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OLDER ADULTS' PERSPECTIVE TOWARDS PARTICIPATION IN A MULTICOMPONENT FRAILTY PREVENTION PROGRAM: A QUALITATIVE STUDY

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Abstract: *Objectives:* This study aimed to explore pre-frail and frail older Chinese people's perspectives on a multi-component, group-based frailty prevention program in Hong Kong, along with their views regarding factors determining participation and sustainability of such program. *Design:* Seven focus groups were conducted. *Setting:* Community elderly centres. *Participants:* A total of 38 community-dwelling older people aged 54 – 84 (mean age, 64.9 years; female, 58%; married, 68%; retired, 97%) screened with pre-frailty or frailty completing a 12-week multi-component (involving physical, cognitive, and social activities), group-based frailty prevention program were interviewed. *Measurements:* Thematic analysis was conducted. *Results:* Using thematic analysis, perceived health benefits, peer support and social networking were identified as key motivators concerning intention to participate in the frailty prevention program; whereas perceived health benefits, socializing, sense of connectedness, expert guidance and sense of dignity were identified as key motivators concerning program adherence. *Conclusion:* Majority of participants provided positive feedbacks about the multi-component intervention program in regards to their physical health, psychological well-being and social life. These findings highlighted several important factors for consideration in future design of frailty interventions regarding the needs of pre-frail and frail older adults, which could help to motivate and sustain their participation in community-based frailty prevention programs.

Key words: Frailty, multi-component interventions, exercise, cognitive training, social activity.

Introduction

Frailty is a state of decline in function reserves, which increases the risk of adverse health outcomes such as morbidity, disability, institutionalization, and mortality in older adults, after a stressor event (1). Depending on how frailty is measured, the prevalence of frailty varies from 4% to 59% for those aged 65 years and above (2). Frailty is common in older Chinese people, with the prevalence of approximately 10% (3). Nevertheless, frailty is a dynamic process that is neither inevitable nor irreversible as people age (4, 5). Therefore, it is important to develop effective strategies to prevent and reduce the progression of frailty for older adults.

There have been many studies exploring the benefits of exercise in frail elderly. A systematic review examined the effectiveness of exercise interventions for the management of frailty and suggested that structured exercise training has a positive impact on frail older adults (6). Another systematic review suggested that multi-component exercise intervention composed by strength, endurance and balance training is the best strategy to improve risk of falls, gait ability, balance, and strength performance in physically frail older adults (7), although the effects of exercise interventions on balance and ADL functional mobility in frail older adults were not consistent (8).

The benefits of exercise in frail older adults go beyond just physical frailty. A Spanish study showed that a multi-component exercise intervention could help to reverse frailty and improve cognition, emotion, and social networking in community-dwelling frail elderly people (9). On the other hand, studies of interventions with nutritional supplementation and cognitive training (either single or dual combinations, plus exercise or not) also showed positive results in reducing frailty (10, 11). A recent systematic review summarized that exercise, nutrition, cognitive training, prehabilitation, and geriatric assessment and management are effective in preventing or reducing the level of frailty (12).

Although the majority of the interventions showed positive effects on a variety of frailty related outcomes, it is uncertain that whether these interventions could be successfully translated and sustained in practice. A number of scientific organizations (e.g., British Geriatric Society) have started advancing different strategies to screen for frailty, and to develop programs to tackle frailty. However, implementing and sustaining frailty preventive interventions in practice is challenging. One of the challenges resides in the need of intention to participate in community-based frailty prevention program as well as program adherence. Evidence suggests that non-compliance to interventions with exercise training and nutrition consultation can be between 20% and 100% (13, 14).

To seek strategies for implementing and sustaining frailty prevention interventions in communities, information about older adults' perspective towards participation in frailty prevention programs is required. There are many frailty prevention programs around the world, but studies that look at the views of older adults towards a multi-component frailty

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program are limited. Locally, a frailty prevention program has been adopted in a one-stop integrated health and social care centre since 2014. This program involves a frailty screening and a 12-week training program for frailty prevention, adopting a multi-component approach. The program has been demonstrated to be effective in reducing frailty (15) and be well accepted by community-dwelling older adults; therefore, generates an excellent opportunity to evaluate the impact of this type of frailty prevention program and investigate participants' views on the program.

In this study, we documented participants' perceptions of program characteristics and factors relating to their intention to participate in the frailty prevention program as well as program adherence. Findings of this study will provide insight about what motivates older people to participate in community-based frailty prevention programs and what reasons they have for continuing with the program.

Methods

Participants and procedures

This qualitative study was conducted with a sample of participants a frailty prevention program recruited from three integrated primary health and social care centers for the old and the soon-to-be-old, which were Jockey Club CADENZA Hub in Tai Po (New Territories), the Hong Kong Society for Rehabilitation in Lam Tin (Kowloon) and the St. James' Settlement in Causeway Bay (Hong Kong Island). In brief, the program was conducted in community settings with participants identified through community screening. Eligible participants were 50 years or older, pre-frail (met specified cut-offs for one to two of the 5-item simple frailty questionnaire (FRAIL)) (16) and did not live in an institution. The program consisted of 24 sessions of exercise, cognitive training and board game activities. Participants attended two 2-hour weekly sessions over 12 weeks of which 1 hour was exercise training and 1 hour was cognitive training and board game activities (15). The study was approved by the Clinical Research Ethics Committees of the Chinese University of Hong Kong. Written informed consent was obtained from all participants.

The focus group

The focus groups took place at the three centers where the duration of each discussion ranged from 60 to 90 minutes. Semi-structured interviews were conducted, guided by a moderator and a research helper that took notes. Participants' demographic information were asked by separate questionnaires while their perspectives on the frailty prevention program, along with their views regarding factors determining their intention to act and sustainable participation were explored in the discussion. The discussions were audio-recorded with the participants' consent and transcribed by the research helper who attended the meetings.

Data analysis

The interviews were analyzed using thematic analysis. The transcripts were reread, and coded line by line using an inductive approach. Codes with similar units of meaning were then collated, categorized and refined into main themes. The above steps were iterated until no new categories emerged. The coding framework, the codes and the themes were validated by another member of the research team, and a scholarly report of the analysis was prepared (17). Quotations are provided in this paper to support the themes. Data saturation was reached when there was enough information to replicate the study, and new information was not obtained by interviewing additional participants (18).

Results

Thirty eight community-dwelling older people aged 50 years or older with a mean age of 65 years (range 54 – 84 years) were interviewed. Of these participants, 58% were female, 89% had secondary or above education, 68% were married, 97% were retired, 36 were pre-frail, and 2 were frail (Table 1). Using thematic analysis, perceived health benefits, peer support, and social networking were identified as key motivators concerning intention to participate in the frailty prevention program; perceived health benefits, sense of connectedness, and sense of dignity were identified as key motivators concerning program adherence.

Table 1

Participants' demographic and health characteristics (n = 38)

Characteristics	Mean / n(%)
Mean age (range)	64.9 (54 - 84 years)
50-59	5 (13.2)
60-69	25 (65.8)
≥70	8 (21.1)
Gender	
Female	22 (57.9)
Male	16 (42.1)
Education level	
Primary or lower	4 (10.5)
Secondary	15 (39.5)
Tertiary or above	19 (50)
Marital status	
Single	6 (15.8)
Married	26 (68.4)
Widowed	3 (7.9)
Divorced	3 (7.9)
Employment	
Retired	37 (97.4)
On part-time job	1 (2.6)
FRAIL screen	
Pre-frail	36 (94.7)
Frail	2 (5.3)

Intention to participate in the frailty prevention program

Factors that motivated participants to initiate participation were organized into three themes, including perceived health benefits, peer support and social networking.

Theme 1: Perceived health benefits

Physical health and learning new skills

The process of learning new skills in order to stay healthy and prevent frailty was a key motivator for participants to join the program "I joined the program as I wanted to exercise more to stay healthy! Which is my first priority" (Male, age 64). Acquiring correct exercise skills were also important "I can learn more on correct postures in doing exercise to prevent getting hurt" (Male, age 66).

Participants described that by learning new skills they would remain strong and healthy to provide support in caring for their family members "When I found out that the program was about frailty prevention, I thought to myself that I can share some tips to my family and friends. It is beneficial to both myself and the people around me." (Female, age 54).

Psychological well-being

Some participants mentioned that they would like to be involved in things that they find meaningful in their daily routine "We are retired... so what we have is time, so we need to see how to spend our time meaningfully" (Male, age 79).

Theme 2: Peer support

A number of participants shared that their participation was triggered by their friends and family members "My friends recommended the frailty prevention program to me at the very beginning" (Male, age 72). Participants also commented the need for companionship in order to motivate them to exercise "…doing exercise alone at home is not easy. Exercising with a companion increases my motivation" (Female, age 61).

Theme 3: Social networking

Although health benefits were identified as a key motive, one participant stated that the opportunity to meet new friends through the program was also a motivation "...and to be honest, I'd like to meet more new friends" (Male, age 79).

Program adherence

Similar to the motivation for the intention to participate in frailty prevention programs, perceived health benefits relating to physical and cognitive functioning remain the strongest motivator for participants to adhere to the program. Other reasons were positive impacts on their psychological well-being, socializing and sense of connectedness, expert guidance from the coach and sense of dignity.

Theme 1: Perceived health benefits

Physical health

Majority of participants commented that the program has made positive physical health changes to them "The most obvious change is my knee. Before the training, I was unable to kneel down while doing housework. After the program, I can feel a significant improvement to my knee, including better stretching and muscular strength" (Female, age 64). Another participant commented "My back is straighter after the training…I can feel that my body balance is better" (Male, age 68).

Cognitive performance

Some participants commented that the cognitive part of the frailty prevention program helped them to keep their mind active "After playing with the board games, I felt that I'm able to respond faster" (Female, age 65). Another participant expressed that the program had led to cognitive improvement "I'm sharper in thinking, better in analysis, more attentive in observation...It's just like waking myself up from a deep sleep" (Male, age 72).

Psychological well-being

Many participants talked about how this program had positively impacted on their psychological well-being. The program had helped them to regulate a routine life after retirement and allowed them to spend time more meaningfully "After the training, I learnt how to make good use of my time (after retirement)…..During this period, I found my life to be more regular..." (Male, age 79).

A sense of happiness was also observed among the participants as a result of improved functional health "I'm happier after the program as I have learnt a lot...During my first lesson, my one foot balance can only last for 17 seconds, and after the 24 lessons, it can last for 1 minute and 33 seconds" (Female, age 61).

Theme 2: Socializing and sense of connectedness

Participants expressed that the opportunities for social interaction in classes were important motivators to engage them in the program. Most participants expressed that meeting new friends was important "I met a lot of friends in the program, which is the most important factor for me. We played happily together" (Female, age 61). The participants reflected on the opportunity for meeting and communicating to a range of people during the program. They also indicated that rapport was built within the group which created a fun environment for them to enjoy playing board games together "We were all very excited when we were able to complete the task together! We can't achieve this feeling when we play computer games alone. The best part of playing board games was that it can boost our communication and mutual understanding…" (Male, age 63).

Furthermore, some participants mentioned that social

interaction between participants was not only limited to the classes they attended. As a result of this program, they expanded their social activities beyond their class "We will organize hiking activities, or gather together monthly and have a chat over tea after the program" (Female, age 60). Another participant shared that by joining such program allowed him to connect to the world, as a result helped with his well-being "Apart from staying healthy, I hope to connect to the outside world in order to stay positive" (Male, age 79).

Being able to enjoy the training process was also a motive for them to continue with the program. One participant mentioned that they were willing to travel from another district to join the program because the program had given them a lot of interaction with their peers and a sense of well-being. "Some students live in Yuen Long are happy to travel to join the class. Our interaction is very good, whether we are doing exercise or playing games! We enjoy the process so much" (Female, age 61).

Theme 3: Expert guidance and sense of dignity

Having a sense of dignity was also another major reason for the participants to adhere to the classes. Most participants mentioned that they enjoyed the process as they were treated with dignity, compassion and respect from the staff members "Apart from teaching the whole class, the coach would try his best in responding to the needs of each participant" (Male, age 63).

Participants in the exercise class also valued the coach's guidance and commented that it was a motivation for them to adhere to the program "Without the coach's guidance, we would have no motivation to do it regularly at home..." (Female, age 61). Furthermore participants appreciated the effort the coach had put into teaching the class and his ability to create a fun atmosphere for participants to enjoy the exercises "The coach put a lot of effort to teach my class…..He can boost your interest in doing exercise" (Male, age 79).

Recommendation for future programs

Many participants gave suggestions on how the program can be further improved for better adherence. A major theme that was raised was the cost of the program "Free or a lower cost can be a strong incentive for us to join" (Male, age 66). Additionally, some participants raised the issue that the exercise ability to among the participants varies and suggested that participants should be arranged in different levels "I think it's better to differentiate the participants into different classes according to their level and ability as some people don't normally do any exercise in daily lives so they may find it more difficult to keep up with the movements" (Female, age 61).

Discussion

This qualitative study was conducted to explore what motivates older adults to participate in a multi-component group-based frailty prevention program in community settings, and what reasons they have for continuing with the program. In contrast to previous research which primarily focused on older adult's perceptions and experiences of participation in single-component programs (e.g., exercise interventions), the frailty program in this study is a multi-component approach involving exercise and cognitive training as well as social activities. Hence, we explicitly sought the views of pre-frail and frail older adults who had participated in this program, assessing not only the physical benefits but also the cognitive and the psychosocial aspects, which have been integrated into the definition of health as defined by the WHO (19). Therefore, the findings of this study provided important insights towards implementing future frailty program.

As with previous research showing that individuals are more likely to engage in physical activity when they perceive their participation will lead to better health (20, 21), our findings indicated that the desire to improve physical and cognitive functioning was an important reason for starting program participation; in particular, for those who are symptomatic (e.g., had experienced some form of physical and/or cognitive decline such as memory loss). For some participants, the motivation was based on remaining just well enough to continue to live independently and not be a burden on others, while others expressed that the ability to remain strong and healthy enabled them to continue to provide support in their role of caring for their family members. This is also consistent with the health belief model stating that if a person has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition (22). This and the findings of the present study highlight the need for promotion of potential physical and cognitive benefits of joining a frailty prevention program.

The desire to have a happy and a meaningful life was also identified as a reason why older adults participated in the program. Retirees struggle with finding a structure and purpose in life. In particular, for those who have yet to establish a routine the opportunity for being actively involved in some kind of meaningful activities was important. Some participants in this study commented that they went through a period of trial and error after retirement and did not find what they are looking for right away, but this program has helped them to start an active routine, meeting new friends, and discover a sense of meaning in life. Some participants were also motivated to attend the program as they expected the program would give them a chance of socialization. This suggests that socializing or meeting new friends can be used as a theme to encourage elderly people to join community programs. This is especially important for those who are non-symptomatic and/or those who attach low importance to physical/cognitive benefits.

Many of the participants also mentioned peer support as a facilitator for the intention to participate in the program. Peers in a group can offer emotional support and provide encouragement beyond the capacity of health professionals.

This is in line with those of a systematic review in older adults, where consistent positive associations were found between peer support and adherence to community-based group exercise interventions (23). A recent systematic review also suggests that using peers to deliver programs can help to promote and maintain adherence to exercise programs (24).

The physical and cognitive health gains during the program have an influence on the level of determination to adhere to the program. The health benefits gained may energize an older adult to continue to participate in the program by increasing the level of satisfaction of some psychological needs (e.g., autonomy, competence), and ultimately, a more self-determining motivation (or autonomous motivation) and adherence to the program. This has been noted within the context of self-determination theory whereby intrinsic motivation has been shown to be more predictive of long-term exercise adherence (25).

Beyond the perceived physical and/or cognitive health gains, improved sense of connectedness has a powerful influence on program adherence. We found that many of the participants that appreciated the health benefits had expressed appreciation and satisfaction with the environment which provided a means for them to meet and talk to a range of people, and to maintain social connectivity in their later lives. Some studies suggested that older people see their social lives and their social relationships as the most important determinants of successful ageing (26). In addition, evidence has suggested the links between satisfied social needs, health and wellbeing in later life. For example, fulfilled social needs protect against diseases and depression and were also found to have a positive influence on self-esteem and life fulfillment (27). Sense of connectedness has also been identified as an important facilitator of maintaining participation (28, 29). In addition, social interacting with their peers has created an enjoyable atmosphere for them. This is in agreement with other studies where support social interaction is an important factor for program adherence (28, 30). Engaging in more social activities is an important factor for elderly people to prevent social isolation. However, attempts to prevent or manage frailty have been mostly focused on the physical aspects of the condition, while only some have addressed cognitive and/or psychosocial aspects (31). Therefore, in a complementary approach, frailty prevention programs should be aware of satisfying social needs (stimulating social contacts) among older adults.

In this study, we also found that the attitudes and behavior of staff, especially the coach, and the culture of care play significant roles on program adherence. For many of the participants, attention to small details of care and to individual preferences in relation to program activities are highlighted as being respected from others, which was considered necessary for continuing participation. Some participants in this study expressed appreciation for receiving knowledge from the exercise coach regarding the purpose and benefits of each posture or movement that was tailored to their individual fitness level. These forms of support and caring relationships could help the participant maintain a sense of dignity, which may enhance prolonged participation. Participants from this study expressed that the atmosphere created by the coach from the exercise class also enhanced their interest in the program, demonstrating that the role of the coach is important to increase a participant's acceptability to adhere to a program. Certainly, a vast majority of interventional studies have emphasized main effects and group differences in training responses; little attention has been paid to individual differences and their preferences. Therefore, while ensuring participants are getting the benefits from the program in a group setting, proper consideration of the variability in participant responses is critical to build personal relationship and to enhance program participation.

The themes identified from this study bear insights which could be taken into account when designing frailty prevention programs. First, the wide range of physical, cognitive, and psychological benefits can be attributed to program participation. Therefore, provision of multi-component programs would be important in order to meet the diverse needs of older adults. Indeed, one of the attractions of the intervention in this study is that it combined physical exercise, cognitive training and social activities as a multi-component intervention, whereas most studies are based on single component intervention with physical exercise as the most frequent component targeting frail older adults. Second, the obtained results provide evidence that peer support and sense of connectedness could help explain intention to participate in the program and program adherence. Therefore, group-based programs with opportunities for social interactions should be provided. Being a group based activity, it allowed participants to interact and form bonds with peers. Additionally, the social component of this intervention had further enhanced this bond because it allowed communication and discussion on how to play the board games among the participants. Third, expert guidance and sense of dignity are likely to have had a positive impact on maintaining participation. Therefore, a frailty program that can provide people-centered care/patient-centered care with consideration of participants' preferences has the potential to enhance adherence.

Promotion strategies should also be considered as part of the implementing process of any programs, because this will also influence participants' motivation to join the program in the first place. Some participants were willing to travel from another district to join the program in this study, as described by the participant that it was mainly due to the socializing aspect with their peers. However, it is worth to note that apart from socializing, another reason that impacted their willingness to commute may be due to the increased awareness and knowledge of the frailty topic. This study used the FRAIL scale to identify people with frail or pre-frail status, the questions administrated might have elicited/increased participants awareness and attracted them to participate as they

see such a need to make actions to maintain health status or prevent health decline. Other reasons may be due to the lack of programs or resources available in their local residing areas. Promoting strategies that can raise awareness of frailty or age-related problems, address the need of older adults and making resources/information regarding the program easily accessed are effective strategies to target participants to join the program.

In addition, several practical aspects should be considered. There was consensus that affordability is a factor for determining participation. Some participants expressed their wishes about the continuity of the program at an affordable price. As such, provision of free or low cost affordable frailty prevention programs would be an important part of strategies for frailty prevention. Future cost effectiveness analysis would inform policy and planning. Besides the financial concern, some participants preferred the exercise classes to be arranged in different intensity levels, thus having a junior and advanced class can be beneficial. A previous study demonstrated that exercising with older or younger people could lead to negative social comparisons (28). This finding draws attention to diversity among older adults in terms of abilities and needs. Indeed, some participants were happy with a small improvement such as maintaining functional independence, whereas others tended to aim for a bigger achievement with the goal of improving functional independence. Therefore, assessing an older adult's expectations would also be an important part of the intervention.

The findings of this study should be interpreted with caution. First, attitudes toward the frailty prevention program were explored amongst older people who had participated in the program whose attitudes may differ from older people that had not participated in such programs. Second, the majority of participants in this study were pre-frail older people who may not be representative of those who were frail. However, a wide range of participants with different ages, educational background and marital status were recruited in this study, hence, a more diverse opinion in relation to the frailty program can be collected.

In conclusion, key elements for successful implementation, with respect to participants' intention to participate and adhere to the program, are to adopt a multi-component group-based approach, with social elements, in which care could be more people-centered to build a caring relationship based on respect and dignity, be affordable, and with several levels of intensity to meet the needs of each participant. Future studies should target more on frail individuals to explore their opinions on community frailty prevention programs. The absence of qualitative studies in Hong Kong involving medical and social work professionals also suggests that future research is needed to address their point of views about their role in support of frailty prevention and interventions. Furthermore, quantitative analysis to quantify changes in frailty status and well-being would complement this qualitative study and add much to understanding the effects of frailty preventive interventions.

Conflict of Interest: None declared.

Ethical Standards: The study complies with the current laws of the country in which it was performed.

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