Experiences of Older Patients with Multiple Chronic Conditions in the Intensive Ambulatory Care Home Telehealth Program

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Abstract. Aim: A study was conducted to explore the experiences of older patients with chronic conditions in a home telehealth program, Philips' Intensive Ambulatory Care (IAC) at Banner Health in Phoenix AZ, which targets complex chronic patients. Methods: A purposive sampling approach was followed. The number of participants in the sample depended on data saturation. Interviews were conducted at participants' homes and audio recorded. Interviews were transcribed and the text was analyzed. An inductive approach to the analysis was adopted, whereby explanations and patterns were sought with a bottom-up approach. Specifically, first, codes were identified and created. Then, data (text) was assigned to codes. The emerging themes were captured. Results: Patients (N = 16) named benefits to being in the IAC program, including staying out of the hospital, feeling safe and having an increased peace of mind, practical and emotional support, and usefulness of the services provided within the program (e.g. pharmacological services, social work). Participants described many benefits of the program in comparison to their previous care, including reduced time to get an answer to a medical issue, increased access to doctors, better communication with medical staff, less travel time to receive care and more personal attention. Patients indicated that their experiences in the program change over time. Starting out, they experience confusion relating to new services, technologies and care professionals, which subsides over time. Many participants appreciated the support provided by professionals within the program. Most participants also accepted the technology and could easily use it, although for a minority of participants technology use and attitudes towards technology remain a challenge to adequate program engagement. Conclusion: Patients perceive many benefits to being in an intensive ambulatory home telehealth program and have in general positive experiences with it. Challenges include acclimating to telehealth and, for some patients, technology adoption and use.

Keywords: Telehealth · Experiences · Acceptance · Chronic disease management

1   Introduction

The Intensive Ambulatory Care (IAC) program at Banner Health in Arizona is a pilot program targeting complex patients with multiple chronic conditions. The program includes a multi-disciplinary care team of physicians, nurses, pharmacists, social workers, and health coaches monitoring patients at home. The program also includes the use of wireless vital sign measurement devices and a tablet computer for sharing information with patients and for video-based communication. The pilot has been ongoing since 2013 Care within IAC spans the medical as well as the psycho-social domains. The aim of the current study was to investigate the experiences of patients within the IAC program.

The experiences of patients within the home telehealth program were important to understand for three reasons. First, the IAC care delivery model is likely new to all of the included patients. Patients within the IAC program have relatively frequent contact with a multitude of care professionals who have different roles relating to patients' health management. In addition, patients within IAC are expected to pro-actively manage their health with the use of the technology set up in their homes. It was important to explore the experiences of patients with which these unique aspects in order to uncover the extent to may be perceived as helpful or unhelpful, useful, understandable and desirable and why this may be the case. Second, the program participants are older patients with multiple chronic conditions, who might have little to no experience using technologies such as those that are provided within the program. Acceptance of a new technology by the intended users (i.e., interest and willingness to use it), has been found to be imperative for successful dissemination of the technology in practice (Or and Karsh 2009). It has been found that among older adults there is a "digital divide", implying that many older adults are not likely to accept new technologies (Mitzner et al. 2010). Within a home telehealth program, it is assumed that if patients do not accept the technologies provided to them, they may reject the program altogether, which is likely to affect retention rates. In order to increase retention to the program, it is therefore imperative to understand patients' acceptance of the technologies. Finally, the program's efficacy is dependent on adequate patient engagement. Patients need to adequately utilize the program, including adequate contact with professionals and technology use. In order to optimize patient engagement in the program, it was necessary to understand patients' perspectives in relation to their engagement and uncover the reasons to why potential engagement-related issues occur.

2   Method

Sampling and Recruitment. A purposive sampling approach was used, starting with a recruitment of five patients and then adding more patients to the sample until data saturation was reached, in order to achieve maximum variation in the sample and ensure that different groups of patients are represented. Specifically, both female as well as male patients, patients who have been in the program <2 months, between 2 and 6 months, between 7 and 11 months, and >12 months, and patients living alone as well

as those with a partner were recruited. IAC health coaches were asked to select participants that they thought were able to participate in interviews and ask during their visits with the patients if they were willing to participate.

Procedure. The researcher called patients that agreed to participate to set an appointment for the interview. Patients signed an informed consent when agreeing to participate in the IAC pilot. The semi-structured interviews were conducted in patients' homes by one or two researchers, were audio recorded and transcribed. A pre-defined semi-structured interview guide was used.

Analysis. Data was analyzed according to the grounded theory approach, which postulates that data collection and analysis are interrelated, and the analysis of the first interviews directs the analysis of the following interviews. An inductive approach to the analysis was adopted, whereby explanations and patterns were sought with a bottom-up approach. This approach also allows insight into data saturation. The data analysis process included the following qualitative data analysis steps: First, codes were identified and created by assigning codes to chunks of data. Then, data (text) was assigned to codes. The emerging themes were captured. Finally, codes were sorted into categories, in an iterative process. This coding process was first completed for the interview transcripts separately (open coding), then a process of axial coding was initiated, where material from the transcripts were related and compared.

3 Results

The interviews included a total of 16 participants, of which 9 were male and 7 were female (Table 1). Four participants were living alone and 12 with a partner. Participants described many benefits of the program in comparison to their previous care, and indicated that their experiences in the program change over time, as they felt confused at the beginning, but gained confidence over time.

Percieved Benefits. Patients named the following benefits to being in the IAC program, including (1) staying out of the hospital: Some of the participants remarked that they recognized that being in the program keeps them out of the hospital, due to the frequent contact with them and to monitoring their symptoms. (2) Most patients remarked that being in the program makes them feel safe and have an increased peace of mind. They indicated that the fact that they can call the telehealth center at any time, and have access to doctors if necessary, makes them feel more secure. (3) Practical and emotional support: many patients, especially those that indicated having less support structures, indicated that the home visits by the health coaches makes them feel supported. For the minority of patients that also used the social work services offered within the program, being visited at home by the social worker made them feel supported. Patients that also act as caregivers for their partners (who are more ill then they are) remarked that being in the program supports them by sharing the decision making around their partners' healthcare. Many patients remarked that the health coaches help them with practical issues. (4) Many patients remarked that the services in the program are useful to them and they appreciated them. Patients indicated their appreciation of specific services based on their own needs.

Table 1. Participant characteristics

Participant number/gender	Time in IAC program	Living alone/living with partner
1. Male	10 months	Living with partner
2. Female	10 months	Living with partner
3. Female	12 months	Living with partner
4. Male	12 months	Living with partner
5. Female	12 months	Living with partner
6. Male	12 months	Living with partner
7. Female	4 months	Living with partner
8. Male	4 months	Living with partner
9. Female	>12 months	Living with partner
10. Male	>12 months	Living with partner
11. Male	1.5 month	Living with partner
12. Female	>12 months	Living alone
13. Male	2 months	Living alone
14. Male	1 month	Living with partner
15. Female	12 months	Living alone
16. Male	∼1.5 month	Living alone
N = 16 N male = 9 N female = 7	>=12 months = 9 11-6 months = 3 6-2 months = 4 <2 months = 2	Living with partner = 12 Living alone = 4

Experiences When Starting Out in the Program. Many patients remarked that starting out in the program is associated with confusion, due to the multitude of new services being offered as part of the program, which they were not used to receiving before joining the program. They explained that it took them time (most remarked that it takes about a month) to understand the different program services and how to use the telehealth devices that were set up in their homes.

Experiences Over Time. Over time, many members indicated that they became more confident in in their engagement with the professionals and technology within IAC. Many mentioned that they grew to trust the professionals and rely on them for support. Many patients knew many of the healthcare professionals from the telehealth center by name and mentioned their appreciation of the staff. However, some members still exhibited misconceptions relating to how to adequately engage in the IAC program, including incorrect use of the technology and misunderstandings of what services to expect and how to use them. Although most patients demonstrated they could use the technology, and remarked that after using it for some time they learned how to use it and do not experience many problems, some of the members displayed negative attitudes towards using the technology, especially the tablet computer.

4   Discussion

It is important to understand the experiences of patients within telehealth programs because negative experiences can lead to (1) lower adherence to the program and hence a lower program effectiveness, and (2) program drop-out. This includes their use of, and attitudes towards, the technology that is part of such a program, because most patients are older and are likely to have limited experience with such technologies. If users do not accept a technology, they may reject it and not use it. Within a telehealth program, it is crucial that patients use the technologies provided to them, in order for the program to be successful. The results of this qualitative study suggest that many older patients within a home telehealth program are willing and able to use the technologies that are offered to them. However, a minority of patients demonstrate difficulties in using the technology as well as negative attitudes towards it, even after having experience within the telehealth program.

It has been suggested that when introducing technologies to healthcare environments, it is important to keep the contact and support of the healthcare professionals (Oosterom-Calo et al. 2014; Sanders et al. 2012). This contact may be important to patients who may reject programs that include only technological aspects, and do not provide opportunities for contact and support from healthcare professionals. The results of the current study is in line with this, as the majority of the patients in the study stressed the importance of the contact with the professionals, and the trust they felt towards them, to their experiences of the program, including their feelings of peace of mind resulting from having professionals they trust watch over them and support them.

In the current study it was found that patients' experiences change over time within a telehealth program. Based on the results, it is recommended that efforts are made to help patients understand how to adequately engage in the program and support them and raise their confidence to use the technology. In addition, it is recommended that, over time, information is repeated and knowledge is reinforced.

Finally, the current qualitative work provided in-depth insight about patient experiences with the IAC program. However, it included a small and unrepresentative sample size, which does not allow making conclusions about the extent to which the observed results are representative of the entire IAC patient population.

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