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Perceptions, Expectations, and Informal Supports Influence Exercise Activity in Frail Older Adults

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Abstract

This study aims to explore frail older adults' perceptions of what influences their exercise behaviors. A qualitative descriptive design was used. Semi-structured, open-ended interviews were conducted with 29 frail older adults. Thematic content analysis established the findings. Frail older adults perceive exercise as a by-product of other purposeful activities such as manual work or social activities. Progression into frailty appears to be associated with a decline in non-family support, changing traditional roles within family support networks, and lower baseline activity levels. Frail older adults perceive exercise as incidental to more purposeful activities rather than an endpoint in itself. Therefore, exercise programs concentrating on functional outcomes may be more relevant for this population. Strategies that educate and promote social support networks may also benefit frail older adults.

Keywords

exercise, frail, older adults, perceptions, influences

Regular exercise or structured exercise interventions have been shown to reduce the risk of hospitalization and early mortality, and lead to improved physical function in frail older adults (Courtney et al., 2009; Landi et al., 2010). There is evidence that such interventions may also reverse the progression of frailty to a degree (Binder et al., 2008). However, the implementation of these programs is difficult as regular involvement in exercise or physical activity decreases with age (Schoenborn, Adams, Barnes, Vickerie, & Schiller, 2004), and long-term adherence to exercise interventions is poor in spite of the associated benefits (Bestall et al., 2003).

Social support, self-efficacy beliefs, and outcome expectations have been identified as influencing exercise in non-frail, community-dwelling older adults (Baert, Gorus, Mets, Geerts, & Bautmans, 2011; de Groot & Fagerstrom, 2011; Mathews et al., 2010; Warner, Ziegelmann, Schuz, Wurm, & Schwarzer, 2011). Other factors include health status, beliefs regarding exercise (Baert et al., 2011; Mathews et al., 2010), exercise history (Hirvensalo, Lintunen, & Rantanen, 2008; Kozakai, Ando, Kim, Rantanen, & Shimokata, 2012), and cultural beliefs (Leavy & Aberg, 2010; Mathews et al., 2010). Social support and self-efficacy are two of the principal determinants to exercise cited by community-dwelling older adults (de Groot & Fagerstrom, 2011; Mathews et al., 2010; Warner et al., 2011). Older adults who do not receive adequate social support are less likely to exercise and as a consequence have a higher risk of mortality (Bailey & McLaren, 2005; Strine, Chapman, Balluz, & Mokdad, 2008). Social support may be derived from a number of sources including family, friends, peers, or health professionals (Resnick, Orwig, Magaziner, & Wynne, 2002). Family and friend-based support increases the likelihood of regular participation in exercise (Umstattd, Saunders, Wilcox, Valois, & Dowda, 2006). However, in group exercise interventions, peer support may have a higher influence on continued participation than family support alone (Stevens, Lemmink, van Heuvelen, de Jong, & Rispens, 2003). Warner et al. (2011) found that high self-efficacy and the support of friends had a significant impact on the likelihood of changing exercise behavior in older adults with multiple co-morbidities. Social support offered from friends may have a more substantial influence on exercise behavior than family support (Resnick et al., 2002). In addition, Giles, Glonek, Luszcz, and Andrews (2005) reported that social networks based on friends had a

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significant effect on survival of older adults over a 10-year period as opposed to social networks based on family members. Hence, social support networks based on friends appear to be more important in promoting exercise in older adults than family supports alone.

Self-efficacy and outcome expectations are both components of Social Cognitive Theory (Courtney et al., 2009; Hall, Wójcicki, Phillips, & McAuley, 2012). Self-efficacy refers to one's belief in one's ability to successfully carry out a specific behavior (Bandura, 1997). It has been identified as an important factor in motivating older adults to exercise (Schutzer & Graves, 2004). Outcome expectations refer to one's belief that a planned goal will be achieved from completing a personal action (Hall et al., 2012). The relationship between outcome expectations and self-efficacy has not been consistently agreed on (Bandura, 1997; Williams, 2010) and outcome expectations have been relatively unexplored in the literature (Hall et al., 2012). However, it has been argued that self-efficacy and outcome expectations are closely linked as both impact initiation and participation in exercise interventions (Resnick et al., 2007). Hence, outcome expectations may also serve as an indication of exercise behavior and the likelihood of changing that behavior toward positive outcomes.

However, these studies have not specifically targeted frail older adults, instead investigating a non-specific older cohort, or focusing on the "oldest old." This article therefore aims to explore what influences frail, community-dwelling older adults to exercise.

Method

A qualitative descriptive design was used for this study. Qualitative research is informed by interpretivism, which seeks to explore how people understand and experience social phenomena (Carpenter & Suto, 2008). When employing this approach, the researcher must seek to explore the meaning attributed to phenomena by the participants and themselves (Ritchie & Lewis, 2003). This approach was chosen to allow the author to explore the participants' attitudes and beliefs regarding exercise to gain an understanding of what influenced their exercise behaviors.

Sample Recruitment

This study was nested in a larger control trial (CT) examining the effects of an exercise intervention on frail older adults in the acute setting conducted from July to September 2011 (McCullagh et al., 2012). Consecutive sampling was employed to recruit all participants admitted to the CT. Inclusion criteria consisted of frail or pre-frail older adults under terms described by McCullagh et al. (2014). Exclusion criteria included early discharge, defined as within 3 days or less of admission, and transfer to palliative care services. Early discharge was an exclusion criterion to ensure participants had been screened as frail or pre-frail before the interviews were conducted. Cognitive impairment was not an exclusion criterion as those with cognitive impairment are still able to provide us with their insights and perceptions of exercise. Thus, it can be argued that excluding those individuals on the basis of impairment alone is unethical (Hellström, Nolan, Nordenfelt, & Lundh, 2007). However, one eligible participant was excluded as her level of impairment rendered her unable to effectively communicate at the time of recruitment. Ethical approval was granted by the regional clinical research ethics committee. Verbal consent was requested. In addition, consent was viewed as a process whereby attention was given to any verbal or non-verbal indications during data collection that a participant seemed unwilling to take part in the interview.

Out of a potential 40 participants recruited to the CT, 29 were interviewed. Those not interviewed were discharged at weekends or at short notice such that the interview could not take place prior to discharge home from hospital. None refused to participate. Fifty-five percent of those interviewed were women. The median age was 78 years with a range of 65 to 87 years.

Data Collection

All participants were interviewed in private at the bedside. One participant requested that his spouse be present for the interview. The spouse observed but did not participate in the process. The average length of stay (LOS) prior to being interviewed was 9.45 days.

A total of 29 semi-structured, open-ended interviews were conducted. A preliminary literature search and review was completed to inform the development of the interview schedules (see Appendix). Each participant was asked how he or she chose to exercise in a typical day at home and about any limiting or motivating factors he or she experienced. Each participant was asked to describe outcome expectations he or she may have had, and about the presence of social supports. Three interviews were concluded early, 2 due to illness or inability to continue and 1 due to the participant declining to continue.

Data Analysis

The interviews were transcribed verbatim and the transcripts were studied carefully in the context of the recorded interviews. Data analysis was carried out using thematic content analysis. This was based on a five-stage analytical method described in the literature (Flick, Von Kardoff, & Steinke, 2004; Gerrish & Lacey, 2010; Ritchie & Lewis, 2003). These stages were

1. Familiarization and identification of key themes;
2. Creating a "thematic framework" (Ritchie & Lewis, 2003);

3. Coding;
4. Sorting data;
5. Summarizing or synthesizing data.

Data analysis was facilitated by computer-assisted qualitative data analysis software (CAQDAS) using QSR International's NVivo 9 qualitative data analysis software.

Findings

Research analysis identified three key themes: perceptions of exercise, personal agency, and social support. One other theme comprising of a number of historical influences, including the impact of emigration and technology on exercise behaviors in this cohort, was also identified.

Perceptions of Exercise

Perceptions of exercise were shaped by three key themes. How they defined and described exercise in terms of their previous and current exercise behaviors, and their perceptions of their own exercise levels are all presented below to give an overview of their beliefs regarding exercise.

Exercise history. When describing how they exercised as young adults, participants classified exercise as a relatively vigorous activity. Manual labor, playing sport, or dancing were common examples of exercise. However, the majority of those interviewed did not recall being active solely for the purpose of exercise. Rather, they happened to be exercising while doing activities that were seen as either necessary or fun:

> Oh my god girl we never stopped dancing . . . we never stopped on our bikes. Out to [place name], down to [place name] every Sunday. And we worked 6 days a week in the [company name] from 8 in the morning until 6 at night. (Participant 15)

When participants began to discuss their exercise behavior in later years, there was a move to describing less strenuous activities such as housework or gardening. Although the intensity of the exercise had changed, the majority of participants continued to see it as incidental to other, necessary forms of activity.

In addition, participants described walking as a common form of exercise in later life. Walking was the exercise most commonly cited by this group, which was undertaken for the specific purpose of exercising, as opposed to playing sports, which had more of a social component:

> Participant (P): I have a walker. I'd walk about 10 yards anyway.
> Interviewer (I): Would you?
> P: I do 10 yards anyway between the house and the garden at home. (Participant 21)

Current exercise behaviors. Accounts of exercise progressed to describing current exercise behavior in terms of everyday activities such as activities of daily living (ADLs), light housework, gardening, or socializing:

> Well I take it as exercise if I make the breakfast and I do a bit of ironing and when the weather is good I'd do a bit of gardening. (Participant 1)

No participant described ADLs as a form of exercise when referring to their earlier years. These data indicate that participants changed their perceptions of what constituted exercise in line with their changed functional ability. The data also indicate that this group of frail older adults largely did not purposefully set out to exercise; they instead chose to describe exercise as a consequence of other, more purposeful activities.

While 27 participants described themselves as participating in some form of daily exercise, only 6 described themselves as being active. Of the remaining group, 10 stated they were not active enough. Although the data did not reveal any obvious association between beliefs regarding exercise and perceived participation, individuals who felt they were inactive were less likely to describe walking as part of their daily routine. In contrast, those who described themselves as active all reported regularly walking outdoors. The data implied that an ability to participate in outdoor activities may be associated with a greater confidence in one's own exercise capability. It also indicated that walking is heavily associated with perceiving oneself as active:

> I'd get up in the morning and I was very independent. I was able to have a shower . . . And I'd, I'd walk around, walk around. I haven't dementia now or anything, only a bungalow. I'd walk around the house and I'd go up and I'd open the gates. (Participant 14)

Thus, exercise was largely defined in terms of everyday activities including ADLs, gardening, and housework, as well as more vigorous activities for some, such as walking and cycling. Exercise appeared to be a by-product of other more meaningful activities. This perception of exercise reflected participants' experiences as they reminisced about their earlier lives.

Structured exercise programs. Previous participation within a planned or structured exercise program appears to have influenced current perceptions of exercise. For example, three participants who had previously partaken in some kind of rehabilitation or exercise-based therapy chose to define exercise within those terms:

> I do try to do my small lot of breathing exercises you know like the puffs now and all that like. And I'd do the push-ups . . . I done the rehabilitation course there across the road and I loved it. (Participant 12)

Those who had participated in these programs also defined outcome expectations in terms of recovery while personal expectations were positive but qualified. Those who had participated in rehabilitation used physiotherapy and exercise as interchangeable terms. One participant, on being asked about exercise outcomes, replied,

> Well if you do physiotherapy now or running or something like that you know that you, you get some bit done. (Participant 8)

The data indicated strong positive perceptions regarding exercise when involved in a planned program.

Other forms of participation in structured exercise activities included those who had previously been in the military service or who had been involved in sports. However, three participants who had taken part in such activities when younger, and who described themselves as having a high level of physical fitness at the time, had a negative perception of their current level of activity. For example, two male participants, who were formerly in the army, described exercise primarily in terms of vigorous activities. Both found it difficult to describe themselves as exercising currently when compared with their previous activity levels. One participant, on being asked what exercise he did at home, replied,

> Nothing only . . . all I was doing was smoking . . . Just lazy. Loss of thought. I used to do it like. I used to be fit. I was fit. I got very lazy though. (Participant 23)

Personal Agency

Personal agency refers to one's ability to make choices, establish goals, and plan one's actions (McAdams & Olson, 2010). Three subthemes identified in the findings that influenced personal agency included perceived motivators, outcome expectations, and perceived barriers. Social support was also a strong theme identified; this is presented in the following section.

Perceived motivators. The desire to be independent and not be a "burden" on family members was a prominent motivating factor for this group. Participants expressed fear and anxiety when describing potentially losing their independence. One participant when speaking of her sister who had been confined to a wheelchair for a number of years stated,

> My god I'd never do that. I'd never, I'd crack up and you know everyone says to me "you know if you had to do it you would 'cause you wouldn't be able to." Oh but 'twould . . . so I have to keep walking. I have to keep walking. (Participant 6)

A sense of enjoyment was also identified as a strong motivating factor. Exercise, particularly in the contexts described above, was associated with a sense of personal achievement and fulfillment. Outdoor activities such as walking or gardening were also described by participants as something they enjoyed:

> I walk. People say would you not get a taxi and I laugh at them. Would you not get a lift and I say "It's too organized to get a lift." . . . You walk and you see everything and you're in communication with people. You're feeling better. (Participant 27)

Outcome expectations. All but one participant believed exercise had some positive outcomes for the general population. No participant associated exercise with negative outcomes although one believed that exercise had no outcomes at all. Seventeen participants believed that exercise had, or potentially could have, a positive impact on their own lives. Broadly, those outcomes were classified into three categories: physical, social, and mental.

Physical outcomes were described in terms of weight control, improved circulation, reduced pain, and as "good for joints" and general fitness. Maintenance was the most common outcome described with participants using expressions like "keeps you going," "stops you slowing down," and "keeps you alive." Those who had previously taken part in rehabilitation strongly associated exercise with recovery.

Regular participation in exercise was also associated with positive social outcomes. Exercise was seen to promote confidence and social skills, and to prevent negative social influences, particularly for younger adults:

> I vote for people taking up sports and staying away from them bloody pubs and drugs and everything like that like. (Participant 12)

However, participants did not see themselves as benefiting socially from exercise. This may be related to the availability of social support to this group, findings on which are presented in further detail below.

Finally, exercise was seen as having a positive impact on mental health through mood and cognition although this was not as widely identified as the two previous outcomes. The participants who described this outcome commonly associated increased physical activity with maintaining an "active mind"; two participants specifically related this to preventing dementia. Improved mood was also seen as an outcome, which they associated with improved mental health:

> 'Twould lift your spirits in the first place to have to get up to have something to do . . . [If] you're sitting down in the corner, as the one says twiddling your thumbs all day, sure wouldn't you go crazy? (Participant 7)

Yet despite the majority of participants associating positive outcomes with exercise, eight participants believed that it no longer had any effect on them personally due to their age, medical condition, or current level of ability. Social, mental, and physical outcomes were no longer seen as achievable due to these perceived barriers to exercise.

Perceived barriers. Medical condition, fear of falling, family, social isolation, self-consciousness, age, limited ability, and environment were the most common barriers to exercise cited by participants. Every participant interviewed cited at least one barrier, yet only eight participants referred to these barriers as having a negative impact on their outcome expectations.

In total, seven participants described age as a barrier to exercise. Five participants, aged between 79 and 85 years, described their age as limiting their outcome expectations. These participants all associated exercise with positive outcomes but believed those outcomes were limited to younger people

> P:It's (exercise) a good idea for younger people.
> I:What about people your own age?
> P:We're gone beyond it. (Participant 11)

Age was also described as limiting one's ability to engage in exercise. The phrase, "at my age," was used by five participants to qualify their responses when describing how they exercised. As commented by one participant,

> At my age now I can't rush, so I have my own pace.

Sixteen participants cited a medical condition as a barrier to exercise. Fifteen of those described it as a long-standing chronic condition. Only 5 described themselves as experiencing an acute event or exacerbation of symptoms at the time of being interviewed. Pain, fatigue, arthritis, and shortness of breath were the most commonly cited physical barriers by this group.

Interestingly, given the frail nature of this population, fear was described as a barrier to exercise by only three participants. Fears of falling or of becoming acutely unwell as a result of over-exercising were expressed. These fears had the potential to act as a strong barrier with one participant stating,

> I'm scared of my life. (Participant 24)

Fear was also closely linked to experiencing embarrassment in social situations by two participants, creating an additional barrier. Embarrassment and fear were both described as a strong barrier to enjoyment of exercise and other activities. As a result, participants felt isolated and unable to participate in their normal activities:

> I went to a funeral there now . . . I could hear all the men. "God isn't she after getting very stiff. I never knew she was that stiff" . . . I felt like a specimen like you know . . . Well it stops me going out enjoying myself. (Participant 3)

Environment was described as a barrier by four participants. External limitations such as steep hills, steps without railings, and heavy traffic were all described as preventing participants from exercising. However, environmental limitations also existed within the home. In one case, the move to sheltered housing was associated with a reduction in exercise. Other participants described themselves as being limited to an area of the house, such as downstairs, giving them insufficient room to exercise.

Social Support

A prominent finding from the data was that social support seemed more influential on exercise behavior than any other external factor. Participants described two types of social support as predominant pre-admission: family support and non-family peer support.

Family support. The data showed that family was the predominant source of social support for this group. Exercise and other activities were often described by participants as being conducted in conjunction with family members, rather than as an independent activity. Seventeen participants cited their family members as motivating them to exercise. This motivation could stem from a family member directly advising or asking them to exercise:

> My wife never stops us going. She's always saying get yourself out. (Participant 9)

Others reported more indirect family support or involvement in exercise. For example, one participant took up using light weights after teaching his grandson how to use them:

> Every second day I'd do it [lift weights] . . . he was home I was watching him and I told him he was wrong and I showed him what to do. (Participant 22)

However, the influence of family was a complex factor. Five participants who had described their family as motivating them also reported them as a barrier to exercise. Primarily family members appeared to limit exercise behavior by actively discouraging participation in the household routine. Three women interviewed complained about family members usurping their role by taking over tasks that they saw as their own:

> He [husband] took over when he retired . . . and I let him. I say I have to get the kitchen back you know. (Participant 6)

For some participants, family members explicitly discouraged them from exercising, which they attributed to a wish to protect or look after them. However, those who felt they were being directly prevented, as opposed to being simply discouraged from exercising, were likely to express anger or frustration:

> I went out to the shop and she [daughter] was coming in. And says she . . . "What do you want in the shop I'll get it" and I was halfway. Says I, "will you get away from me." I wanted to do it meself like. (Participant 15)

Non-family support. Non-family supports consisted of friends or peer groups. Four participants reported feeling isolated or lonely when at home. Thirteen participants described themselves as no longer having access to friends or other non-family peer groups and hence not being able to engage socially with others. These participants expressed a lack of social engagement despite the presence of family support.

Five participants identified the lack of available support from friends as a barrier to exercise. Inability to meet friends due to lack of transport or medical issues was cited by some participants; however, the main cause identified was the death of friends. As one participant stated,

> I've sort of no friends like. I've buried most of them. (Participant 3)

Two participants described themselves as having limited access to a social group, with one attending a senior citizens group and the other attending a local activity group regularly pre-admission. However, in both cases attendance was dependant on a family member.

Thus, although family support was widely available, this group's limited access to friend or peer group–based social networks may have acted as an additional barrier to exercise.

Historical Influences

The participants' exercise behaviors were influenced by a number of factors throughout their lifetime. Their background, gender, emigration history and exposure to technology all had an impact on their exercise history, and influenced changes in exercise behaviors throughout their lifetime.

Rural versus urban dwelling. Participant data suggested that there were differences in early life exercise behaviors between urban and rural dwellers. Participants who were rural dwellers described exercise in their early lives mainly in terms of work and walking. In particular, rural dwelling women strongly associated exercise and physical activity with workload:

> I did everything from working hard to . . . I'd do anything. I mean I could go out and I could turn sods and I could do the garden and set potatoes and I could split blocks and I could cut them with a saw. (Participant 14)

Although urban dwellers also described exercise in these terms, they were more likely to include social activities such as dancing and participation in sports as exercise:

> We played . . . oh loved tennis and camogie and you know when I was [a] youngster. (Participant 6)

Family life. The findings indicate that participants perceived transitions in family life, in particular assuming the role of carer, as having some impact on their exercise behaviors. For example, the transition into parenthood was mentioned by both sexes. The data showed that this change had a strong influence on women's perceived exercise behaviors. However, it did not appear to affect the majority of the male participants.

Some of the women interviewed, in particular those who had worked outside the home, associated the birth of their children with a reduction in exercise. This appeared to be as a result of giving up work to stay at home and the subsequent reduced social participation that some described:

> Ah 45 years ago I gave it [work] up after my daughter was born. (Participant 6)

However, women who worked in the home were more likely to perceive having children as increasing their workload and hence their exercise levels:

> I was a farmer's wife 60 years, over 60 years and I'll tell you . . . That was my day and I had eight in family . . . I hadn't much time for hanging about I tell you this much. (Participant 7)

As children grew older and moved away, both groups associated this shift with a reduction in activity.

Women were also more likely to describe later life transitions, such as caring for a spouse, as affecting on their exercise levels. This also appeared to be associated with a perceived increase in workload and hence exercise.

Emigration and technology. Urban and rural dwellers were both likely to describe the impact of emigration as a negative factor on their physical activity. Participants who emigrated described a notable decline or end to their participation in sports or other activities:

> 'Twas always dogs nearly but I was in England for 38 years . . . I went to England then and there's no hunting or fishing over there then. (Participant 20)

The advent of more modern technologies such as farm machinery or the introduction of the car was viewed as having a negative impact on exercise levels. Although both urban and rural dwelling participants noted this impact, it was rural dwellers in particular who associated the introduction of machinery with a gradual decline in their own activity levels. Considering that rural dwelling participants in particular associated exercise and manual labor so strongly, it is not surprising that a reduction in workload related to a decline in activity:

> Well the hard work was . . . was eh . . . 'Twas gone like. There was all machinery and everything came in then. So that was the end of the hard work. (Participant 26)

Discussion

The findings of this study indicate that frail, community-dwelling older adults perceive exercise as an important activity with potentially positive outcomes. Yet, their descriptions of their own exercise behaviors indicated that exercise was traditionally perceived as an incidental outcome rather than prioritized as a health-related activity. All participants showed a strong lifelong association between workload and exercise. Changes in workload led to perceived changes in exercise levels at multiple stages throughout life. This association was upheld through periods of change or major life events, such as emigration, entering parenthood, caring for a spouse, or getting their first car. Other activities that would appear more exercise oriented, sports for example, had other more purposeful outcomes such as socializing. This implies that this cohort viewed exercise primarily as an outcome of a purposeful activity.

These perceptions influenced current exercise behaviors that were still based strongly on workload. In line with Bandura's (1997) hypothesis that people change their exercise behaviors as their functional abilities decline, changing levels of ability led participants to change their descriptions of exercise. However, these descriptions remained heavily based on function. When describing exercise in later life, participants also placed a greater emphasis on the importance of walking and being able to spend time outdoors. The data suggest that these activities were associated with a greater confidence in their own exercise capabilities.

These findings support other data that suggest that older adults place a high value on functional independence (Melillo et al., 1996). However, this is the first study to examine frail older adults' exercise history and how it relates to their current perceptions of exercise. The finding that this cohort view exercise as an outcome of other purposeful activities indicates that programs targeting this cohort may benefit from using functionally based exercises or exercises with a clear functional goal.

Those who had previously participated in structured exercise or rehabilitation programs defined exercise and its outcomes within those terms. The data indicated strong positive perceptions of exercise undertaken in these programs. This is supported by other research, which indicates that education and positive experiences of exercise in a recovery setting has a positive impact on exercise beliefs (Hurley, Walsh, Bhavnani, Britten, & Stevenson, 2010). These strong associations appear to have been associated with the positive physical outcomes achieved during these programs. However, they may have been perceived as such due to the positive functional outcomes associated with rehabilitation programs. Research has also found that participants in rehabilitation-based programs place a value on the educational component of rehabilitation (Hurley et al., 2010). Therefore, while structured exercise programs have the potential to influence exercise beliefs and hence behaviors in this population, there is a need to establish what components of structured rehabilitation programs specifically affect these outcomes.

Perceived motivators expressed by this group included positive outcome expectations, personal enjoyment, and a wish to remain independent. Positive outcome expectations included weight control, improved circulation, reduced pain, improved mood, and increasing and maintaining physical fitness. Perceived barriers expressed by those interviewed included lack of social support, presence of an underlying medical condition, fear, self-consciousness, age, environment, and limited ability. These findings are largely in line with studies of community-dwelling, non-frail, older adults (de Groot & Fagerstrom, 2011; Mathews et al., 2010). However, the perception of family support as a potential barrier to exercise has not been raised in previous research. In addition, the lack of non-family social support networks available to this population appear to be more accentuated in this study than in previous studies of non-frail older adults.

In this study, family was the most available form of social support. This suggests onset of frailty is associated with an increased dependence on family support. This is supported by Drennan et al.'s (2008) finding that older adults who have experienced a decline in health are more likely to be dependent on their families for social support. However, family support may limit as well as motivate frail older adults. In this study, some participants appeared to be excluded from activities they would have traditionally done, such as housework, and sometimes actively discouraged from exercising in an effort to protect them. For this group, who perceive such a close association between work and exercise, this marginalization appeared not only to reduce exercise levels but also to have an emotional impact. Some participants felt they no longer had a purpose within the home, leading them to feel unhappy or frustrated. This indicates that there may be a need for family members, acting as carers to frail older adults, to be educated on the importance of exercise and maintaining functional independence for this group.

Although family support seemed an important positive influencing factor, previous research points to social support networks involving friends and peers as being the most effective in promoting exercise and other health behaviors in older adults (Giles et al., 2005; Resnick et al., 2002; Warner et al., 2011). In the present study, only three participants reported having access to support from friends or peers. This contrast to previous research, which has not specifically focused on frail older adults, suggests that older adult's non-family social networks decline because of frailty. Thus, any intervention to promote exercise behaviors in frail older adults should also examine the potential for creating social support networks in their communities.

Potential Limitations and Strengths

This study had both limitations and strengths. As the author of this study is a physiotherapist who specializes in working with older adults, there is an assumption that the author's knowledge, beliefs, and experience will have had some impact on the findings. However, the author endeavored to take a reflexive approach to the research by recognizing her own beliefs and biases about frailty and exercise at an early stage, and reflecting on them throughout the research process. By acknowledging beliefs in this way, an author can be more receptive to the research and limit the influence of his or her own preconceptions (Jootun, McGhee, & Marland, 2009). This approach was taken to promote the rigor of the research. Rigor in qualitative research helps to ensure the findings are reliable, credible, and valid (Nicholls, 2009). In addition, the author did not work in the hospital where the interviews took place and was not known to be a physiotherapist by the participants.

Another potential issue was that the participants were interviewed about their exercise behaviors at home while in hospital. In addition, some had already participated in the intervention group, which may have had some impact on their pre-existing perceptions of exercise. However, the average LOS prior to interviews was 9.45 days and recall was likely to be relatively accurate. The potential for bias here was also acknowledged during data collection and analysis, and the author was careful to delineate between pre- and post-intervention views during the interviews.

Notwithstanding these aspects, the findings of this study are important as they provide insights into the exercise behaviors of frail older adults. To the author's knowledge, this is the only study to examine perceptions of exercise specifically in this cohort. The findings have revealed how the progression of frailty, the impact of changing social supports, and varying perceptions of exercise may affect exercise behavior. It has highlighted previously unexplored areas including the potential limitations imposed by family support.

Conclusion

Health professionals planning interventions to promote or maintain exercise in frail older adults should be aware of the complex nature of factors that influence exercise in this population. Frail older adults strongly associate exercise with workload and other functional activities. This perception has existed throughout their lifetime. However, those who have participated in structured rehabilitation programs instead associate exercise primarily with positive physical outcomes. Motivators and barriers to exercise in this study were found to be similar to those experienced by non-frail older adults from previous research. However, frailty is associated with a decline in non-family support networks. Family-based support is a positive influence, yet it may lead to a change in traditional roles within the family and consequently act as a barrier to exercise.

Thus, any program targeting frail older adults' exercise behaviors should take a multifaceted approach. Programs that concentrate on functional outcomes may be more relevant for this population. Family members in a caring role may benefit from education regarding exercise behaviors. Community-based strategies that promote social support networks may also benefit this group.

Appendix

Interview Schedule

I would like to ask you a few questions about how active you are in general.

- Exercise can be lots of things including walking (and other appropriate example). Thinking of a typical day at home, is there anything that you do that you would consider to be exercise?
- How else would you be active when you are at home?
- Does anything encourage you or stop you from exercising at home?
- How did you exercise when you were younger? How has that changed?
- Do you think exercise has any effect on you?
- How do you think exercising effects people in general?
- Would you say people around you at home—give example of family or friends if needed—encourage you to exercise or not?

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