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Telemonitoring is acceptable amongst community dwelling elderly Australians with chronic conditions

Elizabeth J. Halcomb
University of Wollongong, ehalcomb@uow.edu.au

Renee Purcell
University of Western Sydney

Louise Hickman
University of Technology Sydney, louise.hickman@uts.edu.au

Elizabeth A. Smyth
University of Wollongong, esmyth@uow.edu.au

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Abstract

Background Telemonitoring is an innovative model of care being implemented to address the growing burden of chronic and complex disease. Objectives This paper explores the perceptions of community dwelling older people with chronic and complex conditions towards a general practice nurse-led telemonitoring intervention. Method A pre-test post-test intervention study was conducted with consumer surveys administered before and after the intervention. The telemonitoring intervention consisted of a period of home monitoring during which daily vital signs and symptoms were transmitted to the general practice nurse. Results 21 participants completed both pre and post-test surveys. There was a significant difference between pre and post ratings on the survey item "the use of telemonitoring equipment seems difficult to me" (p = 0.013), and "telemonitoring will be a standard way of health care delivery in the future" (p = 0.032). Approximately half of the participants reported that telemonitoring provided them with a sense of security and peace of mind, assisted them to manage their health, in addition to improving their confidence in managing their care. Most participants felt more involved and expressed that daily monitoring helped them to understand changes in their condition. Conclusion Telemonitoring is acceptable to Australian community dwelling older persons with chronic conditions. Prior experience with computers and technology may not be a mediating factor in acceptability. The use of telemonitoring not only provided important physiological information to health professionals but also has the potential to empower older people by allowing them to better understand their own health.

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Telemonitoring is acceptable amongst community dwelling elderly Australians with chronic conditions

Authors:

Dr Elizabeth Halcomb RN BN(Hons) PhD FACN
Professor of Primary Health Care Nursing
School of Nursing & Midwifery
Faculty of Science, Medicine & Health
University of Wollongong
Northfields Ave Wollongong NSW 2522
P: +61 2 4221 3784 | F: +61 2 4221 3137 | E: ehalcomb@uow.edu.au

Renee Purcell BPsych (Hons)
Research Assistant
School of Nursing & Midwifery,
University of Western Sydney
Penrith NSW 2750
E: reneepurcell87@gmail.com

Dr Louise Hickman RN MPH PhD
Director Post Graduate Nursing
Faculty of Health
University of Technology, Sydney
PO Box 123 Ultimo NSW 2007
T +61 2 9514 4577
E louise.hickman@uts.edu.au

Elizabeth Smyth
BSc MPH
Research Assistant
School of Nursing & Midwifery
Faculty of Health & Behavioural Sciences
University of Wollongong
Northfields Ave Wollongong NSW 2522
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Summary

Background: Telemonitoring is an innovative model of care being implemented to address the growing burden of chronic and complex disease.

Objectives: This paper explores the perceptions of community dwelling older people with chronic and complex conditions towards a general practice nurse-led telemonitoring intervention.

Method: A pre-test post-test intervention study was conducted with consumer surveys administered before and after the intervention. The telemonitoring intervention consisted of a period of home monitoring during which daily vital signs and symptoms were transmitted to the general practice nurse.

Results: 21 participants completed both pre and post-test surveys. There was a significant difference between pre and post ratings on the survey item “the use of telemonitoring equipment seems difficult to me” \((p=0.013)\), and “telemonitoring will be a standard way of health care delivery in the future” \((p=0.032)\). Approximately half of the participants reported that telemonitoring provided them with a sense of security and peace of mind, assisted them to manage their health, in addition to improving their confidence in managing their care. Most participants felt more involved and expressed that daily monitoring helped them to understand changes in their condition.

Conclusion: Telemonitoring is acceptable to Australian community dwelling older persons with chronic conditions. Prior experience with computers and technology may not be a mediating factor in acceptability. The use of telemonitoring not only provided important physiological information to health professionals but also has the potential to empower older people by allowing them to better understand their own health.

Key words: telemonitoring; practice nurse; general practice; primary care; ageing; Chronic; Australia
Introduction

It is well recognised that there is a rising burden of chronic and complex disease internationally (Bauer, Briss, Goodman, & Bowman, 2014; Mallen, 2012; New South Wales Department of Health., 2005; Yach, Hawkes, Gould, & Hofman, 2004). Chronic disease is the leading cause of mortality worldwide, estimated to account for 91% of total deaths (WHO, 2011). This phenomenon is linked to the ageing population, with 78% of Australians aged over 65 years having a chronic condition and over half experiencing five or more chronic diseases (Australian Institute of Health and Welfare, 2014). As a consequence of this rising burden of disease and finite health resources, there is a need to develop effective, appropriate and cost effective strategies to effectively manage chronic disease.

Most chronic diseases are characterised by periods of stability in health status punctuated by exacerbations in symptoms that precipitate functional decline over time (Corbin & Strauss, 1991). There is evidence that early identification of these exacerbations can prompt early intervention, potentially reducing the severity of the exacerbation, promoting more rapid recovery and reducing functional decline (Stewart & Horowitz, 2002; Yu, Thompson, & Lee, 2006). Despite the presence of evidence-based guidelines to identify target physiological parameters in many chronic conditions, attainment of these goals is often sub-optimal in primary care (Hendrik Schäfer, Sudano, Theus, Noll, & Burnier, 2012). Improved monitoring of individuals may assist health professionals in better achieving target levels for physiological parameters by allowing them to closely track changes in an individual’s condition and responses to change in either lifestyle or medication.

The growth of information technology worldwide has resulted in increased interest in the utilisation of technology to support health care. Telemonitoring incorporates information technologies such as internet, telephone, and/or videoconferencing to provide direct patient-healthcare provider contact across geographic boundaries (Artinian, 2007).
allows health information to be exchanged between patient and healthcare provider about the patients health status despite the patient and provider being in different locations (American Telemedicine Association., 2012). Given the vast geography of Australia, the ability to provide care to remote and regional patients is significant. Furthermore established benefits of telemonitoring are immense, for example this type of technology moves patient care out of the clinical setting and into patients’ homes providing convenience for those who wish to receive care at home or who are unable to travel to health professionals (Golant, 2009; Harahan, Sanders, & Stone, 2006). Most importantly telemonitoring is a promising strategy to reduce healthcare expenditure and service burden, as it utilises information technologies to transmit relevant patient data directly to healthcare professionals. These data can alert the clinician to possible early signs of exacerbation of chronic disease, facilitating proactive early intervention which may reduce the need for hospitalisation and enhance recovery (Louis, Turner, Gretton, Baksh, & Cleland, 2003; Purcell, McInnes, & Halcomb, 2014).

Within the literature there is significant evidence illustrating the clinical benefits of telemonitoring in various disease specific groups, including heart failure (Conway et al., 2013; Purcell et al., 2014), diabetes, hypertension, chronic obstructive pulmonary disease and asthma (Ekeland, Bowes, & Flottorp, 2010; Nimmon, Poureslami, & FitzGerald, 2013; Pare, Moqadem, Pineau, & St-Hilaire, 2010; Stone et al., 2012). The implementation of telemonitoring has been associated with reductions in hospital readmissions (Clark, Inglis, McAlister, Cleland, & Stewart, 2007; Inglis, Clark, Cleland, McAlister, & Stewart, 2008; Louis et al., 2003), emergency department visits (Jerant, Azari, Martinez, & Nesbitt, 2003) and disease exacerbations (Agarwal, Bills, Hecht, & Light, 2011; Ekeland et al., 2010; Inglis et al., 2008; Omboni & Guarda, 2011; Purcell et al., 2014).

Whilst a small body of literature has explored the consumer perceptions around telemonitoring and the acceptability of telemonitoring to patients, this research has been
largely undertaken in North America (Cross & Finkelstein, 2007; Finkelstein, Cabrera, & Hripcsak, 2000; Finkelstein, Khare, & Ansell, 2003). This research suggests that older patients are hesitant towards new technologies, however exposure and experience with technology can overcome this (Finkelstein et al., 2003). Understanding consumer perspectives on the use of telehealth is an important consideration in testing these models in clinical practice, as consumer perceptions can impact on engagement and health behaviours. Currently there is gap in the literature around the understanding the consumer perceptions around telemonitoring and the acceptability of telemonitoring in an Australian population and context. Therefore, this study sought to explore the attitudes and perceptions of community dwelling older Australians before and after the implementation of a telemonitoring intervention facilitated by nurses in general practice for the management of hypertension, cardiovascular disease or chronic pulmonary disease.

Methods

Study design

This intervention study used a pre-test and post-test design to collect consumer data. It was undertaken as part of a larger study to develop and test a model of telemonitoring for Australian general practice funded by an Australian Research Council Linkage Grant. This model of telemonitoring involved the use of devices in the patients home to collect health status data and transmit this data to a secure server which was then accessed by the general practice nurse and acted upon as required. Data was collected from consumer participants via hard copy survey, prior to and following the telemonitoring period.
Setting

This study was undertaken within a single large general practice located in South Western Sydney, NSW.

Recruitment

The Project team leader conducted several face-to-face meetings with GPs at the participating practice to inform them about the study. GPs were asked to identify consumers aged over 65 years, who had chronic and complex cardiac or respiratory conditions which they felt might benefit from telemonitoring. Once identified, potential participants were sent an invitation letter explaining the study. If they agreed, this was followed by a home visit by the Project Officer who demonstrated the telemonitoring equipment and sought their written consent to participate. After consent was gained, the pre-test survey was administered and a time organised to commence monitoring.

Intervention

The telemonitoring intervention used a Tunstall Mytelemedic telehealth monitor (Tunstall Australasia Pty Ltd). This monitor consisted of a central monitor and Bluetooth enabled peripherals. The specific nature of the monitoring was determined by patients’ clinical condition. From the clinical history, participants were allocated to either the hypertension, cardiovascular disease or respiratory disease algorithm. This algorithm defined the specific vital signs that were measured and a series of questions about symptomology that were posed to each participant. The monitoring variables included blood pressure, pulse, oxygen saturation, blood glucose, temperature, and body weight. Once each day, at a time
convenient to the individual, participants were prompted by the device to undertake monitoring. After the measurements were taken the telemonitoring device asked a series of questions about the consumers’ current symptoms. These monitoring data were electronically transmitted to a secure server that could be accessed by both the research team and health providers. Where issues of concern were identified consumers were contacted by the health provider and either provided advice or invited to attend the general practice. Monitoring was continued for a period of approximately six weeks with each participant. The exact duration of monitoring was dependent upon a number of factors, including; the clinical condition of the participant, the timing of the data collection (i.e. some individuals participated over the Christmas period) and the availability of the participant to return the equipment.

Data collection tools

A pre and post test survey were developed specifically for this study by the researchers, based on a review of the literature around telemonitoring and from existing evaluation tools (Bakken et al., 2006). The pre-test survey contained 33 items that focused on participant demographics, health status, computer experience and attitudes to telemonitoring (13 items; Table 2). The post-test survey consisted of 23 items. This included the 13 items around attitudes to telemonitoring that had been presented in the pre-test and 10 items that measured the ease of telemonitoring use (Table 3). The items measuring the attitudes to telemonitoring were collected on a 5 point Likert scale from Strongly Disagree – Strongly Agree. Some items were negatively worded and reverse scored.
Ethical considerations

The Human Research Ethics Committee of the University of Western Sydney granted approval for the conduct of both surveys (Approval No. HEC 03/166 & H6774) before the commencement of participant recruitment.

Data analysis

Data was entered into the Statistical Package for the Social Sciences Version 20 (SPSS) and analysed using descriptive statistics. Given the small sample size and the frailty of participants responses with missing data were not excluded. Where percentages are calculated this was done so using the denominator of the number of valid responses for the data item. The number of responses is provided next to each percentage to provide clarity. Pre and post monitoring ratings (using the five point Likert scale) were compared using the Wilcox Signed-Rank test. The Wilcox Signed-Rank test was used given that the data was non-parametric paired data. To clearly highlight agreement and disagreement differences in participants post-monitoring attitudes and because of the small sample size the five-point Likert scale was collapsed to a three-point scale (agree, unsure, disagree).

Results

Participant Demographics

Twenty-nine community dwelling older people were recruited to the study. Five participants (17.3%) withdrew before completing the telemonitoring period, leaving a sample of 24 participants. Over half of the participants were female (n=14; 58.3%) and the mean age of participants was 81.4 years (SD 5.48; Range 68-88 years) (Table 1). Most participants were born in Australia (n=15; 71.4%) and 72.7% (n=16) resided with their partner or spouse. The highest education level of participants was largely a school, high school or
trade certificate \( (n=15; \ 71.4\%) \). Nearly three-quarters of participants \( (n= \ 16; \ 72.7\%) \) reported not currently using a computer.

**Insert Table 1  Participant Demographics**

Pre-monitoring data was collected on 21 participants \( (87.5\%) \) and 21 participants \( (87.5\%) \) completed post-monitoring data collection.

**Pre-Monitoring Health Status**

Over half of participants were somewhat satisfied with their current health \( (n=14; \ 70.0\%) \). However, some 35.0\% \( (n=7) \) participants reportedly felt worse than last year. Thirteen participants \( (61.9\%) \) had visited the Emergency Department in the previous 12 months, with half of these participants having 3-4 Emergency Department presentations during the previous year. Over half of the participants \( (n=14; \ 66.7\%) \) had been admitted to hospital in the previous 12 months, of whom 42.9\% \( (n=6) \) had 3-4 hospital admissions.

**Monitoring Period Health Status**

The mean duration of telemonitoring was 56 days \( (SD \ 13; \ Range \ 34-81 \ days) \). Nearly half of the participants \( (n=10; \ 47.6\%) \) reported feeling somewhat or much better than usual during the monitoring period. During the monitoring period most participants visited their GP less than three times \( (n=15; \ 71.4\%) \), although a small group visited their GP four times or more \( (n=4; \ 19.1\%) \). Most GP visits were related to the chronic condition for which the consumer was being monitored. During the monitoring period, 9.5\% participants \( (n=2) \) visited the ED. Three participants \( (14.3\%) \) were admitted to hospital during the intervention, one of whom was directly admitted without visiting ED.
Perceptions of Telemonitoring

Table 2 demonstrates participants’ pre and post monitoring perceptions of telemonitoring. As can be seen from this table, there was a significant difference between participant’s pre and post ratings on the survey item “the use of Telemonitoring equipment seems difficult to me” (z (N=18) =-2.69, p=0.01). Following the telemonitoring intervention significantly more participants disagreed with this statement (M=2.0; SD=1.0) when compared to pre monitoring (M=2.6, SD=0.7). There was also a significant difference between participants pre and post-test ratings on the survey item “telemonitoring will be a standard way of health care delivery in the future” (z (N=18=-2.02 p=0.04). Following the telemonitoring intervention significantly more participants agreed with this statement (M=3.7, SD=0.7) compared to pre monitoring (M=3.1, SD=0.8). There was no significant differences between pre and post scores in the other statements (Table 2).

***Insert Table 2 Pre and Post Monitoring Perceptions***

Post-Monitoring Attitudes

As can be seen from Table 3, all participants felt that the instructions about how to use the monitor were easy to understand and only 1 participant (4.8%) reported being unsure about the explanation provided and what they were expected to do. Most participants (n=12; 57.1%) reported that the system was easy to use, although three participants (14.3%) disagreed with this statement.

Just over half of the participants agreed that the telemonitoring provided them with a sense of security and peace of mind (n=12; 57.1%), assisted them to manage their health
(n=11; 52.4%), in addition to improving their confidence in managing their care (n=11; 52.4%). Nearly two thirds of participant’s felt more involved in their health care (n=14; 66.7%) and expressed that daily monitoring helped them to understand changes in their condition (n=14; 66.7%). Over half of the participants (n=12; 57.1%) agreed that they would use a daily telemonitoring system in the future, and agreed that they would recommend the use of daily monitoring to family & friends (n=13; 61.9%).

**Insert Table 3  ease of Telemonitoring Use *****

Discussion
The current study explored the perceptions of community dwelling older people with chronic and complex conditions towards a general practice nurse-led telemonitoring intervention. Results revealed that experience and exposure to telemonitoring technology resulted in increased acceptance and improved positive attitudes towards telemonitoring amongst participants. In particular, participants were significantly more likely to disagree with the statement that “telemonitoring seems difficult to me” (p=0.013) and agree with the statement that “home monitoring will be a standard way of health care delivery in the future” (p=0.032) following the intervention. These findings are similar to those reported in the literature which indicate that the more interaction older users have with technology and the more proficient they become with using it, their acceptance of the technology increases (Finkelstein et al., 2003; Lee & Rho, 2013). Of particular note in our study was that participants were clearly in the older old person demographic, with a mean age of 81.3 years. As such our study demonstrated differences in prior experience such as computer use when compared to papers reporting studies of younger older people (Disler et al., 2015). Where most of our study participants had no prior computer usage (69.6%), 82.9% of participants in the study reported by Disler et al. (2015) study identified that they were
regular computer users. This different starting point needs to be considered when interpreting the study findings.

Participation in the study resulted in significantly greater perceived ease of use and feelings that telemonitoring would become a standard method of health care delivery in the future. This is an important finding given that perceived ease of use is an important factor identified in the Technology Acceptance model as being a precursor to use of technology (Venkatesh, Thong, & Xu, 2012). Despite this, equivocal findings were evident in response to other statements around the acceptability of the intervention. This finding may reflect the small sample size in this investigation or may demonstrate that additional input is required to enhance participants’ perceptions in these other areas. Further research is required with larger sample sizes to explore these issues.

Although not as strong a finding as the improved acceptance of the ease of telemonitoring, results of the current study also highlighted the important role that telemonitoring can play in supporting chronic disease self-management. Many participants reported feeling more involved and had an increased understanding of their health status and chronic condition. This understanding led to a feeling of empowerment and confidence in managing their own health. This is similar to the findings of Odeh et al. (2015), where participants reported that telehealth services increased their confidence in managing their health. Assisting individuals to better understand their own health status and giving them confidence to recognise early signs of disease exacerbation is a powerful tool in promoting early intervention and potentially reducing avoidable hospital admissions (Barlow, Wright, Sheasby, Turner, & Hainsworth, 2002; Inglis, Clark, McAlister, Stewart, & Cleland, 2011; Nimmon et al., 2013).

Increased disease knowledge and enhanced self-care, increases patients self-efficacy (Barlow et al., 2002; Ekeland et al., 2010). Self-efficacy is an individuals’ ability to carry out required behaviors needed to accomplish a goal. Self-efficacy has been found to be the
strongest predictor of an individual’s ability to change lifestyle risk factors that contribute to chronic disease and adherence to prescribed medication (Bonsaksen, Lerdal, & Fagermoen, 2012; Glasgow et al., 1992). The ability to change these behaviours is important in the successful self-management of chronic disease as it optimizes health and functional status. Results from the current study have shown that telemonitoring caused participants to feel more informed and better equipped to care for themselves, an outcome that has potential flow on benefits such as increased self-efficacy.

Whilst most participants responded favorably to items around managing their health and telemonitoring, a small group disagreed to these statements. Understanding why these individuals responded differently will provide greater insight into who can benefit most from this kind of intervention.

Now is the perfect time to invest resources into ensuring telemonitoring can be effective in reducing chronic disease burden. With daily advances in the speed and efficiency of integrated communications platforms the application and administration of telemonitoring will only get easier. The results of this study have shown that a significant hurdle to the uptake of telemonitoring is the lack of confidence with the technology itself. In the future the population groups that will require telemonitoring will already be immersed in its use due to the high saturation of technology in daily life, therefore eliminating this unfamiliarity and caution. It is essential that this field of diagnosis and monitoring be given the attention it deserves as it could well become an even more integral part of a holistic healthcare approach in the future.
Limitations

This survey was undertaken as a small part of a broader investigation that sought to develop and test a model of nurse-led telemonitoring in the community dwelling older people. Therefore, the sample size was relatively small and participants drawn from a single geographical area. Given the small sample size the impact of demographics on perceptions was not able to be determined. However, the findings of this study provide proof of concept and evidence to support the conduct of larger investigations of such models of telemonitoring in Australian primary care amongst the older people.

Given that participants agreed to participate in the telemonitoring study, they may have been more amenable to the use of technology than the wider population of community dwelling older people. However, the low pre-study computer use, high mean age and overall frailty of the group provide evidence that participants are not too dissimilar to the wider community dwelling population.

Conclusions

The use of telemonitoring has been demonstrated to be beneficial in various chronic disease groups. This study demonstrates that telemonitoring is likely to be accepted within Australian community dwelling older people and does not require experience with computers or technology. In addition to the benefits of transmitting physiological data to health professionals, telemonitoring has potential benefits for self-management, improving individuals’ feelings of confidence, involvement in their care and understanding of their health. Such benefits have significant implications for supporting the health and well-being of their group and should be further explored in future research.
References


Table 1  Participant Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Age (mean; range)</td>
<td>81.3yrs; 68-98yrs</td>
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</tr>
<tr>
<td>Gender (n=24)</td>
<td></td>
<td></td>
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<tr>
<td>Female</td>
<td>13</td>
<td>54.2</td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>45.8</td>
</tr>
<tr>
<td>Country of Birth (n=24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>17</td>
<td>71.4</td>
</tr>
<tr>
<td>UK</td>
<td>5</td>
<td>20.8</td>
</tr>
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<td>Malta</td>
<td>2</td>
<td>7.8</td>
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<tr>
<td>Living Arrangements (n=23; Missing=1)</td>
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<td></td>
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<td>Live alone</td>
<td>4</td>
<td>17.4</td>
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<tr>
<td>Live with Partner/Spouse</td>
<td>16</td>
<td>69.6</td>
</tr>
<tr>
<td>Live with Relatives/Carers</td>
<td>3</td>
<td>13.0</td>
</tr>
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<td>Highest Educational Qualification (n=24)</td>
<td></td>
<td></td>
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<tr>
<td>School Certificate</td>
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<td>25.0</td>
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<tr>
<td>Higher School Certificate</td>
<td>4</td>
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<tr>
<td>Trade Certificate</td>
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<td>20.8</td>
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<td>University Degree</td>
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</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>29.7</td>
</tr>
<tr>
<td>Level of Satisfaction with Current Health (n=21; Missing=3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very dissatisfied</td>
<td>1</td>
<td>4.8</td>
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<tr>
<td>Dissatisfied</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>Unsure</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>Somewhat satisfied</td>
<td>14</td>
<td>66.7</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>1</td>
<td>4.8</td>
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<tr>
<td>Computer Use (n=22; Missing=2)</td>
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<td>No</td>
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<td>72.7</td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>27.3</td>
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¹Percentages here are calculated based on the number of responses for each item
Table 2  Pre and Post Monitoring Perceptions

<table>
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<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
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<th>Z</th>
<th>p</th>
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<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>A doctor/nurse can get a good understanding of my medical problem through home monitoring</td>
<td>3.7</td>
<td>0.7</td>
<td>3.5</td>
<td>1.0</td>
<td>-0.14</td>
</tr>
<tr>
<td>I can be as satisfied following instructions from the monitor as talking to the doctor/nurse in person</td>
<td>3.1</td>
<td>1.1</td>
<td>3.2</td>
<td>1.0</td>
<td>-0.56</td>
</tr>
<tr>
<td>Home telemonitoring can violate my privacy</td>
<td>2.2</td>
<td>0.5</td>
<td>2.1</td>
<td>0.7</td>
<td>-0.97</td>
</tr>
<tr>
<td>The use of monitoring equipment seems difficult to me</td>
<td>2.6</td>
<td>1.0</td>
<td>2.0</td>
<td>0.7</td>
<td>-2.69</td>
</tr>
<tr>
<td>Home monitoring can improve my general health</td>
<td>3.4</td>
<td>0.7</td>
<td>3.2</td>
<td>0.8</td>
<td>-0.76</td>
</tr>
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<td>I don't like that there is no physical contact during home monitoring</td>
<td>3.5</td>
<td>0.9</td>
<td>3.2</td>
<td>1.0</td>
<td>-0.57</td>
</tr>
<tr>
<td>I cannot always trust the equipment to work.</td>
<td>3.3</td>
<td>0.8</td>
<td>3.5</td>
<td>1.2</td>
<td>-0.84</td>
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<td>Home monitoring can be an addition to the regular care I receive</td>
<td>3.8</td>
<td>0.7</td>
<td>3.6</td>
<td>0.8</td>
<td>-0.86</td>
</tr>
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<td>Telemonitoring seems a convenient form of health care delivery for me</td>
<td>3.3</td>
<td>0.7</td>
<td>3.4</td>
<td>0.8</td>
<td>-0.63</td>
</tr>
<tr>
<td>Home telemonitoring will save my time</td>
<td>3.4</td>
<td>0.7</td>
<td>3.1</td>
<td>0.9</td>
<td>-0.71</td>
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<tr>
<td>Home monitoring will save time for PNs &amp; GPs</td>
<td>3.8</td>
<td>0.8</td>
<td>3.8</td>
<td>0.9</td>
<td>-0.05</td>
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<tr>
<td>Home monitoring can reduce costs for the healthcare agencies.</td>
<td>3.7</td>
<td>0.7</td>
<td>3.6</td>
<td>0.9</td>
<td>-0.66</td>
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<tr>
<td>Home monitoring will be a standard way of health care delivery in the future.</td>
<td>3.1</td>
<td>0.8</td>
<td>3.7</td>
<td>0.7</td>
<td>-2.02</td>
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</table>

*Statistically significant p<0.05  
1= Disagree completely; 2= Disagree somewhat; 3= Unsure; 4= Agree somewhat; 5= Agree completely
Table 3  
Ease of Telemonitoring Use

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Unsure</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understood the explanation of how to use the monitor and felt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>comfortable with what I was expected to do</td>
<td>20</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>The instructions on how to use the monitor were easy to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>understand.</td>
<td>21</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The monitoring system was easy to use</td>
<td>18</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Home monitoring provided me with a sense of security and</td>
<td>12</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>peace of mind</td>
<td></td>
<td>23.8</td>
<td>19.0</td>
</tr>
<tr>
<td>I felt the monitoring system was useful in helping me to</td>
<td>11</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>manage my health</td>
<td></td>
<td>28.6</td>
<td>19.0</td>
</tr>
<tr>
<td>I felt more involved in my health care by participating in the</td>
<td>14</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>home monitoring program</td>
<td></td>
<td>14.3</td>
<td>19.0</td>
</tr>
<tr>
<td>I felt more confident in managing my care by participating in</td>
<td>11</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>the home monitoring program</td>
<td></td>
<td>28.6</td>
<td>19.0</td>
</tr>
<tr>
<td>I believe daily monitoring assisted in understanding the</td>
<td>14</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>changes in my condition</td>
<td></td>
<td>9.5</td>
<td>23.8</td>
</tr>
<tr>
<td>I would use a home monitoring again in the future</td>
<td>12</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>I would recommend the use of daily home monitoring to my</td>
<td>13</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>family and friends</td>
<td></td>
<td>25.0</td>
<td>9.5</td>
</tr>
</tbody>
</table>

3Percentages here are calculated based on the number of responses for each item (n=21)