

A Mixed-Methods Study for Evaluating the Effect of a Cultural and Contextual-Specific Exercise Program on Therapeutic Exercise Adherence of Older People with Knee Osteoarthritis

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Introduction

Knee osteoarthritis (KOA)

- Common health problem in the older population
- Exercise is the first-line clinical management with evidence support for its effectiveness
- Exercise adherence is an issue affecting exercise effectiveness
- Client-centred approach may improve exercise adherence



Introduction (cont'd)

- A cultural and contextual-specific exercise program was developed
 - * For older people with KOA in Hong Kong
- With reference to
- Findings from a qualitative findings
 - Previous literature on exercise interventions
 - Advice from a multidisciplinary expert panel
- * To promote adherence to therapeutic exercise



The Aim of the Study

- To evaluate the effectiveness of a cultural and contextual-specific exercise program in promoting therapeutic exercise adherence among older people with KOA.



The Study Objectives

1. To evaluate the participants' exercise adherence.
2. To evaluate the participants' level of mastering of the recommended exercise movements.
3. To assess the participants' satisfaction with the exercise program.



The Study Objectives (cont'd)

4. To explore the participants' perceptions towards the design and content of the exercise program.
5. To explore the participants' experiences of practicing and integrating the exercise in daily living.



Study Design

- A mixed-methods design
 - A single group quantitative study
 - Exercise adherence
 - Level of mastering of the exercise
 - Satisfaction with the exercise programme

Followed by

- An exploratory qualitative study
 - Views about the exercise programme
 - Experiencing of practicing and integrating the exercise in daily living



Participants

- Setting:
 - A community center for older people in HK
- Inclusion criteria:
 - Were aged 60 years or above
 - Fulfilled the American College of Rheumatology's clinical criteria for the classification of KOA
 - Had unilateral/bilateral KOA
 - Spoke Cantonese
 - Were living at home



Participants (cont'd)

- Exclusion criteria:
 - Participation in other exercise program provided by healthcare professionals on a regular basis
 - Treatment with intra-articular steroid or hyaluronate injection in the previous month
 - Concurrent acupuncture treatment
 - The presence of hip osteoarthritis, rheumatoid arthritis, or other inflammatory joint disease
 - A history of total knee replacement surgery on the osteoarthritic knee
 - A history of surgical procedures on the lower extremity in the previous six months
 - The presence of comorbidity which contraindicated the exercise program



Participants (cont'd)

- Sampling method and sample size:
 - Quantitative study
 - Convenience sampling
 - 30 + 10% attrition = 34
 - Qualitative study
 - Purposive sampling
 - 20% of participants who have completed the quantitative study = 6



Intervention

- A Cultural and Contextual-Specific exercise program developed by the researchers
 - Content:
 - A general introduction to KOA and its treatment options
 - Types of exercise and the benefits for older people with KOA
 - General guidelines about exercise for older people with KOA
 - An exercise regimen which consisted of seven exercise movements



Intervention (cont'd)

– Health education strategies:

- Lectures using Powerpoint slides and posters for presentation
- Demonstration, practice, return-demonstration, and feedback
- Group sharing sessions
- Supplementary materials in the format of pamphlets and poste
- Homework by means of exercise diary
- Revision sessions



Intervention (cont'd)

– Class details

- 4 parallel exercise classes on Tue (AM & PM) and Fri (AM & PM)
- Once a week for 4 weeks
- 8-10 participants in a class
- Conducted in a room in the community center
- Delivered by the principal researcher and the full-time research assistant (RA)



Study Tools

- An exercise diary
 - Exercise adherence
- A skill assessment checklist
 - Level of mastering of the recommended exercise movements
- A satisfaction questionnaire
 - Satisfaction with the exercise program
- Semi-structured interview guide
 - Views about the exercise program
 - Experience of practicing and integrating the exercise in daily living



Data Collection

- On completion of the exercise program
 - filling out the satisfaction questionnaire
 - individual face-to-face interview
 - at the community center
 - by part-time RAs



Data Collection (cont'd)

- At 12 weeks after the exercise program
 - return the completed exercise diary
 - Demonstrate the level of skills in mastering the recommended exercise movements
 - individual return-demonstration session
 - at the community center
 - by the full-time RA



Data Collection (cont'd)

- After the individual return-demonstration session
 - six participants participated in an individual face-to-face audio-recorded interviews
 - in a private room in the community center
 - by a part-time RA who are experienced in qualitative interviews



Results - the quantitative study

Final sample

- 34 older people with KOA recruited
- one participant dropped out
- 33 participants completed
- Characteristics
 - 28 female & 5 male participants
 - Age ranged 61-92 yrs. (mean = 75.03 yrs.; SD = 7.26)
 - Marital status: 17 married, 15 widowed, 1 divorced
 - Educational level: only 3 beyond primary school
 - Duration of KOA symptoms: ranged 2 months – 30 yrs. (mean = 8.97 yrs.; SD = 7.11)
 - 17 bilateral KOA & 16 unilateral KOA



Results - the quantitative study (cont'd)

- The participants were highly adhered to the recommended exercise regimen
 - Mean percentage = 91.04% (SD = 14.54)



Results - the quantitative study (cont'd)

- The participants' overall performance in mastering of the exercise movements was good
 - Mean score = 76.71/100 (SD = 21.75)



Results - the quantitative study (cont'd)

- The participants' also demonstrated a high level of satisfaction with the exercise program
 - Mean score = 90.15/100 (SD = 8.05)



Findings - the qualitative study

- Four major categories
 - Satisfaction with the exercise program

*“I understand the content of the course very well...
It’s suitable because it’s simple... I think the
content is just right.”*

Informant 4



Findings - the qualitative study (cont'd)

– Mastering of the exercise movements

“We learnt to master it ... If we did it incorrectly, she would teach us so that we’re able to do it correctly”

Informant 3



Findings - the qualitative study (cont'd)

– Experience of the exercise's effects

“...after doing the exercise, my knees have become more flexible and there's no more pain. Walking is more convenient, and I don't need to use an umbrella as a walking aid”

Informant 1



Findings - the qualitative study (cont'd)

- Integration of the exercises into the daily routine

“I do the exercises when I’m watching TV ... That’s more meaningful than just sitting there and watching TV ... I practice the seven movements in one go.”

Informant 4



Discussion

- The quantitative and qualitative findings of this study were consistent and complementary, showing that
 - the exercise program was well accepted by the older Chinese people with KOA in terms of
 - Satisfaction with the exercise program
 - Adherence to the exercise regimen
 - Mastering of the exercise movements



Discussion (cont'd)

- However, the 12 weeks follow up period in this study has limitations to the understanding of the long-term effect of the exercise program.
- Future studies should consider a longer follow up period such as 5 years.



Implication

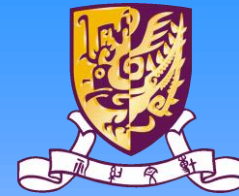
- Need to take into consideration of clients' cultural and contextual environment in the development of exercise program
 - In order to promote clients' adherence to the therapeutic exercise regimen



Conclusion

- Exercise adherence is fundamental for effective exercise intervention
- The findings of this study support the use of client-centered approach in development of exercise intervention
- Client-centered approach should be considered a way forward in order to promote exercise adherence among clients with chronic diseases.





~ Thank You ~

