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DETERMINATION OF SELF-EFFICACY PERCEPTION OF NURSES ABOUT COMPUTER

Yeter Kurt[1*], Havva Öztürk[1], Çiğdem Gamze Özkan[1], Ayşe Kavgaci[2]

[1]Department of Fundamentals and Management of Nursing, Faculty of Health Sciences, Karadeniz Technical University, Trabzon, Turkey
[2]Farabi Hospital, Karadeniz Technical University, Trabzon, Turkey

**Corresponding Author's Email: ykurt6161@hotmail.com*

ABSTRACT

Aim: To determine self-efficacy perception of nurses about computers. **Method:** The Study was conducted on 290 out of 524 working nurses at a university in a hospital. **Results:** 99% of the nurses told that they could use computer and internet, 79% of them had personal computers. Nurses got a total score of 35.56±8.08 from CSES. It was determined that there was a negative and weak correlation between nurses' age and total scale score while there was a statistically significant, negative and moderate correlation between total scale score and their professional experience and hospital experience. There were statistically significant differences in the fact that single nurses had higher scale scores than married nurses, male nurses than female nurses, those who had a bachelor's degree and health high school degree than those who had an associate degree and those who had personal computer than those who did not. **Conclusion:** Most of the nurses who knew how to use the computer, had e-mail addresses and computers in their homes. However, while the computer-related self-sufficiency perception of nurses was at medium level, the same perception in nurses who were male, single had bachelor's degree and health high school degree with younger ages and less professional experience was higher.

Keywords: Nurses, Computer, Scale, Hospital

INTRODUCTION

Just as information technologies are used in all professional's professions, it is very important to use them correctly and effectively in nursing as well. Nursing organizations recognize technology as the fundamental building block of nursing practices and emphasize the ability to use technology effectively, having knowledge, skills and attitudes as a required qualification in nursing (Softa, Akduran & Akyazı, 2014).

Nowadays, health technologies are guiding the nursing care presentation by providing the appropriate care and monitoring the results by determining the care needs and rapid access to the patient records of the health technology which accelerates the health delivery, reduces the cost, obtains the data about the healthy patient individual in a short time and makes it easy to make diagnosis and decision (Koç 2006; Başar e*t al.*, 2008; Ay, 2009). Among the health technologies that must be prepared to integrate into the practice of nurses in clinical areas are virtual office visits, electronic prescriptions and patient portals linked to electronic medical records are just some of the latest changes in healthcare (Roney *et al.*, 2017). In this respect, it seems that technology is rapidly developing and used in today's very complex patient care environments. Nurses must have techonological advances in this direction. (Stichler *et al.*, 2011). In this respect, nurses' ability to have enough knowledge about computers depends on understanding computer technology knowing how to use nursing functions and applications from computer (Koç, 2006; Brumini *et al.*, 2005). Nursing organizations particularly point out that computer usage is an important part of nursing practice in the light of current information and nurses should have sufficient knowledge and skills about computer use Hegney *et al.*, 2007 Because of these reasons, nurses who are able to make evidence-based decisions by using information technology are needed for professional health care today. It has been observed that more research about nurses' attitudes towards information technologies or attitudes

towards computer use.

Knowledge levels and opinions have been made (Turhan & Köse 2010; Köse 2012; Bilgiç & Aydın 2016; Başar *et al.*, 2008). However, the number of studies evaluating nurses' computer self-sufficiency perceptions is very limited. This work will contribute to the literature on the subject and provide data for other studies. Based on these needs, this study was conducted in order to determine the nurses' self-sufficiency perception related to computers.

MATERIALS AND METHODS

Type and Objective of the Study

This study, which is conducted to determine nurses' computer-related self-sufficiency perception, is a descriptive research.

The Universe and Sampling of the Study

A total of 524 nurses working in a university hospital in Trabzon formed the universe of the research while the sample consisted of 290 (55.3%) nurses who volunteered to participate in the research. Sample selection was not made in the research and the entire universe was tried to be reached.

Ethical Aspects and Permissions of the Study

On 15th June 2017, institution permit was obtained from Karadeniz Technical University Farabi Hospital for the conduct of the research. In addition, when the questionnaires were filled in the study, the volunterings of the nurses were sought and verbal approvals were taken.

Data Collection Tools and Process

The data were collected by a inquiry compesed of 7 questions about the nurses' demographic characteristics including age, gender, marital status, graduation school, position and their own computer possession status and a 10-item computer self-sufficiency perception scale (SSPS) between 15-25 June 2017.

The self-sufficiency scale for the computer was prepared as a 5-point Likert type developed by Işıksal and Aşkar in 2003(Işıksal & Aşkar 2003). The scale is scored as '1-Absolutely not agree, 2-Disagree, 3-Neutral, 4-Agree, 5-Totally Agree.' Accordingly, the highest total score on the scale is 50 and the lowest score is 10. Cronbach Alpha coefficient was found as 0.86 in the study of Işıksal and Aşkar. In this study, the Cronbach Alpha coefficient was found to be 0.93.

Analysis of Data

Frequency, percentage and mean tests were used to determine the demographics of the nurses while Kruskall Wallis and Mann Whitney-U tests were used to compare the demographics of the nurses to SSPS.

Limitations of the Study

The limitation of the research is that it is carried out only by the views of nurses working in one university hospital.

RESULTS

Nurses were found out to be 32.78±7.92 years old (average), 89% were female, 68% married, 65% had graduate/post-graduate degree, 91% as nurses in clinics with 11.27±7.49 years of occupational experience, and 10.03±7.64 years of experience in hospital and 91% of them working in hospital as a nurse. Nurses who graduated from health high school are 25.16±5.65 years old (average) while nurses with associate degree are 34.22±10.03 and nurses with a graduate degree or higher are 34.68±6.47 years old. When the nurses' computer usage was evaluated, 79% had their own computer and 99% knew how to use the computer and 99% knew how to use the internet and 84% had their e-mail addresses.

The nurses received 35.56±8.085 points from the total of the CSPS. When the demographic characteristics of the nurses were compared with the CSPS point averages, the age of the nurses and the total score of the scale were found to have a negative weak relation($r=-0.39$, $p=0.000$) while vocational experience ($r=-0.41$; $p=0.000$) and the total working years in hospital were found to have a statistically significant relation at the medium level in the negative direction.

However, when some demographic characteristics of the nurses were compared with the scale of total scores, it was found to be statiscially significant that single nurses were higher than married nurses (MWU=6691.0; $p=0.000$), male nurses were higher than female nurses (MWU=2935.5; $p=0.014$), bachelor/graduate and health vocational high school graduates were higher than undergraduates (χ^2KW=9.115; $p=0.01$) and nurses with their own computers were higher than the ones who don't (MWU=4651.0; $p=0.000$) by terms of scale scores (Table 1).

Table 1: Demographic characteristics of the nurses

Demographic Characteristics	n	Min-Max	Mean Rank	Sum of Ranks	Median	MWU/ χ^2_{KW} *p* value
Gender						
Female	259	10-50	141.33	36605.5	36	U= 2935.5
Male	31	10-50	180.30	5589.5	40	*p*=0.014
Marital Status						
Married	196	10-50	132.63	25997.0	35	U=6691.0
Single	94	13-50	172.31	16198.0	38	*p*= 0.000
Graduated School						
Health High School (1)	59	10-50	161.77		37	
Associatedegree (2)	42	13-50	111.96		33	KW= 9.115
Graduate/ Postgraduate (3)	189	10-50	147.87		36	*p*= 0.01* *1.3>2 ; *p*<0.05
Position						
Nurse Manager	26	10-47	115.62	3006.0	32	U= 2655.0
Nurse	264	10-50	148.44	39189.0	36	*p*= 0.056
Having a computer						
Yes	229	10-50	155.68	35653.0	37	U= 3124.5
No	61	13-50	107.24	6542.0	32	*p*= 0.000

DISCUSSION

The use of computers, which have the quality-enhancing power in health services, ensures that a healthy/sick individual receives a quality care in a short period of time when integrated into nursing services, and that the effectiveness of the care provided is assessed in a short period of time. Thus, determining the nurses' self-sufficiency status, developing and disseminating computer usage will contribute to the training of professional nurses who will improve the quality of care in health care services. In this study, conducted with the aim of determining the computer-related self-sufficiency perception of nurses, it was seen that the vast majority of the nurses were female, more than half of whom were married, graduates, nearly all of them working as a nurse in clinics for 11 years and 33 had an average age of 33. It was seen that most of these nurses had their own computers, know how to use computers and internet and had e-mail addresses. This is important in terms of enabling nurses who use computers at the hospital to make more effective and efficient use of computers in the care they give. As a result, with the increasing use of computers in the clinical environment, it became more important for the nurses to see themselves well enough to use this technology. However, as we saw in the study results, it was also seen that there were no computers and e-mail addresses in the home of one of the five nurses today and some nurses did not know how to use the computer and internet though they were very few in numbers. This may limit the availability of the service at the desired speed and functionality in this university hospital which is trying to establish the most recent technology and computer systems in the nursing services, and to plan, monitor and evaluate computers and even mobile services in patient care services. Therefore, the self-sufficiency of these nurses about computers and products needs to be achieved rapidly.

In this respect, when the computer self-sufficiency perceptions of the nurses were evaluated, the total score of the nurses was at the medium level. In other words, nurses considered themselves moderately competent for computer use. However, the vast majority of nurses stated that they knew how to use a computer when asked for their views. This suggests that they're not effective in using computer products and facilities, or that they have some shortcomings although they know how to use the computer. However, Kaya *et al.*, (2008) and Bilgiçand Aydın (2016) stated that more than half of the nurses thought that they were competent enough to use computers. These findings were in parallel to our study results. As it is in these studies, nurses' self-perceptions of themselves as seeing themselves competent in using computers will allow them to actively use computer-aided nursing systems, ergo will allow more professional nurses to grow in care.

Nevertheless, it was found that as the average age of nurses, occupational experience and years of work in the hospital increased, perceptions of computer-related self-sufficiency decreased. This may be due to the spread of computer use and the possibilities it offers over the past15 years. The younger nurses are more enthusiastic about computer uses rather than old aged nurses. In other words, it may be that there is a decrease in the interest in computer use in younger ages (Basar *et al.*, 2008) because nurses old ages, professional and hospital experiences may not have as good education as that of in the younger ones. However, in the study of Softa *et al.*, (2014), nurses older than 41 were found to have higher attitude scores for computer use in the profession of the nurses that are younger than 30. This result is in contradiction with our study results. Nevertheless, our study findings were similar to those of Sayar, Gulhan

and Yilmaz (2016), in which nurses with 1 to 3 years of professional experience had a higher attitude scale score for computer use in health care than the ones with an experience of 10-years and more.

In present study, it was determined that the computer-related perceptions of male nurses were higher than female nurses. The Turkish Statistical Institute (2016) also reported that 64% of men and 56% of women used computers. It was noteworthy that despite the small number of men in our study, they had a significant difference (TUIK, 2016). This may be due to differences in the interests and the roles of two genders in society. Nevertheless, this suggests that male nurses will be able to use the information systems in health systems more effectively and that the appointment of men in such roles in nursing services will be more effective.

In the study, when the total scores of the married nurses were compared with the scores of the single nurses, it was found that the scores of the self-sufficiency scale of the single nurses were higher than those of the married ones. In other words, computer-related self-sufficiency of single nurses was higher than married ones. Similarly, in the study of Sayar *et al.*, (2016), the mean scores of attitudes towards computer use in healthcare of single nurses were found to be higher than married nurses. However, in the study of Işık & Akbolat (2010) on the sufficiency of using the hospital information system, the scores of the married ones were found higher than those of the single ones. This may be due to the fact that single nurses have more time to use social sharing environments for entertainment, information access and other purposes, and thus have the ability to develop more computer skills.

Nurses who graduated from undergraduate/ graduate and health vocational high schools had a higher computer-related self-sufficiency perception. In the study of Sayar *et al.*, (2016), the average score of the attitude scale for nurses with postgraduate education in healthcare was higher than the nurses with high school education. The higher self-sufficiency perception of nurses with high school and bachelor's degree in our study may be due to age rather than education. It was found that the age of nurses in high school or bachelor's degree was slightly lower than the average age of nurses with associate degrees. Therefore, self-sufficiency perceptions may be higher in high school and bachelor's degree graduates because younger and bachelor's degree nurses are more interested in computers and they use more computers.

In addition, in the study, nurses with their own computer had higher computer-related self-sufficiency levels than the ones that did not. In the study of Sayar *et al.*, (2016), mean scores of attitude scale for computer use in health care of nurses that use computers were found higher than the ones that did not. This may be due to the fact that nurses with their own computers spend more time with the computer at home and improve themselves at the concept of computer and therefore seeing themselves more sufficient.

CONCLUSION

This study was conducted on nurses, working in a university hospital, most of the nurses know how to use the computer, have e-mail addresses and computers in their homes. However, while the computer-related self-sufficiency perception of nurses that participated in the study was at medium level, the same perception in nurses who were male, single, were bachelor and health high school graduates with younger ages and less professional experience was higher. However, in general, the nurses' self-sufficiency perception was moderate, indicating that nurses did not see themselves competent enough or were inadequate as they would like themselves to some computer-related and practical situations. In this direction, self-sufficiency perceptions can be improved by improving nurses' computer skills. Particularly, nurses who have advanced age and experience should not be left to develop their computer-related skills all on their own, routine programs should be organized on this matter, computer trainings should be organized according to the demands of the nurses, participation of all nurses in the introduction and training of the newly received products, methods and applications should be ensured and awareness meetings should be held to make see the computer technology and education as an integral part of healthcare and hardware and effective use environments should be established in such a way that nurses can easily access the computers in the hospital.

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