless, the results show that a higher level of motivation is present in BSNs. The results of the present study have also shown that the three age groups of respondents differ to a statistically significant extent in terms of the level of motivation for further education. Although most of them are partially motivated to continue education, in all three age groups, it can be concluded that the highest level of motivation is present in younger nurses.

Although our research has shown that nurses have slightly positive attitudes towards research in nursing, which is consistent with previous research on this topic, the results of this study cannot be generalized to the entire population of nurses. A topic which has not been covered by this research, and may certainly be useful to examine, is the link between motivation for continuing education in one's profession in general and their motivation toward nursing research specifically. Another interesting topic for future research could be the relationship between attitudes towards research and actual conducting of research. Namely, it is well-known that the attitude itself does not necessarily result in change of behavior. The fact that nurses have a positive attitude does not necessarily mean that they will also practice research. We may say that identifying the attitudes of nurses to research is only the first step that should link future studies to other significant variables in order to effectively assess the acceptance of changes in nursing practice and the conducting of evidence-based health care.

## Conclusion

Based on the research conducted for the purposes of this paper, it can be concluded that nurses show mildly positive attitudes towards research in nursing. There is a significant difference in attitudes towards research with regard to the level of education and age of the respondents. BSNs have more positive attitudes towards research than vocational nurses do. Younger nurses have more positive attitudes

towards nursing research than it is the case with middle-aged and senior-aged nurses. There is a significant difference in the level of motivation for continuing education in one's profession with regard to the level of education and age of the respondents. A higher level of motivation is present in the BSNs. The highest level of motivation is present in nurses aged between 20 and 35.

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