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The Use of Smartphones in Norwegian Social Care Services

Linda Iren Mihaila HANSEN[a,1], Ann FRUHLING[b], Mariann FOSSUM[b]
[a]*Department of Health and Nursing Science, Faculty of Health and Sport Sciences, University of Agder, Grimstad, Norway*
[b]*School of Interdisciplinary Informatics, University of Nebraska, Omaha, USA*

Abstract. This study aims to understand how smartphone technology was perceived by social workers responsible for piloting social services software and the experiences of involving end-users as co-developers. The pilot resulted in an improved match between the smartphone software and workflow as well as mutual learning experiences among the social workers, clients, and the vendor. The pilot study revealed several graphical user interface (GUI) and functionality challenges. Implementing an ICT social service smartphone application may further improve efficiencies for social workers serving citizens, however; this study validates the importance to study end-users' experiences with communication and the real-time use of the system in order reap the anticipated benefits of ICT capabilities for smart phone social service applications.

Keywords. evaluation, social care services, focus group, smartphone technology

1. Introduction

Extensive Norwegian employment and welfare administration reform has changed the employment services, national insurance administrations and local social services [1]. The reform aimed to reduce costs, improve effectiveness and efficiency, and increase the quality of social care services in Norway. The reform stated that social care services should ensure that clients have access to "one door" service, with all services provided by one unit [2].

The Norwegian government provides financial provisions for citizens who are eligible for support as part of the social security system, i.e., unemployed and/or too sick to work. The situations underlying a person's need for one or more of these services may be a personal issue. Overall, people want to manage their life without using this support, but some situations may require people to seek support. Some need support their entire lives, whereas others require assistance only once from the Norwegian Labour and Welfare Administration [NAV]. NAV supports the applications of citizens for financial provisions and has offices located in every municipality in Norway. The national reform of the NAV administration aims to focus on implementation of a new support system for clients using mobile technology [3].

When implementing new technology in organizations such as NAV, the involvement of users is critical to its success. O´Looney [4] highlights that technologies

[1] Corresponding Author: Linda Iren Mihaila Hansen, Faculty of Health and Sport Sciences, University of Agder, PO Box 509, 4898 Grimstad, Norway; Email: linda.hansen@uia.no

are often developed without thinking of how social workers perform their work. Von Haldenwang [5] argues that difficulties, mostly political, are an issue but that it is important to be aware of existing rules and structure that might undermine change. Thus, implementers of Information and Communication Technology (ICT) systems must be prepared to meet resistance from different stakeholders inside and outside the organization. Including the workforce of the organization in the change process appears to be critical when aiming for real change because the implementation of ICT often changes communication and information flow and occasionally changes traditional hierarchies [6, 7]. Organizational and social factors can be very critical to the use of ICT [5].

The local NAV office investigated in this study has approximately 2400 users, and thus the estimated benefits of increasing the use of technology such as smartphone technology was extensive. The new smartphone software provides an opportunity to support users using an online platform. This study aims to understand how smartphone technology was perceived by the group responsible for piloting the software and the experiences of involving users as co-developers.

2. Method

This study followed an explorative design. Two focus group interviews were conducted. The study was approved by the Norwegian Social Science Data Services [NSD], project number: 30886.

2.1. Setting and sample

Norwegian municipalities provide social services regulated by law to its citizens. Social care is one of these services available. Social workers, leaders and ICT personnel are employed in 428 municipalities and provide services to citizens. This study involves one municipality in the eastern part of Norway. Six participants were interviewed. One had a background in general ICT, one had a background in health informatics, two were managers and two were apprentice social workers. All were experienced working with the smartphone application under investigation.

2.2. The implemented software

The new software aimed to provide more effective communication and interaction between the social care services provider and clients using smartphones. The smartphone technology allows clients to follow their application for financial support using their smartphones. An additional aim was to prevent the social workers from being interrupted by phone calls while working and thus reducing their stress. Interruptions from other clients when a client has an appointment can be perceived as rude behavior from the supervisor. Not paying attention to a client face-to-face and not answering the phone can be a stressing work situation.

When the interviews were conducted, 32 clients were using the software system in the municipality. They had expected a much larger group of users and expect the number to increase. The system was presented as optional for clients to use. The aim and innovation of the implementation were to provide improved service to the users.

2.3. Interview guide

An interview guide was developed with questions from the literature about implementation of ICT, task fit and use [8]. The following questions were asked. What is your main experience with providing the smartphone application to support clients? How was the training conducted, and were you prepared for teaching the clients how to use the software? How was the organization set up for using this service? How do you work with the end-users (clients)? Do you teach the end-users how to use the system? How have you worked together with the vendor?

2.4. Focus groups interviews and analysis

The interviews were conducted by two of the authors and were audiotaped and transcribed verbatim. One of the authors [MF] took notes during the interview session, and another [LMH] led the discussions. The transcripts were read as a whole, and a hermeneutic phenomenological approach was used for the analysis, which was conducted with an open mind about what the participants but in the context of the researchers' pre-understanding of using ICT in communication settings as an efficient tool that might be useful [9]. From the transcribed text, mind maps were developed, and data were coded into themes.

3. Results

Three major themes were identified in the data analysis; an improved match between the smartphone software and workflow over time; mutual learning experiences during the pilot among social workers, clients and the vendor; and graphical user interface (GUI) and functionality challenges with the smartphones.

An improved match between the smartphone software and workflow over time was the first theme. An increased workforce burden was experienced by the organization when piloting the smartphone software. The pilot implementation was perceived as a time-consuming task by the participants. One participant said: 'It was a huge job!'. Participants said the software was useful, even though they were not able to fully use it. They assumed that the software would improve and be useful in the future and were rather satisfied with their impact on the software. The smartphone software matched the workflow better at the end of the pilot and after requested changes were implemented.

The second theme was mutual learning experiences during the pilot among social workers, clients, and the vendor. The vendor provided supervision to the pilot group as they started testing the software with real clients. Learning to use the software became part of the pilot because the pilot group became "teachers" for the clients recruited: "We did in fact learn most during the time we had the vendor in the back room, in case support was needed–that was really useful". They subsequently contacted the vendor when help was needed. The participants expressed that they knew from the beginning of the pilot that they were "co-developers" of software that needed extensive improvement to serve its purpose of communication between the clients and social care workers. One said: "The software is totally different now from what we were introduced to in the beginning. I suppose we had expectations of better use from the start since it already had been used in another pilot." Several areas were changed after

the first pilot. First, security was not properly safeguarded and required improvement before implementation with real clients who required safeguarding of anonymity. Security was thus improved to ensure that clients had secure access to their information and that their personal information could not be accessed by others if the phone was lost. Safeguarding was provided by an aggregated key using a link set up by the vendor. Consequently, the participants experienced a real impact on how security was implemented in the software.

The security precautions and the stage of development of the software made the training rather challenging. The end-users had to meet face-to-face to learn how to use the software and learn about functionalities. The participants described how complex the learning and education processes were when software development occurs alongside the learning process. One participant said: "We could sit there and wait for ten minutes and think–is it going to work–will the link appear–or do we have to call the vendor and ask". The participants had to stand as professionals and introduce something they did not know was going to work. Thus, the participants had to manage their own uncertainty. They had to know how to handle unfulfilled software needs and meet their clients in a professional manner. This situation was quite stressful because they wanted the service to function properly.

The third theme was challenges experienced with the GUI interface and smartphone functionality. The participants indicated that the system was not easy to learn, and the introduction guide was important to meet their needs. The guide was set up to ensure that everyone knew what they were about to participate in, about the use of the program on their own smartphone, and that they would receive direct feedback if any problems occurred.

During the pilot, the interface was improved with new icons and supplemented with English language. These additions were partly the result of planning by the vendor to develop more functions during the implementation. The pilot group expressed that the information should be provided in several languages to meet their clients' need. Many of the end-users speak neither Norwegian nor English.

The system required a smartphone, which introduced additional expense for those who did not have smartphones. Many of the clients did not have a smartphone and were excluded from the service. In addition, clients with smartphones might find it more convenient to obtain information in the traditional manner: by making phone calls and popping in to meet their supervisor. The software demanded high competence in using a smartphone to handle functionalities. The participants perceived that the end-users felt they did not need the functionality offered because they could still make phone calls as they had in the past. The ability for end-users to use the software from any device with no guidance will be important in the future. The vendor understand this request and are developing software that can be used on multiple platforms.

4. Discussion and Conclusions

The most positive effect perceived by the participants was that those who made the effort ultimately obtained benefits from a clearly dedicated system. Rahol [10] describes that technology that provides support that benefits business and also makes the information more accessible is usually considered a good investment. Their inclusion in the development of the project alongside the developers gave the workers an opportunity to secure the system before real use. However, this experience requires

the team to be willing to accept a "not ready yet" situation and to "try things out" as individuals gaining acceptance and use of information technology [11]. Pressure from the community might affect participation in our pilot study.

During the course of this pilot, the total service underwent an evaluation. This evaluation could have put pressure on the pilot group both from their own experience and from society, but they managed to remain in the pilot and try out the software. One social worker expressed that: "getting the solutions to work for one makes one wish for more opportunities! "Just think, if it was possible to use it on the PC as well, then everyone could use it." It was an expectation that this service should be delivered without a fee, "for free", even in their office. However, the clients did not consider buying a new phone to receive the service appropriate; the service appeared most suitable for those who already had a smartphone and knew how to use it. Much effort was focused on attempting to catch up with those users, but whether they received any gain or the expected service they needed through this service remains unclear. The service delivered by the smartphone appears to be too narrow to be useful to the entire group of users. Making the service deliverable on more platforms will make it more attractive. There is a need for more studies to explore end-users' experiences with communication and the real-time use of the system. Examining the benefits experienced by social care supervisors who introduce their clients to the communication system may be another important area for further research.

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