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Designing an e-learning application to facilitate health care professionals' cross-cultural communication

Designing an E-Learning Application to Facilitate Health Care Professionals' Cross-Cultural Communication

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Abstract. In recent times, health care professionals (HCP) have come across a number of migrants as their patients. The cultural differences lead to communicational challenges between the migrant patients and health care professionals. Our project aimed to discover HCPs' attitudes, challenges and needs on cross-cultural communication, so that we can develop an e-learning solution that would be helpful for them. By conducting interviews with HCPs, we identified five crucial categories of problems and the current solutions that experienced professionals use to tackle those problems. These interviews also helped us in understanding the motivational factors of HCPs, when using e-learning application. Health care professionals prefer a focus on examples and themes such as death and pain that they face in their everyday work. Changing attitudes by e-learning application is challenging. However, e-learning was recognized as a flexible way for supporting traditional training with HCPs who are busy at work most of the time.

Keywords. Cross-cultural communication, User-Centered Design (UCD), e-learning, user research, paper prototype, user testing

1. Introduction

In European countries, there has been an increase in immigrants and refugees over the last few decades. The shift has posed a challenge in providing the best possible care to migrant patients [1]. Communicational challenges between the migrant patients and health care professionals are common, especially when there is a lack of understanding about sociocultural differences [2]. Not only do the patients have difficulties explaining their situations to health care professionals (HCP) but also HCPs face challenges in communicating with people from diverse cultural backgrounds. As a result, HCPs may behave less assertively and effectively when interacting with ethnic minority patients [3], and patient safety can be threatened in hospitals [4]. In general, HCPs might face many obstacles such as language barriers, immigrants' lack of familiarity with the health care system, traumatic experiences, and different understandings of illness and treatment, all of which can complicate health care delivery [1].

As HCPs are concerned with delivering satisfactory treatment for foreign patients, they need to improve their cultural competence. To alleviate the identified challenges

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and satisfy needs when encountering cross-cultural patients, we are developing an e-learning application which would help HCPs by improving their cross-cultural skills. This learning would facilitate their medical and general communication with migrant patients. Cultural competency is a vague concept and teaching cross-cultural skills is challenging [5], which was kept in mind in application design. Our goal was to investigate whether an e-learning application could be used for teaching cross-cultural skills to HCPs. For example, shift work restrains professionals' participation in traditional training opportunities and e-learning provides an alternative to increase the reach of education and to support learning on demand [6].

In this paper, we report the process of developing an e-learning application for health care professionals. The first aim was to identify the attitudes, challenges and needs of health care professionals when encountering foreign patients, which would help us to develop an e-learning application that would serve the purpose. The second aim was to test the feasibility of the e-learning application. This study is a part of the COPE (www.stncope.fi) research project, which aims to identify the transformations happening in the health care sector in Finland. The first solution ideas and prototypes of the e-learning application were created in collaboration with Aalto University, the Finnish National Institute for Health and Welfare (THL), and Axxell, a multicultural training institute in Finland.

2. Method

The design of the e-learning application was created in adherence to different User-Centered Design processes and techniques like classification of interview results as affinity diagrams, analysis of user flows with customer journey maps, paper prototyping and usability testing. The initial phase of the project was a field study during spring and summer in 2017. We identified needs and current practices of the HCPs by conducting semi-structured individual (n=25) and focus group interviews (n=13) in their workplaces. The interview questions were related to the experiences and challenges that the HCPs had faced when working with foreigners. The interviewees were doctors (n=5), nurses (n=17), dentists (n=4), other professionals (n=2), and health care customers (n=3). Interviewees (n=38) were from Finnish health care service centers for students and a city hospital in southern Finland, where health professionals encounter high proportion of migrants in the Helsinki Metropolitan area. Interviews at the Finnish health care service center were carried out by students of Aalto University.

Subsequently, we designed our first e-learning solution idea based on the information from the above-mentioned interviews. This initial idea was redefined iteratively based on the feedback of our design team, who were researchers in THL, professors from Aalto University, and educators from Axxell. Most of them were the domain experts of cross-cultural communication, and their suggestions greatly helped us in conceiving the final solution concept and design. The stakeholder meetings and ideation session with them helped in formulating the solution idea and design based on the results of the user interviews. The diversified stakeholders in this project guided us in shaping a solution that fit HCP needs. In the early phase of the design work, we identified that it is critical to find a way to motivate the professionals to use the e-learning application, and we paid special attention to identifying their motivational factors.

Next, we sketched the paper prototype for the solution idea by considering the needs of users and suggestions from the experts. Lastly, we evaluated the paper prototypes by

testing them with 13 nurses from different wards of the city hospital. The results provided clarity about the way of presenting the content and motivating professionals to use the e-learning application. Consequently, we eliminated a few weak design options and included some parts of our design alternatives to satisfy the needs of the users.

3. Results

3.1. Interview Results

Five categories of cross-cultural communication problems were found, that described the problems that doctors and nurses face while communicating with patients from unfamiliar cultures: language, gender, cultural interpretation of pain, problems related to visitors, and foreigners' lack of knowledge about the Finnish health care system (Figure 1).
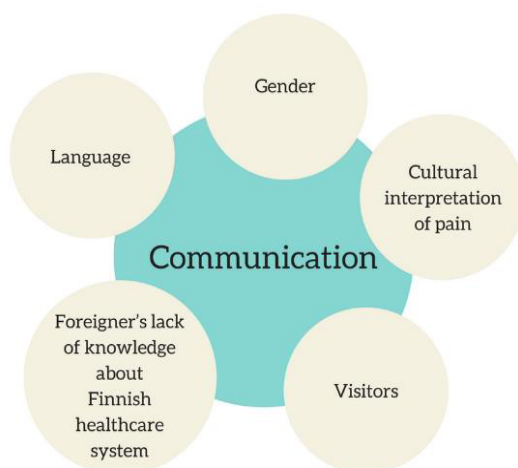

Figure 1. Problem categories in cross-cultural communication based on the interviews of HCPs.

The first category of problems was language, as the lack of a common language for communication was cited as a common obstacle by the interviewees. In addition, when patients' relatives act as translators because there are no available interpreter services, more language difficulties may occur.

The next category was gender, primarily consisting of male dominance in discussions occurring when relatives are present. These problems can also impact language issues. One interviewee explained the problem saying, "Sometimes the patient is no longer the center of attention." Also, a few interviewees mentioned that there is discrimination against female professionals when they treat patients.

Another category of problems was foreigners' lack of knowledge about the Finnish health care system. One of the main issues in this category was foreign patients visiting the wrong health care unit or center. Interviewees felt another issue was that some foreign

patients want medical attention for more minor needs compared to those issues for which Finnish patients seek help and the foreigners underestimated the capabilities and knowledge of nurses.

The next category was cultural interpretation of pain, which refers to people from different cultures perceiving and showing pain differently. This poses a challenge for doctors and nurses to estimate the real intensity of pain. Amongst this, difference perceptions of death and hospital formalities surrounding death were also factors that challenged health care professionals.

The final category of problems was visitors. These challenges were foreigners visiting patients outside visiting hours like very late in the evenings, visitors bringing food to patients, and too many visitors coming at a time. Another notable factor that a nurse pointed out was that visitors bring food in an effort to take care of the patient, but this is usually not allowed in hospitals.

As many of our interviewees were very experienced HCPs, we also discovered the current solutions they use when encountering foreign patients. The current solutions fell under two wide spectrums of communication and attitude (see Figure 2). HCPs had learned to ask more questions and use facial and body language to alleviate communication problems. They also found attitudinal issues to be important, such as not judging patients, courage to ask questions, being open when questioning, and treating patients equally and with respect.
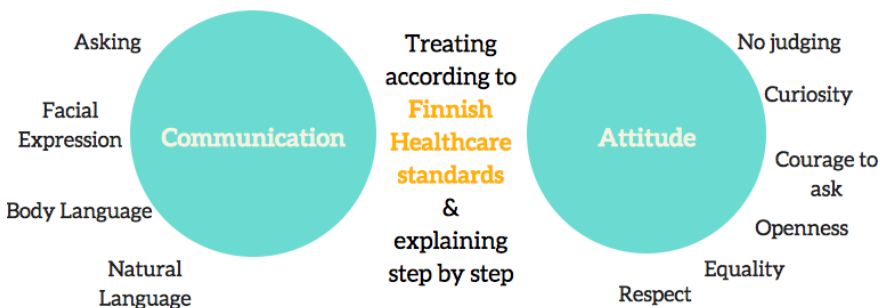

Figure 2. Experienced HCPs' current solutions for encountering cross-cultural patients

3.2. Paper Prototyping and User Testing

Based on the identified problem categories from interviews, the designed paper prototype of the application had three parts: First, the Forum section for topic-oriented discussion amongst HCPs. Second, the Stories section which displays patients' real-life experiences aimed to help professionals to understand patients' points of view. Third, the Training section which is designed to equip HCPs with knowledge and positive attitude about cross-cultural communication and hints how to solve practical challenges they face.

In the training part of the application, the professionals' expectation of the content mostly matched with our design. The interviewees mentioned that they want visually engaging material, additional downloadable material, and further related links. Another valuable feedback that interviewees gave was regarding the difficulty in understanding the titles of the content in the training part, suggesting that titles should be practical and linked to HCPs' everyday work. In addition, interviewees wished to have condensed

information and short videos about the study topics. These additional comments provided by the users not only aided the application design but also contributed to effective content design.

4. Conclusion

Our study examined HCPs' attitudes, needs and motivational factors that support designing a useful and attractive e-learning application to facilitate cross-cultural communication. The results of interviews showed that HCPs are willing to improve their knowledge about different cultural aspects and the ways to implement better multicultural health care using an e-learning application. Based on the feedback about the paper prototype, professionals prefer the application focus on examples and themes, such as death and pain, that they face in their everyday work. Thus, the training material should be health care focused, including examples of typical challenging work situations.

The experienced HCPs had solutions such as asking more questions than usual to avoid misinterpretation, to tackle cross-cultural communication challenges. These current solutions were not known by the majority of inexperienced HCPs and these solutions can be used in designing training content for inexperienced HCPs. The attitude part of the current solutions is more challenging to address with an e-learning application than with traditional face-to-face training. However, because of the hectic schedules of HCPs, e-learning was recognized as a flexible way to support traditional training, and we hope that e-learning increases the reach of education. The next step in our study is to implement the e-learning application to support HCPs in handling cross-cultural communication.

Acknowledgments

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