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Original Research Article

Effects of a Peer-Led Pain Management Program for Nursing Home Residents with Chronic Pain: A Pilot Study

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Abstract

Objectives To examine the feasibility of a peer-led pain management program among nursing home residents.

Design A quasi-experimental design.

Setting Two nursing homes.

Subjects Fifty nursing home residents.

Methods The experimental group (n = 32) was given a 12-week group-based peer-led pain management program. There were two 1-hour sessions per week. Education in pain and demonstrations of nonpharmacological pain management strategies were provided. The research team and 12 trained peers led the sessions. The control group (n = 18) received one 1-hour session of pain management program each week over 12 weeks from the research team only. Outcome measures for the participants were collected at baseline (P1) and at week 12 (P2). Data from peer volunteers were collected prior to training (V1) and at week 12 (V2). T-tests were used to compare the differences in outcome measures collected at two time points.

Results There was a significant reduction in pain intensity from 5.8 ± 2.6 (P1) to 3.4 ± 2.5 (P2) for the experimental group ($p = 0.003$) and from 6.3 ± 3.0 (P1) to 3.1 ± 2.4 (P2) for the control group ($p = 0.001$). Activities of daily living significantly improved for both the experimental group ($p = 0.008$) and the control group ($p = 0.014$). There was an enhancement in happiness level for the experimental group ($p < 0.001$), while the loneliness level dropped significantly for the experimental group ($p < 0.001$) and the control group ($p = 0.031$). The peer volunteers showed a significant increase in self-rated pain management knowledge (2.9 ± 2.6 to 8.1 ± 1.2, $p < 0.001$) and self-efficacy in volunteering (5.8 ± 2.9 to 8.3 ± 1.5, $p = 0.032$).

Conclusion The peer-led pain management program was feasible and has potential in relieving chronic pain and enhancing the physical and psychological health of nursing home residents.

Key Words. Peer; Chronic Pain; Exercise; Older Adults; Pain Management

Introduction

When people enter the aging process, they are more vulnerable to suffering from age-related disease and hence pain. Chronic geriatric pain is defined as an unpleasant sensory and emotional experience affecting persons who are over 65 years old for more than 3 months, and it is associated with actual and potential tissue damage that is noncancerous in nature [1] or is described in terms of such damage. It is estimated that 37–50% of community-dwelling older people in Hong Kong suffer from pain [2,3]. The prevalence of pain among nursing home residents may even be as high as 70% [4]. Consequences of unrelieved chronic pain among older adults include hindered activities of daily living, depression and anxiety, decreased social interaction, impaired mobility and falls, sleep disturbances, malnutrition, and, ultimately, an increase in health care utilization and expenditures [5]. Therefore, innovative and cost-effective ways of managing chronic pain should be explored.

To address chronic pain, analgesics remain the primary pain management tool [5,6]. However, the use of pharmacological methods has been found to be unpopular among older adults, as they worry about

adverse drug reactions and accept chronic pain as part of aging [7]. Due to low compliance with the pharmacological approach for pain management, an increasing number of studies have been conducted to support the use of nonpharmacological pain management strategies as an effective approach to dealing with chronic pain [8]. The commonly used strategies include education programs, empowerment programs for pain sufferers, exercise programs, acupuncture, transcutaneous nerve stimulation, massage, relaxation therapies, cognitive-behavioral therapy, listening to music, visual stimulation, guided imagery, motivational interviewing, acupressure, and multisensory stimulation arts and crafts therapy. Indeed, it is expected that the use of nonpharmacological interventions is more acceptable for older adults who are already taking multiple medications for their chronic diseases.

A pain management program (PAP) has been carried out in nursing homes in Hong Kong by health care professionals [4]. Nursing homes were randomized into an experimental group in which the participants ($n = 296$) received a 1-hour session of pain management education each week, or a control group in which the participants ($n = 239$) were provided with regular care only, such as routine physio sessions and social activities organized by the nursing homes. The PAP included pain education and an introduction to and demonstration of various nondrug strategies. Those in the experimental group showed a significant reduction in pain scores, higher scores in happiness, and lower perceptions in loneliness than the control group. The use of nonpharmacological methods of pain relief significantly increased among the participants in the experimental group as compared with those in the control group.

As with other chronic conditions, effective self-management is essential for optimal outcomes in chronic pain management. Self-management is "the ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition" [9]. The effectiveness of self-managed interventions for pain among older adults has been explored in a review, in which 96% of the 27 articles identified showed positive outcomes from using nonpharmacological approaches to manage pain, with a median reduction in pain scores of 23% [10]. Despite the benefits of self-management for people with chronic pain, it is challenging to implement pain self-management due to limited health care resources in a busy clinical setting.

Peer support models are becoming widely used because they are cost-effective in helping patients manage chronic conditions and have shown promising results [11]. Peer support, where lay individuals receive a moderate amount of training to support those with whom they have shared experiences, has been regarded as an effective self-management strategy for chronic conditions. Using peers to lead health programs helps to build a high level of rapport among people of similar ages and life experiences [12], and allows participants to feel less threatened when supported by someone like themselves as compared with the experience of seeking professional help [13].

Pain management programs with peer support have been shown to yield positive outcomes, including an improvement in perceived quality of life, functional capacity, number of complaints about pain, and belief in pain myths [14,15]. In addition, a Cochrane review showed that self-management education programs by lay individuals (rather than health professionals) for people with chronic conditions had positive outcomes, such as reductions in pain, disability, and fatigue [16]. Peer support interventions for community-dwelling adults with chronic noncancer pain were also reported to be effective in a systematic review [17].

Although positive outcomes have been shown in peer education programs in pain management, to the best of our knowledge, none of them have focused on older adults and those living in nursing home settings. A PAP led solely by health care professionals has been found to be effective [4]. Therefore, the question of whether a PAP using peer volunteers for older adults in nursing homes would also be effective seemed well worth exploring. Thus, the objectives of the present study were to examine the feasibility of a peer-led PAP in reducing pain, enhancing pain self-efficacy and activities of daily living (ADL), reducing loneliness and increasing happiness for nursing home residents; and to evaluate the volunteer experience for the peer volunteers.

Methods

Study Design

A quasi-experimental design was applied to investigate the efficacy of adding peer volunteers (PVs) into PAP. Ethical approval from the ethics committee of the university was obtained.

Peer Volunteers

Peer volunteers were recruited from a pool of regular members of the Institute of Active Ageing (IAA) of the Hong Kong Polytechnic University, which is dedicated to delivering innovative educational programs to promote active aging. The IAA staff announced and promoted this study to those members. Individuals who expressed an interest attended a selection interview. The selection criteria for the PVs included those who were ≥ 50 years old (the requirement for membership in the IAA), retired, and committed to completing two 2-hour training sessions, and who had passed an exit test that included knowledge, demonstration, and re-demonstration of skills in the use of the program materials and in leading the program.

Educational materials on pain relief were prepared. A "Guidebook for Peer Volunteers" was given to all PVs to

ensure that the procedure and content of each session were standardized. Safety and privacy issues were mentioned in the guidebook. It also included instructions on how to use the "I can do it" booklet, which summarized the information on pain management strategies and the use of drugs and various nondrug therapies, and gave pictures of the steps involved in the physical exercises. The "I can do it" booklet was given to all participants. The contents of these materials were validated by the research team.

Participants

Nursing homes were approached and invited to participate in the study by phone or email. Two nursing homes responded to the invitation, and they were randomized at cluster levels according to a randomization list (i.e., all participants in a nursing home were either in the experimental group or control group). The randomization list was kept in an opaque sealed envelope and held by a person who was independent of the trial. The two nursing homes that participated in this study were run by the same elderly care group. They can be considered comparable settings, as the organization, management, and service provided were similar. Inclusion criteria were older adults aged ≥ 60 years, who scored ≥ 6 in the Abbreviated Mental Test [18], had been experiencing nonmalignant physical pain either continuously or intermittently for more than 3 months, and were able to understand Cantonese. Exclusion criteria were those with cognitive impairment and a history of mental disorders, and those with cancer and currently in cancer treatment. Those suffering from conditions that limited safe participation were excluded, as this program involved physical activities. These included individuals who had suffered from a fracture or undergone surgery in the past 2 months, and those with severe chronic obstructive pulmonary disease, acute stroke, or acute myocardial infarction.

Nursing home residents underwent screening. Those who were eligible to participate in the study were assigned to either the experimental group or control group. Clustered randomization was used so that all participants in a nursing home were either in the experimental group or control group to prevent potential communication between participants of the intervention and control groups (information flow). The randomization list was kept in an opaque sealed envelope and held by a person who was independent of the trial.

Experimental Group—Peer-Led PAP

A 12-week group-based peer-led PAP was given to the experimental group participants during weeks 1 to 12. Each session involved a small group of six participants. Each PV was responsible for guiding and providing assistance to two to three participants each time. There were a total of 24 sessions, with two 1-hour sessions each week. Table 1 shows the details of the program. Briefly, each session was composed of three components: physical exercise, interactive teaching, and sharing of pain management education and portfolio entry. All teaching components were provided in the "I can do it" booklet, which was developed and validated by physicians in pain management and geriatric care and a physiotherapist. The session started with physical exercises (20 minutes), including towel dancing; exercises on correct body posture and alignment; and the stretching of arms, legs, and body muscles. The second part of the session was the pain management education or revision (30 minutes), which included information on pain situations, the effects and impacts of pain on older adults, and the use of drugs and nondrug strategies in pain management. The use of nondrug therapies included viewing photographs of the natural environment, listening to music, and participating in multisensory stimulation arts and crafts activities. At the end of each session, portfolio entries on the knowledge and activities of the day were made to help the participants recall the various pain relief methods learned in class. Session 1 was led by the research team with PVs as observers, and session 2 of the same week was led by the PVs only without the presence of the research team.

Control Group—PAP

A weekly 1-hour session of PAP was solely delivered by the research team over 12 weeks. The content of the session was the same as the experimental group. No PVs were involved in the control group.

Treatment Fidelity

To ensure adherence and compliance with the content and process of the protocol, regular meetings were held among the research team, peer volunteers, and nursing home staff. Ongoing supervision, monitoring, support, and encouragement of peer volunteers were given in the regular PV group meeting. Onsite visits in the nursing homes were provided to give feedback and coaching. The peer volunteers were encouraged to contact the research team for prompt support when necessary.

Data Collection

The following data were collected from the participants for both groups at baseline (P1): demographic data (including age, gender, level of education, marital status, and frailty status), pain intensity, pain self-efficacy, ADL, loneliness level, and happiness level. Outcome measures were collected again at week 12 on the completion of the intervention (P2). The peer volunteers were asked to complete a questionnaire at two time points, i.e., before the training (V1) and at week 12 (V2).

The Numeric Rating Scale (NRS) was used to measure pain intensity using an 11-point scale. The NRS is a line marked in equal segments from 0 (no pain) to 10 (worst possible pain). The NRS has been shown to be a

Table 1 Details of the pain management program (PAP)

		Experimental group	Control group
	Frequency	Two 1-hour sessions per week	One 1-hour session per week
	Facilitator	First session: research team Second session: peer volunteers	First session: research team
	Content	Content of the PAP was the same for both groups	
Week	**Physical exercise** (20 minutes)	**Interactive teaching and sharing of pain management education** (30 minutes)	**Portfolio entry** (10 minutes)
1	Correct body posture and alignment; stretching of arms, legs, and body muscles; balancing exercise;	Pain situations among themselvesEffects of pain in their daily lifeCan we do something?	Research team and/or peer volunteers worked with the participants to make entries on the activity of the day in the "I can do it" booklet.
2	shoulder and neck exercise; hip exercise; knee exercise;	The use of an oral drug; effects and side-effects	
3	towel dancing	The use of a nondrug therapy: hot pad and cold pad; how to use and safety issues	
4, 5		The use of a nondrug therapy: listening to music	
6, 7		The use of a nondrug therapy: massage	
8, 9		The use of a nondrug therapy: visual stimulation, watching the natural environment, and making a photo album	
10, 11		The use of a nondrug therapy: sense of smell and taste—making a bag of dried flowers and tasting tea	
12		Revision and wrapping up	

reliable and valid measure of pain intensity and pain distress in older patients with persistent pain [19].

The Chinese version of the Pain Self-Efficacy Questionnaire (PSEQ-HK) was used to assess the participants' confidence in their ability to perform specific tasks or their confidence in performing more generalized constructs such as coping with chronic nonmalignant pain. It is a 10-item self-report inventory. Each item is scored on a 7-point Likert scale (ranging from 0, "not at all confident" to 6, "completely confident"), with a higher total score indicating stronger self-efficacy beliefs. It is a reliable assessment tool with satisfactory psychometric properties [20].

The Modified Barthel Index (MBI) was used to measure performance in activities of daily living, testing 10 items such as feeding, grooming, toileting, ambulation, and bathing. The score varies from item to item and the maximum total score is 100, indicating total independence [21]. The interrater reliability is greater than 0.95, and the test-retest reliability is 0.89 [22]. The Chinese version has already been validated and has been shown to be reliable for use with older adults with stroke [23].

Loneliness level was measured using the Chinese version of the Loneliness Scale [24]. The scale consists of 20 items to assess the participants' perception of loneliness and social isolation using a 4-point Likert scale (1 = never, 2 = seldom, 3 = sometimes, 4 = always). The total possible scores range from 20 to 80, with higher scores indicating greater loneliness. The Chinese version with a Cronbach's alpha was used.

The level of subjective happiness was assessed using the Chinese version of the subjective happiness scale [25]. The scale consists of four items rated on a 7-point Likert scale. The total scores range from 4 to 28, with higher scores indicating higher subjective happiness. The Cronbach's alpha is 0.82, and the 2-week test-retest reliability was 0.70.

A questionnaire containing closed-ended questions was completed by the peer volunteers. The peer volunteers

were asked to rate their confidence in implementing the pain education program (Likert scale from 10 [the most confident] through 1 [the least confident]) and their level of pain management knowledge (Likert scale from 10 [the most adequate] through 1 [the least adequate]).

Data Analysis

All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS). A descriptive statistical analysis of the quantitative data was carried out. The Kolmogorov-Smirnov normality test was used to examine the normality of the outcome variables. To examine the effects of the intervention, t-tests were used to compare outcome measures collected at two time points (i.e., P1 and P2) because the data followed a normal distribution. The questionnaires for the volunteers collected at two time points (i.e., V1 and V2) were compared using a pair sample t-test. A score of $p < 0.05$ was considered statistically significant.

Results

Demographic Data

Figure 1 shows a flow diagram of subject recruitment. Table 2 shows the demographics of the nursing home residents. Fifty nursing home residents participated in the study. There were no significant differences in demographic data between the two groups. Most were female and over 80 years old. Over 50% of the nursing home residents were widowed and had received no formal education. Almost 75% of them had suffered from chronic pain over the last 12 months. Meanwhile, 12 PVs completed the training and led in the program. Most of the PVs were female, and about 50% of them were below 60 years old. Over 75% of the PVs were married and had received a secondary level of education or above. Nearly half of the PVs had experienced chronic pain in the past 12 months, and over 90% of the PVs had participated in volunteer service in the past.

Changes in Pain, Pain Self-Efficacy, Physical and Psychological Parameters of Nursing Home Residents

Table 3 shows the changes in the outcome measures of the nursing home residents for both groups after they completed the pain management program. Both groups experienced a significant reduction in pain intensity from 5.8 ± 2.6 at baseline to 3.4 ± 2.5 after completing the intervention for the experimental group ($p = 0.003$) and from 6.3 ± 3.0 to 3.1 ± 2.4 for the control group ($p = 0.001$). Although not statistically significant, pain

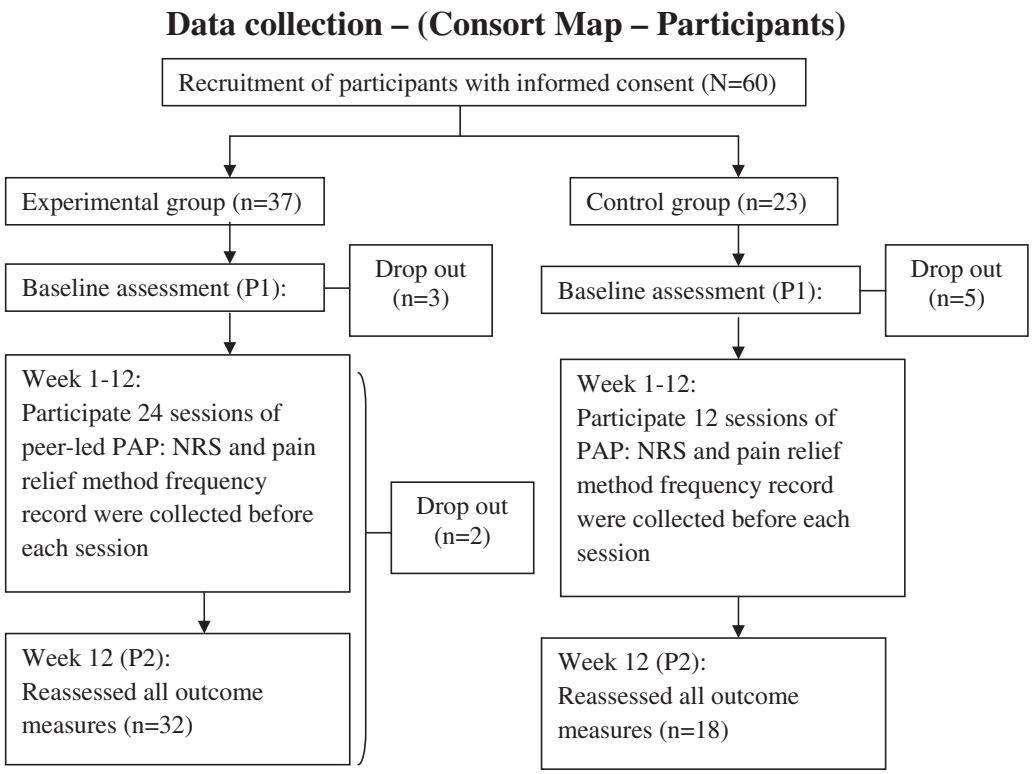

Figure 1 Flowchart of subject recruitment.

Table 2 Demographic data of the nursing home residents

	Total (n = 50)	Experimental group (n = 32) N (%)	Control group (n = 18)	P
Gender				
Male	9 (18.0)	7 (21.9)	2 (11.1)	0.342
Female	41 (82.0)	25 (78.1)	16 (88.9)	
Age group (years)				
60–69	3 (6.3)	2 (6.5)	1 (5.9)	0.954
70–79	12 (25.0)	7 (22.6)	5 (29.4)	
80–89	17 (35.4)	11 (35.5)	6 (35.3)	
90–99	16 (33.3)	11 (35.5)	5 (29.4)	
Marital status				
Married	23 (47.9)	13 (41.9)	10 (58.8)	0.447
Widowed	24 (50.0)	17 (54.8)	7 (41.2)	
Divorced	1 (2.1)	1 (3.2)	0 (0.0)	
Education level				
No formal education	27 (55.1)	17 (53.1)	10 (58.8)	0.770
Primary education	16 (32.7)	10 (31.3)	6 (35.3)	
Secondary education	5 (10.2)	4 (12.5)	1 (5.9)	
University education	1 (2.0)	1 (3.1)	0 (0.0)	
Chronic pain in the past 12 months				0.830
Yes	37 (74.0)	24 (75.0)	13 (72.2)	
No	13 (26.0)	8 (25.0)	5 (27.8)	
Frailty Status (frailty score)				0.575
Frailty (3-5)	13 (26.0)	8 (25.0)	5 (27.8)	
Pre-frailty (1-2)	31 (62.0)	19 (59.4)	12 (66.7)	
Normal (0)	6 (12.0)	5 (15.6)	1 (5.6)	

Table 3 Physical and psychological parameters of nursing home residents (n = 50)

	Experimental group (n = 32)			Control group (n = 18)				
	Baseline (P1)	Week 12 (P2)	P^1	Baseline (P1)	Week 12 (P2)	P^1	P^2	P^3
Pain self-efficacy	30.0 ± 16.1	36.1 ± 14.6	0.174	36.0 ± 15.4	44.1 ± 13.7	0.202	0.320	0.097
Pain score	5.8 ± 2.6	3.4 ± 2.5	0.003	6.3 ± 3.0	3.1 ± 2.4	0.001	0.442	0.813
Modified Barthel index	64.3 ± 36.8	68.1 ± 36.6	0.008	65.6 ± 30.9	71.1 ± 31.5	0.014	0.320	0.097
Happiness level	16.8 ± 5.3	20.6 ± 4.4	< 0.001	18.7 ± 5.7	18.5 ± 5.5	0.142	0.566	0.142
Loneliness level	44.5 ± 8.7	34.3 ± 8.3	< 0.001	42.8 ± 10.5	38.9 ± 9.8	0.031	0.534	0.083

[1]Within group comparison (baseline vs week 12).
[2]Between group comparisons at baseline.
[3]Between group comparisons at week 12.

self-efficacy increased in an expected direction, from 30.0 ± 16.1 at baseline to 36.1 ± 14.6 at week 12 for the experimental group ($p > 0.05$) and from 36.0 ± 15.4 to 44.1 ± 13.7 for the control group ($p > 0.05$), showing that participants had more confidence in managing their pain.

There was also an improvement in the physical parameters of the participants from both groups after they completed the pain management program. The ADL improved significantly from 64.3 ± 36.8 to 68.1 ± 36.6 as measured by the MBI for the experimental group ($p = 0.008$) and from 65.6 ± 30.9 to 71.1 ± 31.5 for the control group ($p = 0.014$). In terms of psychological parameters, the happiness level grew from 16.8 ± 5.3 to 20.6 ± 4.4 post-intervention (P2) compared with the baseline (P1) for the experimental group ($p < 0.001$), while there was no statistically significant difference found in the control group. Loneliness level dropped significantly from 44.5 ± 8.7 to 34.3 ± 8.3 for the

Table 4 Evaluation of volunteer experience

	Before training (V1)	Week 12 (V2)	P
Knowledge of pain management[1]	2.9 ± 2.6	8.1 ± 1.2	< 0.001
Confidence in volunteer service[2]	5.8 ± 2.9	8.3 ± 1.5	0.032

[1]Using a 10-point Likert scale to rate, with 1 = the least adequate, 10 = the most adequate.
[2]Using a 10-point Likert scale to rate, with 1 = the least confident, 10 = the most confident.

experimental group ($p < 0.001$) and from 42.8 ± 10.5 to 38.9 ± 9.8 for the control group ($p = 0.031$). There were no significant differences in outcome measures between the two groups at both baseline and at week 12 ($p > 0.05$).

Evaluation of the Volunteer Experience

Peer volunteers also benefited from the peer-led PAP. They were asked to rate their knowledge of pain management and self-efficacy in carrying out the volunteer service (Table 4). It was found that their perceived knowledge of pain management increased significantly from 2.9 ± 2.6 before the training (V1) to 8.1 ± 1.2 upon the completion of the program (V2; $p < 0.001$). Their confidence in carrying out the volunteer service also increased significantly, from 5.8 ± 2.9 (V1) to 8.3 ± 1.5 (V2; $p = 0.032$).

Discussion

The present study demonstrated that a pain management program significantly reduced pain intensity, enhanced ADL, and improved loneliness levels among nursing home residents, regardless of whether the program was led solely by health care professional staff or with the use of peer volunteers. The peer-led pain management program also showed potential to improve happiness levels among older adults living in a nursing home, while there was no significant change in happiness level among control group participants. The study generated evidence to support the feasibility of peer volunteers, and the results add to the growing body of evidence supporting the feasibility of peer volunteers in pain education programs [14–17,26,27].

In a literature review, four barriers to the self-management of chronic pain have been identified [28], namely, treatment (a belief that pain-relief strategies are ineffective), personal (challenges to controlling pain due to disability, a lack of self-efficacy, and limited resources), mental health (the presence of depression, anxiety, and fear of pain), and social barriers (a lack of social support). Treatment and personal barriers are overcome by transferring knowledge to the participants in traditional pain education programs led by health care professionals. In this study, the addition of PVs helped to address the remaining barriers. PVs reinforced the pain management knowledge of nursing home residents, re-demonstrated nonpharmacological pain management strategies, praised the residents' accomplishments, shared personal experiences and developed social bonds with them, and persuaded them to adhere to treatment recommendations [29]. Our findings showed improvements in the pain levels and physical and psychological health of the participants, indicating the feasibility of using PVs.

Previous studies showed that the use of peers in pain education programs led to improvements in the pain situation of the participants and increased their pain self-efficacy [26] and functional capacity [15,27]. However, the content and duration of the intervention, the instruments for measuring outcome measures and, most importantly, the target population differed from those in this study. Therefore, this study is the first to investigate the feasibility of using peers in a pain education program for nursing home residents.

The current study also indicated that peer support has the potential to improve the psychological parameters of the participants. Having a chronic pain condition can be a lonely experience. A previous study demonstrated that even those participants who described themselves as possessing strong social networks reported feeling isolated and lacking in support for dealing with their pain conditions [27]. General social support does not necessarily ensure the receipt of effective pain-specific support, which may be difficult for the family to provide, as they lack the coping resources required to support a person in pain. Therefore, peer volunteers with similar experiences may provide pain-specific support and emotional support, resulting in improvement in loneliness and happiness levels among nursing home residents with chronic pain. The positive outcomes of this pilot study provide evidence of this. However, it should be noted that the effects of peers on psychological parameters were examined over a short-term follow up; whether the same effects can be sustained for the longer term when peer support is no longer provided is unknown. In addition, experimental group participants received added attention, as a total of two sessions were offered compared with only one session given to the control group participants. Therefore, these psychological parameters may have improved when the nursing home residents participated in more social activities rather than because of the use of peer volunteers. Whether the findings can be attributed to the use of

peer volunteers or greater attention are not well known, and further study with a strengthened study design is required.

Although not investigated in our pilot study, another frequently mentioned advantage of the peer education model is that it is a cost-effective way of delivering an intervention, especially to those who may be unable to afford professional fees [30]. Given that the global population is aging and the demand for health services is increasing, using older volunteers is considered an alternative model of delivering services, particularly where health systems are underfunded [13]. The current study showed that pain management programs led by both a research team and peer volunteers also improved the pain situations and physical and psychological parameters of participants in a similar direction as the program led solely by the research team. Therefore, it is worth studying if the program led solely by peer volunteers would be as effective as one led by health care professionals in a larger sample. Future study should also compare the cost between PV-led and research team–led pain education programs.

The benefits of using older volunteers are that they are not constrained by time and are a readily available, cost-effective labor resource [31]. However, it should also be noted that time and cost are involved in recruiting, training, and retaining peer volunteers. From our observation in this pilot study, recruiting and training peer volunteers are important. There are more than 1000 members in the IAA pool, and within 100 of them are active members. The research team spent about 1 month to recruit the PVs, and some eligible PVs who were not able to complete the two training sessions were excluded. The research team had provided two sessions of training to PVs, with demonstration and re-demonstration on the skills and knowledge in leading the PAP. The cost to develop educational materials was about HK$100 per session, and HK$20 per person was required for the travelling. The cost and time of training those PVs would be worthwhile when they could be empowered and continue to contribute to society via participation in the PAP. It should be emphasized that regular meetings with nursing staff are important to ensure adherence and compliance with the content and process of the protocol; therefore no conflict has been observed in this pilot study. In addition, all the peer volunteers who were involved in this pilot study agreed to assist in the future, indicating that the retention rate is high and the trained peers can be used again in future pain education programs. Therefore, drawing on them to help older adults with chronic pain will help to reduce health care expenditures.

One of the limitations of this study was the exclusive reliance on self-reports for the quantitative data that were collected. However, it was assumed that people would be as honest as possible to the extent that they were aware of their own thoughts, feelings, and functional abilities at the time of the collection of the data. Our subjects were also mentally intact and oriented as to time and place. It was recognized that some patients with chronic pain may either exaggerate or minimize their reports of pain. Nonetheless, it was assumed that these reporting patterns would be consistent over time. Given that the primary focus of this study was to document changes over time, it was determined that the benefits of self-reported questionnaires provided adequate justification for their use [32]. In addition, data were collected by individuals who were not responsible for the intervention. Therefore, reporting biases were minimized, as the subjects did not necessarily report positive answers to please the researchers. Secondly, no measure of residents' pain knowledge was included at baseline and post-intervention. Therefore, whether reduction in pain intensity was due to the addition of PVs or pain knowledge of residents per se is not well known. Another limitation of this study is that it was a pilot study with a relatively small sample size, and therefore was underpowered to determine effectiveness. The sample was limited to two nursing homes, which limits the generalizability of the study's findings. Moreover, the findings may be due to the fact that participants from the experimental group received greater attention than the control group participants rather than the inclusion of peer support. However, this study has demonstrated the feasibility of recruiting and retaining peer volunteers and older adults for a peer-support intervention for nursing home residents with chronic pain. Future study with a strengthened study design (i.e., the same intervention duration for both groups, with one session led by PVs for the experimental group and one session led by trained research assistants for the control group) will be required to consolidate the effectiveness of peer volunteers in pain education program.

Implications

Findings of this pilot study indicate that education on pain self-management is essential. Although nursing staff and other health care professionals are the major sources of pain knowledge in nursing homes, studies have found that their pain knowledge is not adequate [33]. In addition, pain is a common problem in elderly persons, especially those in nursing homes [33]. Due to the limited health care resources and budgets, training of laypersons provides an opportunity for them to transfer pain self-management knowledge to nursing home residents. In the future, there is potential for the government to set up an accreditation scheme to enhance the ability of well-trained peer volunteers to contribute to pain management education for nursing home residents.

Conclusion

Chronic pain is prevalent among older adults. This pilot study supports the feasibility of using peer volunteers in pain education programs for older adults. We believe that peer support may be beneficial for older adults, and there is a trend to incorporate peer support into elderly

care. Therefore, future research involving a larger sample and a randomized controlled design is warranted to shed more light on the effectiveness of using peer volunteers for managing chronic pain among nursing home residents.

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