

**Finding the Effectiveness of an Occupation-Based Community Group for Adults with
Arthritis: The Denton Senior Center Arthritis Activity Group**

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OT6923: Doctoral Capstone Project

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April 28th, 2024

The Denton Senior Center Arthritis Activity Group

Arthritis is a chronic disease of the joints that is the cause of disability for millions of Americans and those across the globe. It imposes functional challenges and hinders individuals from living as they desire. According to the Centers for Disease Control and Prevention (2021), one in four (58.5 million) American adults are diagnosed with arthritis. This project was developed to help a diverse population of older adults with many forms of arthritis, including inflammatory and autoimmune types. The Denton Senior Center (DSC) Arthritis Activity Group aimed to improve self-management of arthritis symptoms in older adults. The capstone project was designed and implemented by investigating the current literature and a needs assessment. To begin the capstone experience, a needs assessment was conducted for The Denton Senior Center, revealing that many members were challenged with managing their arthritis symptoms. This led to the creation of an arthritis program to help educate and guide self-management techniques.

To ensure evidence-based practice, a literature review was completed, which revealed that arthritis is treated through resistive exercises, joint protection, thermal modalities, and orthoses (Beasley et al., 2017). Many programs included resistive exercises (Lourenzi et al., 2017), group activities such as knitting (Leonard et al., 2021), and non-pharmaceutical interventions for adults with arthritis (Cramp et al., 2013). One community program was featured in the review that integrated health education and exercise for adults with knee osteoarthritis (OA) (Oh et al., (2020). This demonstrated a lack of community programs yielded in the literature search. This review revealed a lack of evidence in programs that included both rheumatoid arthritis and osteoarthritis in their participants. Additionally, none of the programs in the literature were conducive to both upper-extremity and lower-extremity arthritis. The DSC Arthritis Activity Group allowed participants with any type of arthritis in any location to join the

group to fill this need. The project posed the PIO question “Can implementing an occupation-based community program improve occupational participation in people with both diagnoses of osteoarthritis and rheumatoid arthritis?”

Program Development

As a part of the capstone process, students must choose specific skills, focus areas, and populations they want to work with and develop in-depth knowledge on. There are eight focus areas: clinical skills, program or policy development, research, leadership/advocacy, administration, and education (DeJuliis & Bednarski, 2020). Program development was selected as the focus area for the DSC Arthritis Activity Group. Program development is a systematic process of identifying the needs of a specific population, group, or organization and creating evidence-based programs to meet those needs (CDC, 2013, as cited in DeJuliis & Bednarski, 2020). Program development was chosen with the Denton Senior Center in mind as it houses and operates many community programs and is well-equipped to partner with this project. The senior center offers many health promotion programs to its members, and the advisory council voiced a need for an arthritis program. By identifying this need at the Denton Senior Center, the chosen topic for the capstone project was arthritis management. This focus area and topic of interest coincide with the selected agency, The Denton Senior Center, due to the nature of a city recreation entity and its available programs, along with the specific population of the center. As we age, we may be at risk for degenerative diseases like arthritis, and this program aimed to help the senior center’s population manage its symptoms.

Processes

Plan and Processes

For the Denton Senior Center Arthritis Activity Group, the identified gaps in the research consisted of a need for universal programs, psychosocial components in interventions, and occupation-based interventions (Seigel et al., 2019). This guided the development of the capstone project's goals/objectives, deliverables, and outcomes. Additionally, these goals/objectives and deliverables were curated explicitly with the DSC arthritis population in mind. Through collaboration with the agency mentor, the population's specific needs were identified and incorporated throughout the preparation phase of the program. A program plan was produced with the agency mentor that mapped out how a program is typically created for the city entity. This allowed the agency mentor to explain expectations and policies regarding program development for the Denton Senior Center.

Table 1.

Objectives & Deliverables

Goal	Objective	Deliverables
Performance Goal	<i>Objective #1:</i> By the end of week 3, I will have held two group meetings orienting the participants to the program and determining three or more non-exercise, occupation-based activities to perform during the 14-week program.	<ul style="list-style-type: none"> ● Disease-specific resources for participants ● Rapport and sense of community among participants and myself. ● Program resources and overview sheets for participants. ● Two activity sessions ● Data regarding Q-DASH, FAAM, WOMAC, PSFS, and desired activities survey.
Performance Goal	<i>Objective #2:</i> By the end of week 12, all participants will demonstrate an understanding of at least two techniques through teach-back methods.	<ul style="list-style-type: none"> ● Participants will demonstrate an understanding of pain management techniques through teach-back. ● Individualized home exercise programs ● Resources on pain management techniques. ● Participants will increase or gain knowledge and skills on exercise movements and benefits. ● Group exercise classes

Professional Reasoning Goal	<i>Objective #1:</i> By week 6, I will have educated participants through group sessions on one evidence-based pain management technique and one evidence-based occupation-based activity.	<ul style="list-style-type: none"> ● I will have a better understanding of evidence-based pain management techniques. ● I will gain knowledge on evidence-based and occupation-based interventions.
Professional Reasoning Goal	<i>Objective #2:</i> By the end of the 12 th week, I will determine the two most used pain-management techniques reported by the participants on their home activity log.	<ul style="list-style-type: none"> ● Activity log ● Increased knowledge of pain management techniques ● Increased knowledge of occupation-based activities effective in treating arthritis
Experience Goal	<i>Objective #1:</i> By the end of week 6, I will be self-sufficient in managing the activity group with minimal assistance from the center manager.	<ul style="list-style-type: none"> ● Program information, handouts, and arthritis resources. ● Resources on program development and continuation (if desired).
Experience Goal	<i>Objective #2:</i> By the end of week 10, I will have completed the program manual with resources for the Denton Senior Center.	<ul style="list-style-type: none"> ● Program Manual

Mentorship

I received mentorship from a faculty member and the Denton Senior Center throughout the capstone process, which was a key component to making this project successful. For this project, a faculty member, Dr. Camille Ko, OTR, OTD, CBIS, LSVT-BIG, an assistant clinical professor, provided mentorship once every other week, which allowed for collaboration on the overall process. The agency mentor, Nicole Brasher, CPRP, provided check-ins once weekly, during which more specific project details were discussed. Brasher is a certified parks and recreation professional (CPRP) and is the recreation supervisor of the Denton Senior Center. Another critical component in achieving relative mastery of arthritis treatment was the knowledge gained through the fieldwork experience. The knowledge offered by the clinical

instructor, Michelle Tanner, OT, MOT, CHT, COMT, and gained through hands-on experiences, specifically with orthopedic hand therapy, guided the project components and allowed me to understand best practices for arthritis management.

Implementation Strategies

Phase I: Preparation

The preparation phase included a needs assessment, a literature review, and a memorandum of understanding agreement. Along with these specific assignments, building a relationship with my agency and producing promotional materials was imperative. The needs assessment informed my decision to create an arthritis program for seniors. Once the agency, topic area, and focus area were identified, a literature review was conducted to determine how to create a program that would fill the gap in the literature and meet the specific needs of the Denton Senior Center population. A proposal was created that became available to all stakeholders and gave an overview of the capstone project.

For the DSC Arthritis Activity Group, I used outcome measures like the Quick-DASH (disabilities of arm, shoulder, hand - shortened version) (Hudak et al., 1996), The Western Ontario and McMaster Universities Arthritis Index (WOMAC) (Bellamy et al., 1988), the Foot and Ankle Ability Measure (FAAM) (Martin et al., 2005), the Patient-Specific Functional Scale (PSFS) (Stratford et al., 1995), and the Visual Analog Pain Scale (VAS) (Yeung et al., 2019). Some other surveys included a member satisfaction survey, an activity preferences survey, and an introductory demographic/arthritis information survey. These outcomes were established to test the program's effectiveness for the program evaluation phase. I was ready to start the implementation phase once the agreement was established and signed by all involved stakeholders.

Phase II: Implementation

The implementation phase is where all the components of the preparation phase were put into action. This phase has three significant steps: class content creation, managing materials, and holding the education and activity group. For the DSC Arthritis Activity Group, the implementation phase started with creating flyers and promotional materials to begin recruiting members for the group. Once this was in motion, the surveys were created and sent out to any members who had started registering for the class. Before the first day of class/group, my primary role was to create content materials, continue prepping surveys for participants, and collaborate with DSC employees on materials and spaces. Once the program began, one-hour classes were held once weekly on various arthritis-related topics, with exercise and activity incorporated into that time. Exercise components included strengthening, chair yoga, chair Pilates, and practicing home exercise programs. Participants completed paper and material crafts with psychosocial components and engaged in competitive trivia games. For example, the group made breathing beads, which can work as a calming/grounding tool when an individual is stressed, as they promote deep breathing. Additionally, topics like energy conservation, joint protection, adaptive equipment, sleep hygiene, diet, and fall prevention were all presented to the class. The program spanned over nine weeks, allowing two weeks before the group started to prepare and three weeks after to analyze and prepare for dissemination.

Phase III: Program Evaluation

During the program evaluation phase, there were three significant components. First, I analyzed data, comparing pre- and post-program outcome measures to test the program's effectiveness. This included inputting data into Google Forms to create tables and graphs representing each participant's data. Overall themes were identified through the nine surveys

gathering data on functional performance and progress. Once the data was analyzed, inputted, and synthesized, it was used to understand the program's effectiveness. This data informed the project's findings in determining if the program was effective in helping seniors manage their arthritis symptoms. During the evaluation phase, a program manual was developed for program continuation and included resources, education content, program schedule, and surveys.

Dissemination of the capstone project is required to discuss the overall project and its findings.

The dissemination plan includes a video presentation, a live poster presentation, and this scholarly paper made available to the public.

Guiding Theory

This project is guided by the theory of occupational adaptation, which describes how humans adapt to change as it relates to this population in restoring their ability to participate in desired occupations. This theory was created by Schkade and Shultz (1992), and it focuses on how individuals perform in the face of disability, environmental change, or other occupational challenges. The theory describes three components of adaptation: occupational readiness, occupational activities, and adaptive capacity. Occupational readiness describes an individual's physical, social, and psychological readiness to perform occupations. Occupational activity is the actual engagement in desired activities/occupations. The adaptive capacity of an individual is described as the capability to adapt tasks to changing environments and performance patterns to meet the task's demands. A key component of occupational adaptation is the press for mastery, which explains that individuals have an innate desire to achieve relative mastery in their desired occupations. This means that when individuals face challenges, the adaptive response will trigger in an attempt to achieve mastery (Shultz and Schkade, 1992). This theory guided this capstone

project due to the nature of arthritis and how it challenges individuals to perform their desired occupations. With arthritis being a chronic disease, adaptation is a significant component when treating its symptoms.

Outcomes

Results

The outcome measures for the DSC Arthritis Activity Group were completed in a pre-program and post-program design. These outcome measures were strictly used to evaluate the program's effectiveness and participant satisfaction. Nine outcome measures were used to gather information on participants' functional abilities, interests, basic arthritis information, and individual experiences with the program. The most significant outcome measures that tested overall program effectiveness were the Quick-DASH, the WOMAC, and the PSFS.

Supplemental surveys that tested participant satisfaction and helped shape the program were the activity preferences survey, the satisfaction survey, the demographic/arthritis information survey, and the activity log.

Quick-DASH

The Quick-DASH is an 11-question Likert-style survey tested in weeks one and nine to assess program effectiveness for people with arthritis in their arms, shoulders, or hands. Eight participants completed the survey in week one, and six completed the survey in week nine. Five of the six (83.3%) participants demonstrated decreased scores, meaning their functional capabilities had improved. With the Quick-DASH, a score of zero means no disability, and a score of 100 means the most severe disability (Rehabilitation Institute of Chicago, 2021).

WOMAC

The WOMAC is a 24-question, Likert-style survey that tests for hip and knee pain, stiffness, and function (Rehabilitation Institute of Chicago, 2016). It was tested in weeks one and nine to test program effectiveness for participants with arthritis in their hip and knee joints. Seven participants completed the survey in weeks one and nine, and five (71.4%) had decreased scores. Like the Quick-DASH, the WOMAC is interpreted as the lower the score, the less disability is present in the individual.

PSFS

The PSFS survey allows individuals to rate their perceived ability to complete self-reported activities on an 11-point scale. They were required to rate at least three activities, with the ability to rate more. Some of the activities rated by participants included walking, cleaning tasks, grocery shopping, gardening, working with tools, and exercising. The results were taken from three activities, which varied for each individual. Thirteen participants completed the PSFS in weeks one, five, and nine to gauge pre-, mid-, and post-program progress. Of the 13 participants, 84% improved their score by three or more points in at least one activity, demonstrating significant improvements.

Supplemental Surveys

As mentioned, six additional surveys supplemented the program to ensure participant satisfaction and shape it to best meet this specific group's needs. This included the FAAM, which was taken by two participants in week one and zero in week nine. Additionally, the demographic and basic arthritis information survey gave me relevant information about each participant to provide the proper extremity-specific surveys and home exercise programs. The desired activities survey informed me of participants' interests and hobbies, which helped ensure the program was relevant and enjoyable for the group. The activity log demonstrated participants' participation in

arthritis self-management techniques and completing their home exercise program. Lastly, the satisfaction survey was taken in week nine to allow participants to provide feedback and rate their overall satisfaction with the program.

Discussion

The relevant data was analyzed through the program evaluation phase to understand the overarching themes and findings. Additionally, the outcome measures worked in conjunction with other program components to answer the PIO question introduced previously, “Can implementing an occupation-based community program improve occupational participation in people with both diagnoses of osteoarthritis and rheumatoid arthritis?” The themes identified through data analysis were improved function, increased self-management participation, and participant satisfaction. To evaluate the program’s effectiveness, the outcome measures indicated that the program was effective in improving overall function in the affected extremities and increasing participation in self-management techniques. Additionally, they indicated that participants enjoyed the program and were satisfied with the resources provided, instruction, educational content, and activities performed. These outcomes were designed with continuation in mind and require minimal training to administer.

Impact and Future Implications

The Denton Senior Center can continue the program by partnering with the Occupational Therapy (OT) Department at Texas Woman’s University (TWU). The DSC Arthritis Activity Group demonstrated effectiveness, which benefits the DSC coordinator by having the ability to continue helping the arthritis community and offering an effective program. Additionally, this program positively impacts the arthritis community by offering a program that includes all types of arthritis in any extremity. This allows a wide variety of community entities to continue the

program if desired. The sustainability of the program was considered when designing resources, educational content, and the program manual. The program manual was created to allow for successful continuation of the DSC Arthritis Activity Group. The content is designed to be accessible and user-friendly for any healthcare professional to lead the program, and its versatility allows the program to be held anywhere. It is designed with seniors in mind; however, the program can be adapted to meet the needs of various populations.

Developing In-Depth Knowledge

During the capstone project's preparation, implementation, and evaluation phases, in-depth knowledge was developed about the chosen topic area, arthritis management. Additionally, the fieldwork experience contributed to developing the knowledge required to complete the capstone project. Specifically, pivotal moments that prompted the development of in-depth knowledge about arthritis management were completing the literature review, developing resources for program participants, and creating educational seminars for the program. These experiences highlighted the need for genuinely understanding the mechanisms of arthritis and how it impacts individuals. One way to ensure relative mastery is through the teach-back method, which required me to be thoroughly competent in the material I was teaching. Another critical moment included creating individualized home exercise programs that fit the capabilities of each individual. These moments developed my in-depth knowledge of arthritis management and will be crucial to my professional expertise.

Advancing Practice

As arthritis affects millions of Americans (CDC, 2021), as an occupational therapist, I will encounter patients who struggle to manage their arthritis symptoms across many settings. This knowledge is invaluable as it can help many people, and through the project, I have tangible

resources that can be used and shared throughout my career. As this project aimed to fill a gap in the literature, it focused on a program that can be used universally for various types of arthritis and in multiple extremities. This program is unlike many featured in the literature, as those programs often focus on one type of arthritis. This program encourages growth in occupational therapy by introducing the idea of providing services to recreational entities throughout cities. Through the partnership with the Denton Senior Center, a significant finding was that recreational centers can benefit from occupational therapy professionals to help develop and implement community health programs.

Conclusion

The Denton Senior Center Arthritis Activity Group program effectively helped the senior community manage their arthritis symptoms. The project was completed in three phases: preparation, implementation, and evaluation, and partnered with the Denton Senior Center for implementation. This program allowed for relative mastery in managing arthritis symptoms for the senior population through creating resources, teaching educational seminars on various arthritis-related topics, managing materials/spaces, and interacting with the senior center members. The program was successful and effective in helping participants improve functionality and participation in desired activities, self-management techniques, and exercise. This program positively impacts the field of occupational therapy (OT) by creating a space for occupational therapists to work in recreational entities. The relationship between occupational therapy and community recreation settings should be further investigated and pursued by OT professionals. During the capstone process, in-depth knowledge was developed, which provided an invaluable opportunity. The knowledge gained will carry over into my professional

experience. The project honed in on specialized skills that allowed me to continue my professional development and give back to my community.

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Appendix A

Goals

Performance Goal	Professional Reasoning Goal	Experience Goal
<p>By the end of the capstone experience, I will have increased my knowledge in working with the arthritis population (50+) by implementing a community, occupation-based program at the Denton Senior Center (DSC).</p>	<p>By the end of the capstone experience, I will integrate two evidence-based pain management techniques and two evidence-based, occupation-based activities that enhance the functional capacity of the members of the DSC arthritis group as measured by improvements in pre- and post-program patient-specific functional scale (PSFS) and VAS results.</p>	<p>By the end of the capstone experience, I will have gained knowledge and skills in managing materials, individuals, and public entities regarding a community-based group by conducting the group for nine weeks and working alongside center volunteers to support the program preparation and evaluation.</p>

Appendix B

Program Content Schedule

Week	Content
Week 1	Intro to Arthritis & Paperwork & Get to Know Each Other (paper craft)
Week 2	Intro to Exercise and Arthritis & Home Exercise Programs & Activity Log
Week 3	Pain Management Seminar & Craft: Make Breathing Beads
Week 4	Fall Prevention & Chair Yoga
Week 5	Joint Protection, Protective Bracing & Strengthening Exercises
Week 6	Energy Conservation Seminar & Chair Pilates
Week 7	Adaptive Equipment & Trivia
Week 8	Sleep Hygiene & Diet Seminar; Review Home Exercise Programs & Progress
Week 9	Post-testing; Q&A

Appendix C

Outcome Measures

Outcome Measure	Method	Purpose
Quick-DASH (Disabilities of Arm, Shoulder, and Hand - shortened version)	Pre-, post-program	To measure the functional abilities of those with arthritis in the upper extremity.
Western Ontario and McMaster Universities Arthritis Index (WOMAC)	Pre-, post-program	To measure the functional abilities of those with arthritis in the hip and knee.
Foot & Ankle Ability Measure (FAAM)	Pre-, post-program	To measure the functional abilities of those with arthritis in the foot and ankle.
Patient-Specific Functional Scale (PSFS)	Pre-, mid-, post-program	For participants to rate their functional abilities of self-reported desired activities.
Visual Analog Scale (VAS) Pain Scale	Pre-, mid-, post-program	To rate the pain the participants are experiencing.
Demographic/Arthritis Information Survey	Pre-program	To gather basic demographic information and general arthritis information of participants.
Activity Preferences Survey	Pre-program	To determine participants' interests and desired activities to shape the program content.
Satisfaction Survey	Post-program	To determine participants' satisfaction with program content, materials, and instruction.
Activity Log	Checked mid-, post-program	To track participation in arthritis self-management techniques and home exercise programs.