Nursing Professionals' Roles in Terms of Communication with Patients Using Electronic Devices

Marita Koivunen
Satakunta Hospital District/University of Turku,
Department of Nursing Science
Pori, Finland
e-mail: mhkoivu@utu.fi

Anne Niemi
Eura Healthcare Center
Eura, Finland
e-mail: anne.niemi@eura.fi

Maija Hupli
University of Turku, Department of Nursing Science
Turku, Finland
email: maija.hupli@utu.fi

Abstract: **The purpose of this study is to gain understanding of nursing professionals' expectations of their roles in terms of communication with patients using electronic devices. A quantitative design was used in the study. The target group of the study comprised the nursing professionals who worked in outpatient clinics, appointments, or reception services within either special or primary health care in one hospital district in Finland. The data was collected by an electronic questionnaire developed for the study and was analyzed by descriptive statistical methods. The nursing professionals were asked to choose the two most important roles that they thought described their own role in terms of communication with patients using electronic devices. The alternatives given were: learner, advisor, collaborator, teacher and limit setter. The descriptions of the roles were developed in the researcher's (MK) earlier study. Most often the professionals chose the role of collaborator where they communicate with patients by electronic devices. The role of collaborator was chosen 102 times. The second most common choice was advisor, which was chosen 64 times, while the least popular choice was the role of limit setter. Patient-centered care and shared decision-making require that professionals collaborate actively with patients. The findings show that the members of nursing staff estimate their role to be that of collaborator and so they want to be partners in cooperation with patients. We can assume that nursing professionals are ready to utilize electronic devices in communication in concert with patients.**

Keywords-electronic communication; information technology; role relationship

I. INTRODUCTION

Nursing professionals have a critical role in communication with patients in health care. They can provide individuals with timely, effective and appropriate services and assist in safeguarding patients' rights at treatment facilities [1, 2]. Nurses establish a caring relationship where both parties work together helping patients to cope with their health problems [3].

Traditionally, nurses have been seen as servants who follow the physician's instructions and ensure that patients receive high-quality care [4]. In addition, nurses' role has been that of patient advocate, promoting health by giving information and educating patients. A key role is to support the patient as an independent survivor [5].

While nursing staff was earlier seen as information providers, the trend in communication and patient education in the 2000s has shifted towards collaboration between patients and professionals [6, 7]. Nurses often have the role of coordinator in patient care. They are responsible for discussing patients' status with the patients themselves but also with family members and other health care professionals [8]. Thus, nurses need a wide range of communication skills and have a variety of communication situation related roles.

Reciprocity and simultaneousness are central aspects in communication [3]. It attempts to build a confidential and equal partnership between professionals and patients through communication [9].

Using the Internet for seeking health information and electronic devices for communication has become a popular choice in healthcare [10]. Today, the Internet is an easily available tool [11] and citizens are able to be in contact with healthcare staff via remote connections [12]. Patients are interested in using electronic applications for appointments [13], for looking at their own patient records [14] and for satisfying their health information needs [15]. The use of different reminder messages that are transmitted via mobile phone is also becoming more popular [13].

The use of modern technology, such as mobile phones and email, can enhance communication between patients and health care professionals. It is possible that the use of information technology makes nurses' work more independent. For this reason, nurses' awareness of their

roles and skills in electronic communication will be critical for efficient service delivery [16].

According to earlier studies, the use of information technology applications for communication requires new skills, roles and attitudes on the part of staff in health services [17]. It is clear that face-to-face communication is different from virtual communication [18]. It can be expected that cooperation with patients becomes more significant than before when electronic applications are used because the professional must be able to clarify the patient's situation and needs, sometimes without eye contact [19]. It is not possible for the professional to perceive and interpret the patient's physical reactions, expressions and gestures which might provide valuable additional information about the patient's situation and health status [20]. However, it is possible to use videophones and other computer applications that relay images. When using these tools communication becomes nearly the same as face to face [21].

Information technology is widely used in Finnish health care organizations. Electronic patient records are in comprehensive usage both in specialized health care and primary care. Its distribution covers 100% of these health care providers [22]. However, electronic communication is not as common between patients and health care professionals.

In this study, communication means patient-professional interaction which takes place with the aid of electronic devices. The key is to examine nursing professionals' roles in this communication from professionals' point of view. Electronic devices refer to the devices which belong to the field of information and communication technology: computers, mobile phones, videophones and various applications (e-mail, text messages transmitted with a mobile phone and Internet software, electronic forms, Internet applications), which make electronic communication possible between nursing professionals and patients.

When the use of electronic communication becomes more common in nurses' work, it is important to examine how nurses experience their own roles as service providers by these applications. New working methods may change the work of nursing staff in such a way that the changes must be taken into account in the training or during the job orientation period.

The purpose of this study is to gain understanding of nursing professionals' expectations of their roles in terms of communication with patients using electronic devices.

The research questions were:
1) How do the nursing professionals experience their own role in electronic communication with the patients?
2) Do the professionals' experiences of their own role in electronic communication differ in special health care and primary health care?
3) Do the experiences of different occupational groups regarding their own role in electronic communication differ from each other?

The study is part of a wider project whose objective is to clarify nursing professionals' experiences of the use of electronic communication in Finnish public health services.

II. MATERIAL AND METHODS

A. Design and data collection

A quantitative design was used in this part of the project. The target group of the study (N = 567) comprised the nursing professionals who worked in outpatient clinics, appointments, or reception services within either special or primary health care in one hospital district on the west coast of Finland.

The data was collected in spring 2012 using a structured questionnaire developed for the study. The survey was carried out in electronic form using the Webropol® service. The participants got the link to their personal e-mail and were able to answer the questions using the link. In one organization, the staff did not have e-mail addresses and the questionnaire was delivered to them as a paper version.

The survey instrument was organized into four blocks of questions: a) background characteristics, b) electronic communication with patients, c) electronic communication with colleagues, d) nurses' roles in electronic communication. This paper concentrates on block d; the findings of the other blocks will be reported elsewhere.

In block d, the participants were asked to choose the two most important roles that they thought described their own role in terms of communication with patients using electronic devices. The given alternatives were: learner, advisor, collaborator, teacher and limit setter. The descriptions of the roles were developed in the researcher's (MK) earlier study which was carried out in psychiatric nursing (see Table 1). The study aimed to identify nurses' roles in systematic patient education sessions where also computer-based education was used [23]. In the present study, the target group received a short description of the roles in the questionnaire.

TABLE 1. DESCRIPTIONS OF THE ROLES

Role	Description of the role
Limit setter	You feel it is your task to set limits e.g. to the information that is given to the client utilizing electronic devices.
Teacher	You feel above all that you provide information for the client by making use of electronic devices.
Collaborator	You feel you work in cooperation with the client in utilizing electronic devices.
Advisor	You feel you are a guide who utilizes electronic devices as you give information to the client.
Learner	You feel you learn new things about the use of technology, the relationship between client and nurse, the client's health problem and treatment etc.

B. Ethical considerations

The data collection was authorized by the nursing or medical directors of the study organizations. The basic principles of research ethics, such as confidentiality and good study practices, were followed throughout the study [24]. The target group was informed of the purpose of the study and the participation of the nurses was voluntary.

C. Data analysis

The statistical software package SPSS for Windows version 20 was used to analyze the data. Descriptive statistics were computed for background information on organization and occupational groups. Nursing professionals' choices of their roles in electronic communication were looked at from the software using frequencies. Because of small sample size in some job areas (charge nurses, practical nurses, physiotherapists and occupational therapists), the groups had to be pooled for statistical analyses. Chi-squared tests were used to determine the differences in background factors between the professionals' role choices.

III. RESULTS

Out of 567 eligible participants in the sampling frame, 123 answered the questionnaire (total response rate 22%). 23% of the participants worked in specialized health care and 77% in primary care. There were 34% nurses among the respondents, 46% were community nurses, 7% charge nurses, 7% practical nurses and others, and 5% were physiotherapists and occupational therapists.

The participants chose the role of collaborator 102 times when they estimated their own role in communication with

patients by electronic devices. The second most common choice was advisor's role, which was chosen 64 times. The most infrequently chosen role was that of limit setter, which was chosen eight times. (Figure 1)
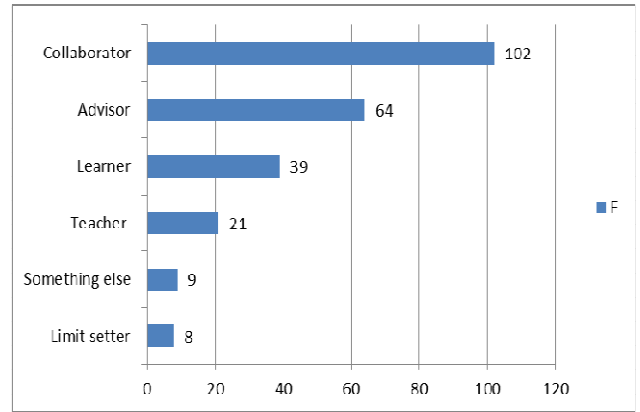

Figure 1 – Nursing professionals' roles in terms of communication with patients using electronic devices (F = the count of the choices)

There were no statistically significant differences in professionals' experiences of their own roles in electronic communication with patients between staff working in special health care and primary health care. (Table 2) Similarly, there were no differences between occupational groups. (Table 3)

IV. DISCUSSION

Our study showed that the use of electronic devices in communication between nursing professionals and patients might not change staff roles in practice compared with face-to-face communication. This was supported by the study findings showing that nurses were seen as collaborators with patients when they used various information sources for giving information to patients [6, 24]. It is clear that the use of electronic devices does not remove the role of advocate for patients from nursing professionals. Compared to traditional practice, possible remote services require different sensitivity on the part of nurses to identify patients' situation and needs.

It is traditionally thought that nursing practice requires close face-to-face interaction. It can therefore be natural for nursing professionals to tend to collaborate actively with patients instead of using electronic devices for communication. On the other hand, it can be supposed that nurses choose more often the role of teacher because patient education has a significant role in client-nurse interaction and it often involves actual teaching.

However, it is clear that professionals should be ready to tailor their roles according to the patient's situation. In the present study, some of the participants were community

nurses who worked in school health care. Their patients are young children, so it can sometimes be important that the professional takes the role of limit setter. A competent and expert health care professional can operate flexibly. She or he can recognize different situations and patients' needs when electronic devices are used in communication.

There were no differences in nursing professionals' experiences of their own roles in electronic communication with patients between staff working in special health care and primary health care as distinct occupational groups. It is probable that nursing professionals' work does not differ very much in outpatient clinics between special and primary health care organizations. Communication with patients is a significant part of nursing professionals' work and they use varying roles in practice regardless of the structure of the organization. Perhaps the most crucial factor that may affect the choice of the role of nursing professionals is the patient's situation.

The study had some weaknesses. First, nursing personnel's participation in the survey was not very active, which may limit the generalizability of the findings. The study was performed in one hospital district area in Finland. It was known that the use of electronic devices for communication was not very common in this area. For this reason, is possible that nursing staff members were not interested in responding to the questionnaire. It may be that some of the nurses did not have much experience of electronic communication, which is why they found it difficult to look at their own role in it.

Second, the descriptions of the roles were developed in a systematic patient education project in the area of mental health nursing. Now they were tested for the first time in other nursing areas. However, we have no reason to believe that these limitations appreciably biased the findings. The results are suggestive and describe the situation among the target group.

Our results show that nursing professionals have competence to use electronic systems in various ways for communication with patients. Therefore, there are no explicit barriers to the implementation of new applications for daily care. It is not self-evident that new applications will bring immediate economic benefits and working time savings, but there is some evidence that they increase access to health care services, thus helping patients [25]. For this reason, is important to ensure nurses' role and competence in electronic communication.

V. CONCLUSION AND FUTURE WORK

According to the study, nursing professionals assume different roles in communication with patients using electronic devices. Most often nursing staff members think of themselves as collaborators. The findings show that professionals estimate their role to be collaborators, and we can thus suppose that they want to be partners in cooperation with patients. Patient-centered care and shared decision-making requires that professionals collaborate actively with their patients.

It seems that the introduction of electronic communication devices in health care does not cause a problem from the point of view of professionals' working methods. The results can be used in nursing education and orientation to ensure nursing professionals' abilities to communicate with patients using electronic devices.

In future, it is important to investigate electronic communication from the patients' perspective. It is necessary to find out patients' expectations for nurses when services are transferred to electronic format.

ACKNOWLEDGMENT

REFERENCES

[1] K. Robinson, "Care coordination: a priority for health reform", Policy Polit Nurs Pract, vol. 11, Nov. 2010, pp. 1266-1274.

[2] K. Vondrak, "Healthcare reform, health IT, and EHRs: The nurse executive's role", Nurs Manage, vol. 43, Dec. 2012, pp. 46-51.

[3] M. Shattell, "Nurse-patient interaction: a review of the literature", J Clin Nurs, vol. 13, Sep. 2004, pp. 714-722.

[4] S. Strech and D Wyatt. „Partnering to lead change: Nurses' role in the redesign of health care", AORN Journal, vol. 98, Sep. 2013, pp. 260-266.

[5] D. Whitehead, "Health promotion in nursing: a Derridean discourse analysis", Health Promot Int, vol. 26, pp. 117-127.

[6] R. Bellamy, "An introduction to patient education: theory and practice", Med Teach, vol. 26, Jun. 2004, pp. 359-365.

[7] G-M. Breen, T. Wan, N. Zhang, S. Marathe, B. Seblega, and S. Paek, "Improving doctor-patient communication: Examining innovative modalities vis-á-vis effective petient-centric care management technology", J Med Syst, vol. 33, Apr. 2009, pp. 155-162.

[8] P. Dykes, M. Cashen, M. Foster, J. Gallagher, M. Kennedy, R. MacCallum, J. Murphy, R. Schleyer, and S. Whetstone, "Surveying acute care providers in the U.S. to explore the impact of HIT on the role of nurses and interdisciplinary communication in acute care settings", J Healthc Inf Manag, vol. 20, Spring 2006, pp. 36-44.

[9] S. Tveiten, and E. Severison, "Communication – a core concept in client supervision by public health nurses", J Nurs Manag, vol. 14, Apr. 2006, pp. 235-243.

[10] E. Iveroth, P. Fryk, and B. Rapp, "Information technology strategy and alignment issues in health care organizations", Health Care Manage Rev, vol. 38, Jul-Sep. 2013, pp. 188-200.

[11] Official Statistics of Finland (OSF). Use of information and communications technology by individuals. ISSN=2323-2854. Helsinki: Statistics Finland 2012.

Available: http://www.tilastokeskus.fi/til/sutivi/sutivi_2012-11-07_uut_001_en.html. Access 12. January 2014

[12] V. Wade, J. Karnon, A. Elshaug, and J. Hiller, "A systematic review of economics analyses of telehealth services using real time video communication", BMC Health Serv Res, vol. 10, Aug. 2010, doi:10.1186/1472-6963-10-233

[13] J. Car, I. Gurol-Urganci, T. de Jongh, V. Vodopivec-Jamsec, and R. Atun, "Mobile phone messaging reminders for attendance at healthcare appoinments", Review. Cochrane Database Syst Rev. 2012 Jul 11;7:CD007458. doi: 10.1002/14651858.CD007458.pub2.

[14] R. Vuokko, J. Suhonen, and J. Porrasmaa, "Functional description of patient information release from a hospital district patient register and from the KanTa national health care archive: Informing a patient, patient's release consent and release refusal", National Institute for Health and Welfare (THL). Report 63/2012. Helsinki, Finland.

[15] H. Bastian, "Health literacy and patient information: developing the methodology for a national evidence based health website", Patient Educ Couns, vol. 73, Dec. 2008, pp. 551-556.

[16] H. Blake, "Mobile technology: streamlining practice and improving care", Br J Community Nurs, vol. 18, Sep 2013, pp. 430-432.

[17] A. Barton, "Health information technology safety. Implications for the clinical nurse specialists", Clin Nurse Spec, vol. 26, Jul-Aug. 2012, pp. 198-199.

[18] A. Adams, R. Adams, R. Thorogood, and C. Buckingham, "Barriers to the use of e-health technology in nurse practioner-patient consultations", Inform Prim Care, vol. 15, Jun. 2007, pp. 103-109.

[19] H. Atherton, J. Car, and B. Meyer, "Email for clinical communication between patients/caregivers and healthcare professionals", Cochrane Database Syst Rev. 2012, Nov14;11:CD007978.doi:10.1002/14651858.CD007978.pub2

[20] J. Silverman, and P. Kinnersley, "Doctors'non-verbal behaviour in consultations: look at the patient before you look at the computer", Br J Gen Pract, vol. 60, Feb. 2010, pp. 76-78.

[21] J. Winters, and J. Winters, "Videoconferencing and telehealth technologies can provide a reliable approach to remote assessment and teaching without compromising quality", J Cardiovasc Nurs, vol. 22, Jan-Feb. 2007, pp. 51-57.

[22] I. Winblad, J. Reponen, and P. Hämäläinen, "Use of Information and Communication Technology in Finnish Health Care in 2011. Status and Future Directions", National Institute for Health and Welfare (THL). Report 3/2012, 178 pages. Helsinki, Finland 2012. Available: http://www.thl.fi/thl-client/pdfs/825d0af8-f97c-4192-bf5b-ba5e1bf773aa. Access 12. January 2014

[23] M. Koivunen, J. Huhtasalo, P. Makkonen, M. Välimäki, and H. Hätönen, "Nurses' roles in systematic patient education sessions in psychiatric nursing", J Psychiatr Ment Health Nurs, vol. 19, Aug. 2012, pp. 546-554.

[24] ETENE, The National Advisory Board on Social Welfare and Health Care Ethics, "Ethical evaluation of the research in Finland", 2006, Available: http://www.etene.fi/c/document_library/get_file?folderId=171 45&name=DLFE-529.pdf Access 12. January 2014

[25] E. Iveroth, P. Fryk, and B. Rapp. "Information technology strategy and alingment issues in health care organizations", Healht Care Manage Rew, vol. 38, Jul-Seb 2013, pp. 188-200.

TABLE 2. NURSING PROFESSIONALS' ROLES IN TERMS OF ELECTRONIC COMMUNICATION IN SPECIAL HEALTH CARE AND PRIMARY HEALTH CARE

Organization		Collaborator		Advisor		Learner		Teacher		Something else		Limit setter	
	n	yes %	no %	yes %	no %	yes %	no %	yes %	no %	yes %	no %	yes %	no %
Special health care	28	86	14	64	36	25	75	11	89	7	93	0	100
Primary health care	94	83	17	49	51	34	66	19	81	6	94	7	93
Chi2 (df) p		0.118 (1) 0.734		2.038 (1) 0.156		0.811 (1) 0.372		1.077 (1) 0.303		0.020 (1) 0.888		2.212 (1) 0.139	

TABLE 3. OCCUPATIONAL GROUPS AND THEIR ROLES IN TERMS OF ELECTRONIC COMMUNICATION

Position		Collaborator		Advisor		Learner		Teacher		Something else		Limit setter	
	n	yes %	no %	yes %	no %	yes %	no %	yes %	no %	yes %	no %	yes %	no %
Nurse	41	83	17	46	54	32	68	17	83	10	90	5	95
Community nurse	56	84	16	57	43	34	66	14	86	2	98	9	91
Other	24	79	21	50	50	6	18	25	75	17	83	4	96
Chi2 (df) p		0.269 (2) 0.754		1.158 (2) 0.643		0.624 (2) 0.654		1.348 (2) 0.519		5.888 (2) 0.546		0.919 (2) 0.950	