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Long-Term Exercise Adherence in Patients with Heart Failure: A Qualitative Study

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Abstract

Background—Regular exercise is associated with numerous benefits; yet up to 91% of patients with heart failure (HF) do not exercise regularly. This study explored factors supporting long-term exercise adherence in patients with HF.

Design—This study was a qualitative multiple-case study.

Methods—Data were collected via semi-structured interviews from patients with HF at completion of an 18-month exercise intervention in a health care exercise facility and analyzed using a directed content analysis approach.

Results—Participants (n=22) identified perceived health status, scheduling/making exercise part of a routine, social support from coaches and family, knowledge about exercise, and motivation/perseverance as supports for long-term exercise adherence.

Conclusions—Perceived health status may be key when promoting exercise adherence in this population. Knowledge, social support from coaches and family members, and motivation should be considered for long-term exercise adherence.

Keywords

Heart Failure; Self-efficacy; Health-outcomes; Exercise adherence

INTRODUCTION

Participation in regular exercise for healthy adults is associated with several positive outcomes, such as reduced risk of mortality, decreased risk of depression, and reductions in health care spending.¹ Yet, approximately half of American adults do not meet the recommended amount of weekly exercise.¹ This issue is amplified for patients with heart

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failure (HF). The Heart Failure Society of America recommends patients with HF participate in 30 minutes of moderate intensity exercise in a supervised setting five-days per week.² However, 40 – 91% of patients with HF do not participate in regular exercise.^{3–5} These findings demonstrate a need to understand factors that influence long-term adherence to exercise for patients with HF.

Many of the barriers to exercise participation for patients with HF are the same as those faced by healthy adults such as lack of time or motivation; yet, there are several unique barriers that this population faces such as a fear of exercise due to their heart condition and the presence of physical symptoms.^{3,6} Consequently, research has begun to focus specifically on exercise adherence in patients with HF. However, most of this research has examined short-term (<12 months) exercise adherence in patients with HF.⁷ Only one previous intervention reported exercise adherence beyond 12-months in patients with HF, the HF-ACTION Trial.⁸ The HF-ACTION Trial was conducted from 2003–2007 at 82 centers in the United States, Canada, and France.⁸ Participants (n=2331) were randomized and those in the exercise arm received 36 supervised training sessions over 3 months. After 18 sessions, participants were provided exercise equipment (e.g., treadmill, cycle) and heart-rate monitors and instructed to continue regular exercise at home.⁸ Sessions started at 15–30 minutes at 60% heart rate reserve and increased to 30–35 minutes at 70% heart rate reserve after six sessions.⁸ Participants were instructed to complete five home sessions per week for 40 minutes at 60–70% heart rate reserve.⁸ Even with a rigorous intervention, long-term (24-month) exercise adherence levels were relatively low (34%). These results amplify the need to understand supports for long-term exercise adherence for patients with HF.

Heart failure Exercise And Resistance Training (HEART) Camp was a recent randomized controlled trial designed to address the specific barriers and provide supports for long-term exercise participation in patients with HF defined as taking part in exercise for 120 minutes each week or >80% of the 150 minutes recommended by the Heart Failure Society of America.^{2,9,10} The HEART Camp trial included an 18-month intervention where participants (n=204) received a multicomponent behavioral intervention focused on improving knowledge, attitudes, self-efficacy, self-management skills and social support in three phases: adoption, transition, and maintenance. The adoption phase (baseline –6 months) consisted of six group-based educational sessions and individual weekly meetings with a coach trainer to review exercise diaries and other strategies (i.e., goal setting). During the transition phase (7–12 months) the weekly meetings with a coach trainer were continued. Finally, during the maintenance phase (13–18 months) participants submitted a weekly exercise diary and were only contacted if they did not submit the form. The study was conducted in Lincoln, Nebraska and Detroit, Michigan in 2012–2017. The HEART Camp found a significantly greater number of participants from the intervention group (n=102) were adherent than the comparison group (n=102) at 12 and 18 months. Numbers of individuals remaining fully adherent for the intervention group were 42% and 35% while the comparison group had significantly lower numbers with only 28% and 19% adherent for months 12 and 18 respectively. Obviously, long-term adherence remains suboptimal with a need to identify strategies and interventions to improve numbers of patients with HF who are adherent to recommended levels of exercise.

Long-term exercise adherence in patients with HF is a complex issue that is not well understood. A qualitative approach to collect thorough, in-depth data is an ideal method to further explore this complex issue. Thus, the purpose of this study was to qualitatively explore factors that supported participants' long-term exercise adherence from a larger trial focused on increasing exercise adherence in patients with HF. A secondary purpose was to compare perceptions and responses between adherent, partially adherent, and non-adherent participants.

METHODS

Study Design and Participants

This study was a qualitative multiple-case study to explore patients' with HF perceptions and experiences in regard to exercise adherence during an 18-month RCT.¹² Semi-structured interview questions developed by the research team, which included a senior nurse scientist, a nurse scientist focused on adherence behavior, a physical therapist with experience as a cardiac rehabilitation director, and two cardiac nurses, focused on current exercise levels, barriers to exercise, experiences in the trial, plans for future exercise, supports for exercise adherence, and perceived health outcomes. To achieve the aims of this study, focus was placed on questions regarding participants' supports for exercise adherence and perceived health-related outcomes as a result of participation in the exercise trial.

The present study used the adherence data to categorize participants into one of three adherence levels (adherent, partially adherent, or non-adherent). In line with existing literature and recommendations by the Heart Failure Society of America, participants that were adherent to 80% of the recommended minutes of moderate intensity exercise per week – equivalent to 120 minutes of moderate-intensity exercise weekly - at all three time points were labelled adherent.² Participants that reported mixed adherence (i.e., adherent at 12-months, non-adherent at 6- and 18-months) were labelled partially adherent. Participants that were non-adherent at all three time points were labelled non-adherent.

Procedures—This study was approved by the institutional review boards at both data collection sites. Informed consent was obtained from all subjects by a trained research assistant or the principal investigator prior to data collection. Data were collected as part of a HEART Camp trial, which examined adherence to an 18-month intervention focused on improving exercise in patients with HF.⁹ Participants in the intervention had access to an exercise facility and an exercise coach to deliver cognitive-behavioral strategies. Cognitive-behavioral strategies were previously tested in other populations and in preliminary work to improve adherence to exercise and to understand the process of adherence to exercise in patients with heart failure. They focused on knowledge, attitudes, self-efficacy, behavioral self-management skills, and social support.

The intervention contained three, six-month phases. Phase one (months 0–6) was the adoption phase; phase two (months 7–12) was the transition phase; and phase three (months 13–18) was the maintenance phase. A detailed description of the overarching study's protocol can be found in a previous publication.⁹

Participants in the current study (n = 22) were patients with HF that were included in the experimental arm of the parent study. In the parent study, patients were included in the study if they had a diagnosis of HF, HF reduced Ejection Fraction, 19 years of age or greater, able to speak and read English, telephone access in the home, and stable pharmacologic therapy per guidelines for past 30 days. Participants received a multicomponent behavioral intervention, including access to a health care exercise facility and coach. Subjective and objective measures of exercise adherence were collected at 6-, 12-, and 18-months to categorize participants as adherent or non-adherent.

Semi-structured interviews lasting ~30 minutes were conducted in a private room at the exercise facility after each phase of the study. Interviews focused on knowledge gained, perceived supports for exercise adherence, and perceived health-related outcomes. Interviews included three questions: (1) How has exercise affected your health, if at all?; (2) Describe what you learned in this study to stick to exercise long-term.; and (3) What long-term exercise advice would you give to a newly diagnosed heart failure patient?

Data were collected by two trained nurses who were experienced in collecting qualitative data. The nurses also collected the quantitative data but were blinded to group and did not interact with the participants as part of the exercise program. Data were collected in-person at the exercise facility where participants came to participate in exercise.

This report focuses on data from the interviews completed at the end of the 18-month study (phase three).¹⁰ A purposeful sample of participants (n=32, 15%) stratified by age, gender and race were selected for transcriptions in the parent study. Participants who had completed semi-structured interviews at 18-months and had adherence data for each time point (6, 12 and 18 months) were included in this study (n=22).

Data Analysis—Interviews were transcribed verbatim and identifying information was not included in the transcripts. Participants were randomly assigned an identification number. The transcripts were uploaded into QSR NVivo 12. A directed content analysis approach was utilized in data analysis.¹³ A deductive approach was taken to initiate codebook development. Specifically, researchers began with two predetermined categories as outlined by the interview guide: support mechanisms for exercise adherence and perceived health-related outcomes. The lead researcher read all of the interview transcriptions and coded key quotes in the predetermined categories. The researcher then completed subsequent analysis of the coded data to create subcategories. Then, an additional trained researcher read through the data to ensure coding was appropriate. If disagreement occurred, the researchers met to discuss the quote until consensus was reached. Once a draft of the codebook was complete, the researcher reread all of the transcripts and coded any data that was missed when initially separating key quotes. Rigor was ensured through various methods. To ensure credibility, the researchers had the proper training and knowledge to carry out the study. To ensure dependability, a rich description of the study methods is provided, and, during data analysis, a stepwise replication of data occurred. To ensure confirmability, triangulation occurred as the research team is comprised of individuals with diverse academic backgrounds. Thus, various theories and methodological approaches were implemented to collect and analyze data. Lastly, to ensure transferability, purposive sampling was completed and interview

analysis was carried on until saturation – a point where similar themes are recurring to a point that no new insights are provided by additional interviews.^{13,14}

RESULTS

Demographic data for participants can be found in Table 1. A little over half of participants were male (54.5%) and married (59.1%) with an average age of 63.41 ± 9.00 . A majority of participants were white (68.2%). There were no significant differences in demographic between adherence groups.

Results are grouped into two categories that align with the aims of the present study: support mechanisms for exercise adherence and perceived health-related outcomes. Themes emerged within these categories and are described below and in Table 2. Proportion of responses by adherence level are presented at the end of each theme or sub-theme.

Support mechanisms for exercise adherence

When discussing factors that facilitate exercise adherence, five themes emerged: individual health, scheduling/making exercise part of routine, social support, knowledge about exercise, and motivation/perseverance.

Individual health—Individual health was associated with exercise adherence, over half of all participants (59.1%) reported that seeing improvements in their health/fitness motivated them to continue. This theme included references to being able to walk further, struggling less when walking, and improving their body composition. For example, one participant mentioned, “Being able to walk without getting out of breath...motivated me more...” “Another participant said something similar, “And that’s what kept me motivated was a lot of my changes. I started seeing the weight loss, started to see my belly going down and it wasn’t so bulky.” Participants also reported feeling better after improving their fitness, such as improved mood, flexibility, and vigor. For instance, one participant reported that exercise improved the health and function of their ankles. Another participant mentioned, “I do it to keep flexible. I do it in part to, to help keep my weight down and stay relatively fit.” Relatedly some participants’ described an avoidance of morbidity and/or mortality. Participants appeared to recognize the relationship between poor health and longevity. One participant stated, “I have to do this in order to keep myself this healthy. I have to do this ... or my heart will -- everything will start falling apart again.” This theme appeared to be more prominent in the adherent participants (75%) compared to the partially adherent (40%) or non-adherent participants (55.6%).

Social support—Regarding social support, approximately half of all participants (54.6%) discussed the benefit of being supported by coaches/trainers, other participants, and family members. For instance, one participant stated,

...between my daughter calling and asking me how I’m doing and then [trainer/coach]. And then anytime I come in I talk to the friends I’ve made here. The coaches, they’ve never refused to answer a question. So it doesn’t matter, you

know. And then if I have trouble with my diabetes or anything, [trainer/coach] will walk by and she'll go, how are you doing, are you doing okay?

Participants also reported a general form of social support describing a positivity in dealing with others – peers and staff - and the overall sense of encouragement they felt. One participant stated, “The people are great.” Another participant mentioned, “Everybody’s friendly and cheerful.” This theme was most often mentioned by the non-adherent participants (66.7%) in comparison to the adherent (50.0%) or partially adherent participants (40.0%).

Knowledge about exercise—participants reported things they had learned related to appropriate exercise type and duration. One participant mentioned, “Just learning how to exercise and being able to do different exercises because I never exercised before.”

Participating in the study allowed some patients to overcome misconceptions about how much exercise is necessary to achieve positive outcomes. Specifically, participants reported that the amount of recommended exercise actually is not that much and doing some is better than doing nothing. For example, one participant said, “...even if you come and do just a little bit at a time, and work into it, it’s still worth every bit of effort you put into it.” Similarly, another participant stated, “I learned that 15 minutes is better than none.”

This sub-theme was most prominent in the partially-adherent participants (60.0%) in comparison to the adherent (37.5%) and non- adherent participants (33.3%).

Motivation/Perseverance—Participants reported that being motivated and able to overcome adversity were important components of their long-term exercise adherence. This theme included comments highlighting the essential nature of basic determination. One participant said, “Don’t give up. Keep trying. You’ll have bad days, you’ll have good days. On your good days that’s when you do everything, do the best you can.” Participants discussed the challenges of initiating exercise after a HF event, often citing physical and/or mental barriers as one participant commented,

I would say, you got a depressive mode first. And once you can reach that goal, getting out of being depressed, then you can start doing things you want to do in your life. Other things that—just as far as trying to—to stay motivated at all possible. ‘Cause you have to motivate yourself first of all’.

This theme was most prominent in the adherent (50.0%) and partially adherent participants (40.0%) in comparison to the non-adherent participants (11.1%)

Scheduling/Routine—Participants reported that scheduling exercise or making it part of their routine was useful for adherence to long-term exercise. This theme was comprised of comments regarding overcoming the perceived barrier of lack of time as well as normalizing exercise as a part of one’s routine. One participant stated, “Sometimes it might be hard finding the time, because sometimes there’s tons of stuff to do, but that may be the time I have to walk in the house, or walk outside or something, you know.” Likewise, another participant mentioned, “...it just has to become a life style. It’s gotta be something that you

have to do.” Partially adherent participants (40.0%) mentioned this theme more often than adherent (25.0%) and non-adherent participants (22.2%).

Perceived health-related outcomes

When discussing perceived health-related outcomes from participating in the study, three themes emerged: improvements in physical health, improvements in mental health, and adverse/null effects.

Physical health—In terms of physical health, participants often referenced improved endurance, vitality, and energy in this subtheme (72.7%). Participants perceived that they are now able to walk or complete activities of daily living without becoming fatigued or out of breath, where this was not the case prior to the study. For instance, when discussing walking with a family member, one participant stated,

...I'd have to stop two or three times. Or whenever we went shopping or go to the show, I'd have to sit at the bench and take a deep breath and I couldn't walk. Where now, [family member] goes, I have to keep up with you.

Similarly, participants also referenced regaining the strength they had lost as a result of chronic HF. One participant mentioned, “But strength wise, I think I'm pretty much back to where I was before.”

Several participants also emphasized the benefit of weight loss as they felt that they had lost weight as a result of participating in the study. Some participants also reported that they feel better after becoming more active. As one participant stated, “I feel like a new person.” A non-adherent participant made note of this as well, stating “...when I was exercising I was feeling great. When I wasn't exercising, that's when I started like I ended up back in the hospital.” Overall, this theme was mentioned by a majority of adherent participants (87.5%), partially adherent (60.0%), and non-adherent participants (66.7%).

Mental health—Regarding mental health, less than half of all participants (40.9%) reported general improvements as well as decreasing the level of stress and anxiety. With general improvements, one participant mentioned, “It made me feel positive about myself.” While another participant stated, “...my outlook has improved.” Regarding improvements in stress and anxiety, one participant reported, “I would just come here, work out, and it released a lot of stress, it does.” Specifically referencing anxiety, one participant said, “I don't have anxiety very much anymore, I mean, I get bouts of it now and then but overall it's helped me.” An equal proportion of respondents in each participant group mentioned this theme (31.8% adherent, 40.0% partially adherent, 22.2% non-adherent).

Adverse/Null Effects—Within the adverse/null effects theme, less than a third of all participants (31.8%) reported that health complications limited their ability to be active or that they did not experience any improvements in physical or mental health. In terms of health complications, one participant mentioned, “I'm worried about my knees. My dad's knees gave out and then he couldn't walk anymore.” Regarding null outcomes, one participant stated, “I haven't really lost any weight which I was hoping I would.” This theme

was described more often by the partially adherent (40.0%) and adherent participants (37.5%) in comparison to the non-adherent participants (22.2%).

DISCUSSION

The present study was to explore factors that supported participants' long-term exercise adherence in patients with HF. Semi-structured interviews were conducted with 22 participants from the experimental arm of the HEART Camp trial.^{9,10} Interviews focused on factors that support exercise adherence and perceived health-related outcomes. Key themes for support mechanisms for exercise adherence included improvements in individual health, social support, knowledge about exercise, motivation/perseverance, and scheduling/routine. Key themes for perceived health-related outcomes were improvement in physical health, mental health, and adverse/null effects. These findings are discussed below.

Improvement in individual health was described as a support mechanism for adhering to an exercise intervention. Participants reported factors such as walking further, improved body composition, and improved mood weight by participating in HEART Camp. It appears that actual and perceived improvements in health may be key mechanisms in supporting long-term exercise adherence. This is similar to other research regarding exercise adherence in patients with HF. Conraads and colleagues (2012) suggest that patients with HF tend to be motivated by improved health, performance in activities of daily living, and body image.⁶ Thus, when working with patients with HF that are starting an exercise program, highlighting improvements such as these can support long-term exercise adherence. Not surprisingly, this theme was most prevalent in the adherent participants.

Consistent with other research in HF patients, participants also reported that social support influenced their exercise adherence. Social support came from other participants, family members, and coaches/trainers of the HEART Camp. It is noteworthy that participants had not been involved in one-on-one support (coach or peer group) during phase 3 (months 13–18) of the intervention. Thus, it appears the peer group and coaches/training from the HEART Camp trial played a large role in initiating and supporting exercise participation over time. Because participants reported support of both professional exercise coaches and peers, it is unclear which strategy may be most effective in promoting long term adherence to exercise in patients with HF. Research has reported use of strategies such as group support or exercise sessions, weekly or monthly face-to-face contact, and conversations/contact with research staff or exercise trainers. However, little is known regarding the actual effectiveness of these individual strategies²² for social support.¹⁶ Adding to the lack of clarity, participants mentioned a general form of social support, referencing ambiguous terms such “the people” or “everybody.” A recent meta-analysis indicates that peers are equally as effective as health professionals at increasing exercise in older adults.¹⁵ In order to have the greatest impact on patients with HF, it is important to examine more closely how effective a professional trainer/coach versus peers (i.e. those with HF who are adhering to exercise) would be in delivering behavioral strategies to support long-term exercise adherence in this population. Interestingly, non-adherent participants mentioned social support more often than other adherence levels which may indicate that despite their inconsistent participation in exercise

they still valued the support they received. This may indicate the non-adherent participants desire more social support; however, additional research is needed.

There were notable differences between adherence groups (i.e., non-adherent, partially adherent and adherent) when discussing knowledge about exercise and motivation/perseverance. Interestingly, the partially adherent group more often references knowledge about exercise as supporting their adherence to exercise in comparison to the adherent or non-adherent groups. This may indicate that the educational intervention components were best suited for those patients that would ultimately leave the study partially adherent. Non-adherent patients may require more frequent educational reinforcement whereas the adherent group may need less long-term educational support. In terms of motivation/perseverance, the adherent and partially adherent participants were more likely to report that being motivated and being able to overcome adversity were key supports, compared to non-adherent participants. This was expected given that participants who were able to sustain motivation and overcome barriers were more adherent over the 18 months.

Notably, themes within supports for exercise adherence largely aligned with previous research on participation in exercise for patients with HF. For example, the theme of having a consistent schedule and routine could help overcome a previously mentioned barrier by patients with HF of life getting in the way.¹⁷ Interestingly, other research with patients with HF has found that self-care confidence – their confidence in their ability to take part in self-care activities - mediates the relationship between social support and overall treatment adherence.¹⁸ While this was not a prominent theme in our study, future research should explore how self-care confidence plays a role specifically in adherence to exercise regimens.

Patients in our study perceived improvement in both physical and mental health. This finding is consistent with existing literature on the benefits of exercise for the general population, and objective data from the HEART Camp study.^{19,20} The perceived physical health improvements is important as patients with HF have previously reported that negative changes in their health has made them feel helpless. If patients perceive health improvements, this could help to motivate them to pursue an activity to prevent the deleterious effects of HF.²¹ In references to mental health, participants also mentioned decreasing the level of stress and anxiety. This is important as a meta-analysis found 28.79% of patients with HF could have clinically significant anxiety and 55.5% had elevated symptoms of anxiety.²² Further depression and anxiety tend to increase with the progression of HF and are associated with increased mortality.²³ The findings from this study illustrate perceived benefits in mental health which may be important information to motivate patients with HF to participate in exercise.

Notably, there were minimal differences between adherence groups in terms of how participants perceived their health-related outcomes. This may indicate that there is dissonance between participants' perceptions of their health and their actual health outcomes. However, this may also indicate that regardless of adherence level participants perceived at least some improvements to their health outcomes. It is important to note, these findings are limited by having a small sample within each theme. Future studies with a larger sample are needed to corroborate these findings.

This study was the first to explore qualitative factors that support long-term exercise adherence within a randomized controlled trial designed to improve exercise adherence in patients with HF. Previous research has focused primarily on short-term adherence (<12 months) interventions or exclusively reported health-related outcomes.^{7,8} Further, by taking a qualitative approach the present study was able to provide thorough, in-depth information over an 18-month time frame. The present study also included a more diverse sample compared to past research. Previous studies have included samples that are predominantly White and male, while the present study was 45% female and 31% Black.⁷

The present study was not without limitations. One of the goals of the present study was to compare responses based on adherence level. Unfortunately, there was insufficient data to make meaningful comparisons due to the fragmentation of the small sample when coding data. However, a sample size like this is a feature of qualitative case study²⁸ research and provides an initial step to qualitatively understand perceptions of adhering to exercise for patients with HF. Future studies may explore these differences more rigorously using advanced quantitative, qualitative or mixed methods approaches as well as taking into consideration seasonal differences in activity levels.²⁵ Additionally, New York Heart Association (NYHA) functional class or age was not taken into consideration when analyzing data. A majority of participants in the larger study were NYHA Class II and III and mean age was representative of the general HF population.

Conclusion

In this study, most participants reported improvements in health, such as weight loss or increased endurance, that were both a positive outcome as well a motivating factor for exercise. Thus, ongoing improvements in health status may be a key point to emphasize when promoting long-term exercise adherence in this population. Knowledge about exercise, social support from coaches and family members, and motivation/perseverance were other perceived supports. These perceived supports may be associated with improvements in self-efficacy for exercise, which has been shown to be an effective way to improve shorter-term exercise adherence in patients with HF.^{26–29} Future studies to test different strategies for delivery of support in a trial focused on long-term adherence to exercise in patients with HF are needed.

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Abbreviations

CDC	Centers for Disease Control and Prevention
HF	Heart Failure

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Highlights

- Perceptions of improvements in health motivated participants to adhere to exercise.
- Social support from coaches, other participants and family members were key.
- Adherent participants more often referenced their individual/physical health.

Table 1.

Participant Characteristics by Adherence Levels over Time

Characteristic	All Participants	Adherent	Partially Adherent	Non-Adherent	Significance
Age, M $\pm$ SD	63.41 $\pm$ 9.00	63.75 $\pm$ 9.89	65.00 $\pm$ 5.29	62.22 $\pm$ 11.41	0.874
Gender, n (%)					
Male	12 (54.5%)	6 (50.0%)	2 (16.7%)	4 (33.3%)	0.342
Female	10 (45.5%)	2 (20.0%)	3 (30.0%)	5 (50.0%)	
Race, n (%)					
White	15 (68.2%)	7 (46.7%)	3 (20.0%)	5 (33.3%)	0.334
Black	7 (31.8%)	1 (14.3%)	2 (28.6%)	4 (57.1%)	
Married, n (%)					
Yes	13 (59.1%)	6 (46.2%)	4 (30.8%)	3 (23.1%)	0.147
No	4 (18.2%)	1 (25.0%)	0	3 (75.0%)	
Widowed	4 (18.2%)	1 (25.0%)	0	3 (75.0%)	
Divorced	1 (4.5%)	0	1 (100%)	0	

Table 2.

Percentage of responses by theme

Theme	All Participants (n=22)	Adherent (n=8)	Partially Adherent (n=5)	Non- Adherent (n=9)	Sample Quote
Support mechanisms for exercise adherence					
Individual health	59.1%	75.0%	40.0%	55.6%	Being able to walk without getting out of breath...motivated me more...
Social support	54.6%	50.0%	40.0%	66.7%	It was a group environment. Everybody put then input in so somethings that might've work for you. might've helped me out in the lons inn, too.
Knowledge about exercise	40.9%	37.5%	60.0%	33.3%	And I found it very interesting when I was up to a mile that I wasn't even at 3.000 (steps) yet and that forced me to do more walking.
Motivation/ Perseverance	31.8%	50.0%	40.0%	11.1%	Don't give up. Keep trying. You'll have bad days: you'll have good days.
Scheduling/ Routine	27.3%	25.0%	40.0%	22.2%	...it just has to become a lifestyle. It's gotta be something that you have to do.
Perceived health-related outcomes					
Physical health	72.7%	87.5%	60.0%	66.7%	It's just like you got a new body. Everything is working better than it was before.
Mental health	40.9%	37.5%	40.0%	44.4%	It (exercise) made me feel positive about myself.
Adverse/Null	31.8%	37.5%	40.0%	22.2%	I haven't really lost any weight, which I was hoping I would.