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AdaptedEX

COMMUNITY-BASED ADAPTED EXERCISE PROGRAM FOR ADOLESCENTS WITH
PHYSICAL DISABILITIES TO SUPPORT HEALTH MAINTENANCE

by

Grace Jeffers Mura

A Capstone Project Presented to the
FACULTY OF OCCUPATIONAL THERAPY
GEORGIA STATE UNIVERSITY

In Partial Fulfillment of the
Requirements for the Degree
OCCUPATIONAL THERAPY DOCTORATE (OTD)

April, 2024

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Grace Jeffers Mura

CAPSTONE FINAL PAPER APPROVAL FORM

DEPARTMENT OF OCCUPATIONAL THERAPY
Byrdine F. Lewis College of Nursing and Health Professions

Mailing Address
P.O. Box 3995
Atlanta, GA 30302-3995
Phone 404-413-1446
Fax 404-413-1450



CAPSTONE FINAL PAPER APPROVAL FORM

The Capstone Final Paper is the final product that the OTD students need to complete to report his/her Capstone Project and his/her Capstone Experience.

Student's Name	Grace Mura
Degree Sought	Occupational Therapy Doctorate (OTD)
Department	Occupational Therapy
Program	Occupational Therapy Doctorate (OTD)

We, the undersigned, recommend that the Capstone Final Paper completed by the student listed above, in part fulfillment of the degree requirements, be accepted by the Georgia State University.

Sutanuka Bhattacharjya
Faculty Mentor's Printed Name

Sutanuka Bhattacharjya
Faculty Mentor's Signature

04/25/2024

Date

Claudia Smith
Site Mentor's Printed Name

Claudia Smith
Site Mentor's Signature

4/25/2024
Site Mentor's Signature

April 22, 2024

Date

Carolyn R. Podolski
Capstone Coordinator's Printed Name

Carolyn Podolski
Capstone Coordinator's Signature

4/26/2024

Date

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Abstract

This capstone project describes an adapted exercise program for adolescents with physical disabilities to promote health management in adolescents with physical disabilities developed in partnership with the Robert D. Fowler YMCA. The adapted program is mainly geared toward adolescents with Cerebral Palsy (CP) and Duchenne Muscular Dystrophy (DMD) Three main objectives of this project included conducting a literature review, creating a program for Robert D. Fowler YMCA staff that included both education on CP and DMD and two adapted exercise modules for adolescents with physical disabilities, and participate in professional development of creating and facilitating a community group-based program. In the course of this capstone experience, I attended adapted fitness classes, conducted semi-structured interviews with stakeholders, attended continuing education program on CP and DMD, and researched about the occupational impact of the conditions. The AdaptedEx program will help meet the needs of the Robert D. Fowler YMCA for an adapted exercise program for adolescents with physical disabilities that promotes inclusivity, well-being, and social interaction.

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Summary

Background

Many children and adolescents with physical disabilities are not meeting the recommended physical activity guidelines (MacEachern et al., 2021). Moreover, there is a lack of opportunities for children with disabilities to participate in physical activity (Carbone et al., 2021). Social connections have been shown to be a major facilitator in increasing physical activity (McKenzie et al., 2021). Physical activity and social participation are under the scope of occupational therapy as they fall under the occupational domain within the Occupational Therapy Practice Framework (AOTA, 2020). An adapted community-based exercise program, created through an occupational therapy lens, can address this problem by providing an environment that encourages physical activity and social participation amongst adolescents with physical disabilities.

Question

In what way can physical activity and social participation be incorporated in the community for adolescents with physical disabilities?

Capstone purpose

The purpose of this capstone project was to develop a community based adapted exercise program to promote health management in adolescents with physical disabilities.

Specific Objectives

Objective: To develop a community-based program to address adapted group exercise in adolescents with physical disabilities, including DMD and CP. In the process of developing this program, the student will observe established adapted exercise classes at local YMCA and at a sister YMCA, and incorporate learned skill set into the developed program.

Methods

Research on DMD and CP, semi-structured interviews with stakeholders, and observations of adapted classes took place for the creation of the program. Following interviews with my site mentor, an adapted exercise instructor, and an occupational therapist, the program was created and refined.

Output

At the end of the Capstone experience, a two-module adapted exercise program was created for the Robert D Fowler YMCA. This program is geared towards adolescents with physical disabilities and created on the foundation of occupational therapy's role in health maintenance and management.

Outcome

The created program is projected to be executed by a certified exercise class instructor at the YMCA. The intended outcome of this program is to benefit the community by providing a community-based program for adolescents with physical disabilities as well as enhance the overall well-being of adolescents who attend.

Chapter 1:

Literature Review

Introduction

Children and adolescents with disabilities have lower fitness levels and higher rates of obesity when compared to their peers (MacEachern et al., 2021). This claim indicates that this population is both not meeting the guidelines for physical activity and is affected by barriers to participation (MacEachern et al., 2021). Opportunities for children with disabilities to participate in physical activity are lacking resulting in these individuals engaging in sedentary activities leading to obesity and increased isolation (Carbone et al., 2021). High levels of inactivity over a period of time can lead to metabolic dysfunction, cardiovascular disease, and poor bone density (Carlon et al., 2013).

Physical Activity and Overall Health

There is a higher prevalence of adolescents with disabilities who are overweight when compared to non-disabled peers; being overweight may produce secondary outcomes including fatigue, pain, social isolation, and increased difficulty performing activities of daily living (Rimmer et al., 2007). One systematic review with meta-analysis reported individuals with disabilities have fewer depressive symptoms when participating in physical activity, exercise, or sports programs when compared to the control group (Jacinto et al., 2023). Additionally, participation in either physical activity, exercise, or sports programs may be beneficial avenues for individuals with disabilities that would promote mental health, quality of life, and well-being (Jacinto et al., 2023).

Specific Disability: DMD and Exercise

The consensus of exercise is controversial for individuals with muscular dystrophy due to the potential outcome of physical exercise exacerbating muscle damage (Lombardo et al., 2021).

While exercise is a controversial subject for this specific population, it is important to note the many other underlying causes that could be a culprit including the specific exercise being used (high-resistance eccentric exercises), oxidative stress, and many metabolic mechanisms (Lombardo et al., 2021). On the other side of this controversy, Lombardo et al. (2021) states that muscle weakness can also be caused by muscular atrophy and deconditioning due to an inactive lifestyle (Lombardo et al., 2021). Based on this, tailored exercise for muscular dystrophy patients could be used to help prevent non-use atrophy, maintain remaining strength, support cardiorespiratory function, and optimize energy efficiency (Lombardo et al., 2021). Voet et al. (2013) conducted a literature search to analyze both the safety and efficacy of strength and aerobic training in people with muscle diseases. Overall, the review concluded no harm was done to the muscles, in individuals with muscle diseases, when partaking in aerobic exercise training and moderate-intensity strength training (Voet et al., 2013). Additionally, another article reports functional motor deterioration slowed in boys with DMD when they took part in assisted bike exercises and upper extremity training (Carbone et al., 2021). Siciliano et al. (2019) also acknowledge the debate as to individuals with myopathic disorders participating in muscle exercises. While acknowledging the debate, this article continues to suggest that aerobic exercise is safe and potentially effective for individuals with muscle disorders, including muscular dystrophy, when training is supervised and personalized (Siciliano et al., 2019). Supervision and individualization are recommended during exercise training amongst adolescents with muscle diseases, (Siciliano et al., 2019) this can likely be fulfilled in small group exercise classes with a qualified fitness instructor.

Specific Disability: CP and Exercise

Young people, specifically with CP, show significantly lower levels of participation in physical activity when compared to their peers (Carlon et al., 2013). Many individuals with CP have reduced physical activity participation, muscle strength, and cardiorespiratory endurance, all of which put the individual at risk for negative health outcomes like metabolic and cardiovascular diseases (Verschuren et al., 2016). For some individuals with CP, it is almost impossible to meet the 60 min recommendation of physical activity due to the severity of their condition, however, it is recommended that most individuals with CP try to meet this public health recommendation (Verschuren et al., 2016). In one study that measured the effects of individual physical fitness programs for children and adolescents with CP, it is reported that while there were no differences on quality of life, the exercise group did show better physical fitness in cardiopulmonary endurance, muscle strength, agility, and balance when compared to the control group (Jeng et al., 2013). In terms of group exercise interventions for adolescents with CP, one study concluded both group circuit progressive resistance exercise training and treadmill training can improve motor function in adolescents with CP (Aviram et al., 2017).

Contributing Factors and Barriers to The Lack of Exercise

Factors that contribute to the lack of exercise amongst adolescents with disabilities include non-inclusive social and physical environments, the inability to appropriately handle the nature of the disability, and the lack of discussion around increasing physical activity within this population. In one mixed methods systemic review, McKenzie et al. (2021) report two main factors that either hinder or facilitate participation in physical activity amongst people with physical disabilities include the social and physical environment. Positive social environments and connections are key motivators in physical activity as well as a key component for increasing a sense of belonging, easing fears, and encouraging young people to prioritize

physical activity (McKenzie et al., 2021). MacEachern et al. (2021) identified in their study that the most common barrier to participation is the inability of programs and environments to appropriately handle the nature of the disability. The limited access not only affects this population's physical health, but their mental health also takes a toll from this barrier (MacEachern et al., 2021). Another barrier to physical activity, specifically among individuals with CP, includes the lack of discussion around increasing physical activity and decreasing sedentary behavior as part of a healthy lifestyle; normally, conversation from professionals revolves around symptom management and daily function (Verschuren et al., 2016).

Community-Based Adaptive Exercise

Alghamdi and Alsaigh (2023) concluded that engagement in physical activity for children with disabilities is influenced by social factors, which can be attained through access to public physical activity facilities. One framework for a well-rounded approach to physical activity discussions for children with disabilities is the 5 F-words (Dubon et al., 2023). The 5 F-words include fitness, function, friendships, family factors, and fun; in this approach tool, fitness is defined as facilitators or barriers that affect the child's participation in physical activity (Dubon et al., 2023). One possible solution for increasing children and adolescents' physical activity is the incorporation of fitness, friendships, and fun into a community-based group exercise class that promotes a positive social environment and an accommodating physical environment. McKenzie et al. (2021) notes that while there are community activity programs offered, they often do not succeed as usually there is a lack of disability knowledge and negative attitudes by the staff contributing to negative experiences for the participants. In a successful adaptive class, the instructor would be knowledgeable in facilitating adaptive classes and educated on the nature

of the disabilities present as well as possessing the ability to maintain a positive and joyful attitude.

Occupational Therapy and Adapted Group Exercise

A community dwelling adapted exercise class for adolescents with disabilities not only addresses a need for increased physical activity, but it also embodies the OT values of physical health, social health, and inclusion for people with disabilities (AOTA, 2020). Physical activity is a key component of health management in the Occupational Therapy Practice Framework (OTPF); the OTPF defines health management as “activities related to developing, managing, and maintaining health and wellness routines, including self-management, with the goal of improving or maintaining health to support participation in other occupations” (AOTA, 2020). The OTPF describes physical activity under health management as “completing cardiovascular exercise, strength training, and balance training to improve or maintain health and decrease risk of health episodes, such as by incorporating walks into daily routine” (AOTA, 2020). Health management falls under the occupational domain, an area of knowledge and expertise within OT (AOTA, 2020).

Additionally, Occupational therapists are trained in group-based interventions; group work has been a part of OT since the 1920’s and has been used to promote change in behavior, improve function and socialization, and eventually promote wellness within community-based practice (Susan et al., 2014). OTs use group work in various settings, including health care, organizations, and community settings to increase participation and developed social interaction skills (AOTA, 2020). Many outcomes can be addressed by OTs when using group work including health and wellness, well-being, prevention, and quality of life (AOTA, 2020). Susan et al. (2014) report the benefits of group work used within the OT scope of practice include

social interaction, communication, and engagement; in this article, parents of participating children claimed group intervention increased their child's learning, motivation, and social participation.

Conclusion

Many adolescents with physical disabilities are not meeting the required 60 minutes of moderate to vigorous activity per day, some barriers to the lack of participation in physical activities include the absence of programs and appropriate environments (MacEachern et al., 2021). McKenzie et al. (2021) suggests prioritizing social components of physical activity, for people with physical disabilities, since social connections are linked to being a major facilitator and benefit of physical activity participation. The lack of physical activity and the need for socialization among adolescents with physical disabilities can be addressed by means of a group exercise class for these individuals. An adapted group exercise class can be utilized to address the occupation of health management. Two key components of my proposed adapted exercise class include physical activity and social health, these two components fall under health management in the OTPF. My proposed program will address the importance of health management as an occupation in the lives of adolescents and children with physical disabilities, a population that is at risk for lacking physical exercise.

Chapter 2:

Needs Assessment

Dubon et al. (2023) reports that only 25% of children are participating in the appropriate amount of physical activity, and for children with disabilities, this number is similar or even lower. Studies mentioned above highlight the fact that children with disabilities participate in less physical activity than their non-disabled counterpart. Additionally, there is a lack of opportunities for children with disabilities to participate in physical activity, thus, this population engages in higher levels of sedentary behavior resulting in an increase of health complications and isolation (Carbone et al., 2021). It is imperative that more opportunities arise for children and adolescents with disabilities to take part in physical activity for their overall well-being.

Many barriers may prevent a child from participating in physical activity, including personal and environmental factors (Dubon et al., 2023). McKenzie et al. (2021) report two main environmental factors that affect participation include both the social and physical environment. The physical environment can either encourage participation or hinder it depending on the facility's layout and design. Likewise, social environments can either hinder or encourage participation; positive social connections are important as this is a key motivator for participation in physical activity (McKenzie et al., 2021).

The YMCA in the metro Atlanta area already offers adapted classes to various populations including classes for those diagnosed with Parkinson Disease and an adaptive fitness class for adolescents with Down Syndrome. The site community facility, Robert D Fowler YMCA, already offers adaptive classes to the older adult population, thus, their physical environment is appropriate for individuals with disabilities as it contains no stairs to enter and has access to an elevator. While there are adapted classes for the older adults, this YMCA lacks adaptive fitness classes for children and adolescents with physical disabilities. According to

stakeholders, there is a need for this as there has been expressed desire by parents at the Robert D. Fowler YMCA for staff to assist their children who have physical disabilities, mainly CP and DMD, with exercise. The evidence above states the importance of physical exercise for children with disabilities.

According to Cornell University 2022 disability status report, six percent of children ages five to fifteen have a disability in the United States (Erikson et al., 2024). CP is said to be the most common motor disability diagnosed amongst children (Cerebral Palsy Guidance, 2024). Moreover, between 1,200 and 1,500 children are diagnosed with CP in the United States each year (Cerebral Palsy Guidance, 2024). Adaptive programs for CP would benefit the community as this is a common diagnosis in children in the United States. DMD is less common affecting about 1 in 3,500 male births globally (National Organization for Rare Disorders, 2024). There are currently no adaptive classes at the Atlanta YMCAs geared towards these two diagnoses, CP and DMD.

This capstone project will address this identified need by creating an adapted exercise program binder. This binder will contain education on CP and DMD, education regarding the skills needed to facilitate and run an adapted exercise class, and modules containing appropriate exercises and social interaction activities.

Chapter 3:

Program Development

Site Description

The capstone project was completed in partnership with the Robert D. Fowler metro-Atlanta YMCA. The YMCA is a community-dwelling, nonprofit organization that serves communities worldwide. The mission of the YMCA is to, “put Christian principles into practice through programs that build healthy spirit, mind and body for all.” The YMCA desires to be a place in the community where everyone feels like they belong. This organization also encourages and values diversity and inclusion among its members and partners. This value is reflected in their clients served as they are open to serving all individuals. Many programs and classes are offered to members including group exercise programs, specialized programs for older adults, personal wellness training, water activities, water safety and swimming, day camps, community outreach programs, caregiver support groups, and organized sports. The group-ex instructors at the YMCA are required to participate in 5 online courses regarding the principles of the YMCA, an overview of muscle groups, and education of class formats and appropriate beats per minute. The staff is also required to be up to date on their CPR certifications and participate in ten credits of continuing education.

The metro-Atlanta’s YMCA already offers classes for individuals with disabilities including Parkinson’s boxing and adaptive fitness for teens with Down’s Syndrome. This project fits with the site’s already established programs by also encouraging overall health and inclusion for adolescents with physical disabilities.

Process of Development

In this project I used an iterative two-pronged approach, (1) semi-structured interviews with YMCA fitness instructors and (2) research of evidence to inform the design of the program.

Interviews with the YMCA fitness instructors shed light on specific diagnosis in need at the site and provided information on the facilitation and organization of group fitness classes. The research exposed the need for community based adaptive fitness classes on a larger scale, informed the student on how CP and DMD are affected by participation in physical activity, and provided evidence for beneficial exercises for adolescents with these physical disabilities. Once the program was developed, based on an interview with an Occupational Therapist experienced in DMD and CP diagnoses and community-based program development, the program was further refined.

Evidence Based Program

Semi-Structured Interview- (i). The first fitness instructor I interviewed has 17 years of experience in leading and facilitating group exercise classes at the YMCA. During our discussions and semi-structured interviews, she provided insight into the specific needs of the site. These determined needs led the student to create adapted exercise classes geared toward specific diagnoses to meet the identified needs. These discussions helped shape the layout of the modules created; the first module is geared toward individuals with DMD who use a wheelchair and the second module is geared toward adolescents with CP who are ambulatory. It is important to note that these modules are geared towards these specific populations but can be adapted by the fitness instructor for other physical disabilities. Discussions with the interviewee led to the creation of a physical disabilities handout that encompasses multiple physical disabilities among adolescents that the fitness instructor may encounter. The interviewee also provided education on the logistics of facilitating a group exercise class including class layouts, the importance of beats per minute (BPM) for songs during the exercises, and knowledge about the site's equipment and resources. The various semi-structured interviews and discussions with the interviewee gave the

student valuable insight for the specific needs at this site and overall logistics for facilitating an exercise class.

Research- (ii). The first interview was followed by a literature review. The reviewed articles focused on community-based adapted exercise programs for individuals with physical disabilities, the effects of exercise on individuals with physical disabilities, the effects of exercise specifically on individuals with DMD and CP, the nature of the diagnosis DMD and CP, and OT's role in group work. See literature review above for detailed findings.

Semi-Structured Interview- (iii). The interview was with a fitness instructor who leads an adapted class for young adults with disabilities. She emphasized the importance of this class for these individuals since there seems to be a lack of physical activity programs for young adults with disabilities. She claims, to the best of her ability, that she does not cancel class as the individuals and parents of the individuals are counting on the class for both physical and social needs. She reported the fitness class motto is, "Fitness, friendship, fun." She encourages her class to not only be a place for fitness and exercise but also a safe space for social connections. This idea is supported in the literature as physical activity is influenced by the social environment regarding individuals with childhood-onset physical disabilities; positive social environments have also been shown to increase a sense of belonging, ease fears, and encourage young people to prioritize physical activity (McKenzie et al., 2021). Additionally, her motto is found in the "5 F-words" framework for physical activity discussions regarding adolescents with disabilities; the 5 F-words for discussion include fitness, function, friendships, family factors, and fun (Dubon et al., 2023). The fitness instructor highlighted the importance of an equipped and experienced instructor to facilitate the class and shared some key skills needed, like the ability to modify an activity or exercise for the individual based on their abilities. She also mentioned the importance

of having a joyful attitude as it can significantly affect the participants during the class. She explained her typical class format is very similar each time as the individuals thrive under routine and she explained her reasoning for various activities, including function and fun. The semi-structured interview with the adapted fitness instructor gave the student valuable insight for class structure, class format, and skills needed for the facilitation of an adapted class.

External Resources. External resources were utilized to explore and fully understand adapted exercise class facilitation and organization. Additionally, external resources were used for a deeper understanding of the diagnoses DMD and CP. The student watched YouTube videos and listened to podcasts regarding the two diagnoses and adaptive fitness. Additionally, the student watched a webinar on DMD on CureDuchenne (CureDuchenne, 2024) and attended a continuing education course online held at Cincinnati's Children's Hospital Medical Center regarding CP. To gain more knowledge about facilitation of exercise group classes in general, the student attended many different Robert D Fowler YMCA group fitness classes including Y-fit, Barre fusion, Pilates, Chair yoga, Water aerobics, and Parkinson's boxing. The student also attended an adapted fitness class for teenagers with disabilities at a sister YMCA.

Revising the Developed Program. Two semi-structured interviews took place with a certified pediatric Occupational Therapist (OT) who is experienced with DMD and CP. The Occupational Therapist is also experienced with community-based programs at the YMCA as she is the director of an adapted camp at a YMCA. Interviews with the Occupational Therapist occurred to improve and verify the exercises in the adapted exercise class; the student received feedback and revisions from an expert in the field. For Module 1, regarding an exercise program geared toward adolescents with DMD, the Occupational Therapist approved of the format and exercises provided by the student and deemed them safe and effective for supporting the maintenance of

function and physical activity amongst adolescents with DMD. Additionally, the Occupational Therapist provided feedback to improve the program, improvements are as follow:

- Tailoring the social interaction activities to be more age appropriate for adolescents.
- Allotting more time for the activities planned.
- Modifying the social activities to incorporate executive functioning skills and increased physical activity rather than having set questions in the activities; the Occupational Therapist suggested allotting time for natural social interactions while the participants engage in physical activity.

The revisions and feedback were used to slightly modify Module 1. See Appendix 3 for the completed Module 1.

The student performed a separate semi-structured interview with the Occupational Therapist for Module 2. The Occupational Therapist approved of the exercises to execute with children with CP. She provided suggestions for improvement including:

- Incorporating animal crawls into the strength and stretch yoga class since these movements target both strength and stretch to the child's muscles.
- Adding a note about visual impairments since almost all children with CP have a visual deficit; specifically adding bigger and brighter equipment (balls) if a child is struggling to perform the action.

The revisions and feedback were made to Module 2. See appendix 4 for the completed Module 2.

Chapter 4:

Results

The final product of this capstone experience was an adapted exercise program binder for the YMCA. See Appendix 3 for the full handout. The binder is divided into three sections:

- First section: Information on physical disabilities.
 - DMD
 - CP
 - Additional physical disabilities
- Second section: Education on skills needed by the instructor to facilitate the program.
- Third section: Modules describing the class set ups and exercises.
 - Module 1: Geared towards individuals with DMD who use wheelchairs.
 - Module 2: Geared towards individuals with CP.

First section: Information on physical disabilities.

In this section, the student provided information on the disabilities each module is geared towards and on additional physical disabilities the Robert D. Fowler YMCA may encounter while running this program.

DMD. The DMD handout contains a brief overview of the diagnosis, how an individual with this diagnosis may be affected by exercise, recommendations for general exercises, and helpful resources for either the instructor or the caregiver. See Appendix 4 for the full handout.

CP. The CP handout contains a brief overview of the diagnosis, how an individual with this diagnosis may be affected by exercise, recommendations for general exercises, and helpful resources for either the instructor or the caregiver. See Appendix 4 for the full handout.

Other physical disabilities. The student included ten additional physical disabilities with a 1-2 sentence overview on the symptoms of the diagnosis that may affect the individual during exercise. See Appendix 4 for the full handout.

Second section: Education on skills needed by the instructor to facilitate the program.

The second section includes an informational handout on skills needed by the fitness instructor to effectively facilitate this adapted program including:

- Experience
- Joyful attitude
- Ability to adapt/ modify activities correctly
- Knowledge on diagnosis present
- Effective communication skills

See Appendix 6 for the full handout.

Third section: Modules describing class format and exercises.

Module 1. Module 1 is designed to accommodate adolescents with DMD who use a wheelchair and are advised not to use heavy weights or take part in intensive eccentric exercises (Lombardo et al., 2021). It is geared more towards submaximal activity (Lombardo et al., 2021) and low intensity (Kostek, 2019) exercises and activities. Module 1 contains eight classes that are about 30-35 minutes long; the classes are designed to target different skills and muscles that may functionally benefit the individual and overall motivate the individuals to participate in physical activity. Each class contains a social component that combines movement with social interaction among the other participants in the class. This social component is incorporated due to the positive effects social environments and connections have on both the individual and the

motivation factor for physical activity (McKenzie et al., 2021). See Appendix 4 for module 1 class format and exercises; the classes include:

- Balance and Postural Class
- Seated Upper Body Class
- Coordination Class
- Exercise Ball Class
- Zumba class
- Aquatic Class
- Basketball Court Class
- Chair Yoga Class

See Table 1 for rationale on class selection. A picture document is included for clarification on the movements for each exercise; the picture document also includes the muscles involved during the exercises and variations of the workouts. See Appendix 4 for the link to view the pictures, muscles involved, and variations of the workouts.

Module 2. Module 2 is geared towards individuals with CP who can ambulate and participate in weighted eccentric activities, but still struggle with movement. Module 2 is similar to module 1 in set up and class format as the duration is 30-35 minutes and each class contains a social component, however, it includes weighted and standing exercises. See Appendix 4 for module 2 class format and exercises; the classes for module 2 include:

- Balance and Postural Class
- Upper Body Strength Class
- Coordination Class
- Exercise Ball Class

- Zumba Class
- Aquatic Class
- Basketball Court Class
- Strength and Stretch Yoga Class

See Table 1 for rationale for class design. Module 2 also contains a picture document that provides pictures of the exercises, muscles involved, and variations of the workouts. See Appendix 4 for the link to the picture document.

The student disseminated the final project via presentation at the Robert D. Fowler YMCA.

Chapter 5:

Discussion and Impact

There is a need for adapted exercise for adolescents with physical disabilities, mainly CP and DMD, at the Robert D. Fowler YMCA. The created adapted program binder addresses this specific need. This program is relevant to OT as it advocates for health management and inclusivity for individuals with physical disabilities. Health management falls under the role of an occupational therapist as it is under the occupation domain in the OTPF; health management contains both physical activity and social health components (AOTA, 2020). This program aims to support the incorporation of physical activity and social health into the schedules and routines of individuals with physical disabilities. OT also advocates for the inclusivity of individuals with disabilities (AOTA, 2020), and this program supports an inclusive environment as it is aimed at including individuals with physical disabilities into community-based exercise programs.

Regarding short-term impacts, this project addresses the need for adapted fitness for adolescents with physical disabilities who live near the Robert D. Fowler YMCA. This project furthers the YMCA's values of inclusion and diversity by creating a space for individuals who may be marginalized in many community activities. This program can positively impact individuals who are physically disabled and their families by providing an adaptive and welcoming community at the Robert D. Fowler YMCA.

Potential long-term impacts this project may have includes (1) providing a level 1 fieldwork for the Occupational Therapy Department at Georgia State University(GSU) and (2) positively impacting the Robert D. Fowler YMCA. Ideally, GSU will partner with the Robert D. Fowler YMCA for a level 1 fieldwork in which students will help carry out this adaptive fitness class. The YMCA will mutually benefit as volunteers will be provided to help facilitate and improve the adapted fitness program.

Limitations

Even though this program is geared towards specific disabilities, it lacks individualization as there is a wide range of abilities within the diagnoses of CP and DMD. Additionally, individualization of each exercise may suffer as this is a general adaptive program relying on the instructor to adapt it to each participant's needs. Secondly, this program requires an instructor certified in adaptive fitness; this qualification limits the number of staff who are able to instruct this program. Lastly, while this program has been verified by a certified pediatric occupational therapist, it has not yet been tested for effectiveness for both the instructors and participants at the Robert D. Fowler YMCA.

Sustainability Plan

The student provided a presentation to YMCA staff to provide education on the diagnoses of CP and DMD and the developed adapted community-based program. Ideally, the staff and instructors will use the education and modules provided to implement the created program. To further the program's sustainability, either:

- GSU will partner with the YMCA by establishing a level 1 fieldwork at the YMCA; to help sustain this program, the level 1 fieldwork students will help facilitate the program.
- OR a year three, GSU occupational therapy student will implement the created program for their Capstone Project to evaluate the effectiveness of the created program.

This program can also be used as an educational tool for the instructors of other metro Atlanta YMCA's, in addition to their adapted fitness certification, to provide and promote adaptive fitness across the metro Atlanta area.

Conclusions

This Capstone project aimed to address the fact that individuals with disabilities are not meeting the required physical activity recommendations (MacEachern et al., 2021) by developing an adapted fitness program for the Robert D. Fowler YMCA. This developed program is designed to promote physical health, social health, and inclusivity for adolescents with physical disabilities, mainly CP and DMD as these diagnoses are the specific need within the community at the Robert D. Fowler YMCA. The end product of this experience resulted in an adapted exercise program for adolescents with physical disabilities, mainly CP and DMD, that contains both education for future instructors on the diagnoses and two modules geared towards individuals with CP or DMD. Future work still needs to take place to test the effectiveness of the program developed.

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Tables

Table 1: Rationale for Adapted Exercise Classes

Fitness Class	Module 1: Duchenne Muscular Dystrophy	Module 2: Cerebral Palsy
Balance/ Postural; Coordination; Upper Body	Arm cycling is shown to be advantageous for individuals with DMD (Hammer et al., 2022). I chose cardio arm exercises to resemble arm cycling but hopefully not be as monotonous as arm cycling. Additionally, the balance and exercise ball class is intended to help maintain postural muscles and the coordination class is incorporated as coordination is needed for many functional activities.	Balance and coordination are affected in individuals with CP; exercises focused on building resistance have been shown to improve these symptoms (Gonzalez et al., 2023).
Zumba; Aerobic	Building social connections is a key component to increasing participation in physical activity (McKenzie, Willis, & Shields, 2021). These two classes are mainly focused on fun while participating in physical activity.	
Aquatic	Low intensity, low impact exercise like aquatics should be beneficial to individuals with DMD in most circumstances (Kostek, 2019). The properties of water reduce stress on the joints and counterbalance gravity effects (Torres-Ronda & Del Alcázar, 2014).	Aquatic physical activity can be advantageous for this population since water properties decrease the negative influences of poor balance and postural control (Kelly & Darrah, 2005).
Yoga	(Seated) Stretching is recommend since contractures are likely, specifically at the knees, ankles, and hips (Birnkrant et al., 2018).	(Strength/Stretch) It is suggested that combining resistive training with stretching exercises can be beneficial to individuals with CP as it may help increase muscle fascicle length; functional benefits of this need to still be explored (Kalkman, Bar-On, O'Brien, & Maganaris, 2020).

Appendix 1: Learning Objectives

Long Term Learning Objective 1

Student will develop a community-based program to address adapted group exercise in a population of teenagers with physical disabilities including Muscular Dystrophy and Cerebral Palsy.

- Short Term Goal #1: Student will develop the 1st module of Program (Completed by Week 8).
 - Student will observe established adapted class format at the YMCA in Alpharetta.
 - Student will stay in constant communication with site mentor for revisions and ideas.
 - Student will complete the format of the class and use evidence-based information from literature review.
 - Student will research already established adapted classes for specific population of interest.
- Short Term Goal #2: Student will develop 2nd module of the program (Completed by Week 11).
 - Student will observe established adapted class format at the YMCA in Alpharetta.
 - Student will stay in constant communication with site mentor for revisions and ideas.
 - Student will complete format of class- use evidence-based information from literature review.
 - Student will research already established adapted classes for specific population of interest.

- Short Term Goal #3: Student will complete a pilot of the developed program (Completed by Week 13).
 - Student will meet with Occupational Therapist for feedback on developed program.
 - Student will meet with site mentor to run through the format/plan of the first class in preparation for site mentor to execute class.

Long Term Learning Objective 2

Student will grow skill set of developing and facilitating a community group-based program (Completed by Week 13).

- Short Term Goal #1: Student will observe an established adapted exercise class at local YMCA and sister YMCA (Completed by Week 6).
 - Student will observe adapted classes at local YMCA.
 - Student will establish date and time with the adapted YMCA instructor.
 - Student will meet with adapted YMCA instructor to gain knowledge about facilitating an adapted exercise class.
 - Student will research effective ways to facilitate an adapted exercise class from external resources.
- Short Term Goal #2: Student will incorporate learned skill set into the developed program. (Completed by Week 13).
 - Student will talk through the logistics of running the adapted exercise class with site mentor and the skills needed to facilitate a community adapted program.
 - Student will make necessary revisions to program.

Appendix 2: Supervision Plan

<i>Student responsibilities</i>		<i>Site Mentor responsibilities</i>	
<i>Topic</i>	<i>Description</i>	<i>Topic</i>	<i>Description</i>
Schedule meetings	Once a week student will schedule a meeting with site mentor in person or online for progress tracking. Each meeting will last roughly 30 min. to an hour. *See table below	Scheduled meetings	Site mentor will attend meeting with student once a week to evaluate progress and check-in. *See table below
Communication methods	Student will communicate with site mentor either by face-to face, call, text, or email. Student will initiate communication when needed. Student will respond to contact within one business day.	Communication methods	Site mentor will establish a preferred communication method with student. Site mentor will respond to student within one business day and have availability at least once a week to meet with student.
Resolving possible disputes	Student will meet with site mentor in person to discuss dispute with clear communication. If needed, student will contact the capstone coordinator and/or faculty advisor to further discuss and resolve possible dispute.	Resolving possible disputes	Site mentor will meet with student in person to discuss dispute with clear communication. If needed, site mentor will meet with capstone coordinator and/or faculty advisor to discuss and resolve dispute.
		Types of expertise desired from site mentor	Understands and has had experience with exercise class format. Experience working with intended population of need.

			<p>Experience in collaborative teamwork.</p> <p>Site mentor will give access to the student to shadow classes (either taught by site mentor or another instructor)</p>
<p>Roles and Responsibilities: (Obtained from the OTD capstone manual)</p>	<ol style="list-style-type: none"> 1. Maintain regular contact with site mentor. 2. Respectfully interact with all members involved with Capstone Experience. 3. Integrate knowledge from previous coursework in the occupational therapy curriculum to reinforce the development of the capstone project. 4. Collaborate with site and faculty mentor concerning goals and learning objectives. 5. Initiate contact with capstone coordinator and mentors about concerns and potential absences. 6. Utilize constructive feedback received from mentors. 7. Complete tasks assigned by the site mentor that are in alignment with the chosen focus area and outcome of capstone. 	<p>Roles and Responsibilities :</p> <p>(Obtained from OTD capstone manual)</p>	<ol style="list-style-type: none"> 1. Introduce and familiarize student with site including expectations, procedures, and other personnel. 2. Maintain an open line of communication with capstone team. 3. Collaborate with student, capstone coordinator, and faculty mentor to create specific mentor responsibilities. 4. Collaborate and assist capstone team with the needs assessment component of this project. 5. Work with student on specific objectives and plan of supervision. 6. Assist student with logistics of completing work at the site including hours of operation and an accommodating workspace. 7. Provide onsite supervision and mentoring for the duration of the project.

	<p>8.Track and complete a minimum of 560 hours of Capstone Experience</p> <p>9.Complete and disseminate capstone project.</p> <p>10.Evaluate site and site mentor.</p>		<p>8.Provide necessary verbal feedback to student within a week of the deliverable.</p> <p>9.At midterm and final, evaluate and assess student performance.</p> <p>10.Verify and initial student time log.</p>
	<p>The student is expected to maintain a professional and collaborative relationship with the site mentor.</p> <p>If the student fails to meet the expected roles and responsibilities, the site mentor will address the student first. The site mentor and student will work to adjust as needed to get back on track. If they cannot come to a consensus, the capstone coordinator will be contacted by the student.</p>		<p>The site mentor is expected to maintain a professional and collaborative relationship with the student.</p> <p>If the site mentor fails to meet the expected roles and responsibilities, the student will address the mentor first. The site mentor and student will work to adjust as needed to get back on track. If they cannot come to a consensus, the capstone coordinator will be contacted by the student.</p>

Appendix 3: IRB Approval Form



INSTITUTIONAL REVIEW BOARD

Mail: P.O. Box 3999 In Person: 3rd Floor
Atlanta, Georgia 30302-3999 58 Edgewood
Phone: 404/413-3500 FWA: 00000129

November 30, 2023

Principal Investigator: Sutanuka Bhattacharjya

Key Personnel: Bhattacharjya, Sutanuka; Jeffers, Grace

Study Department: Georgia State University, Department of Occupational Therapy

Study Title: Adapted exercise program for adolescents with physical disabilities.

Submission Type: Exempt Protocol Category 2

IRB Number: H24260

Reference Number: 377437

Determination Date: 11/30/2023

Status Check Due By: 11/29/2026

The above-referenced study has been determined by the Institutional Review Board (IRB) to be exempt from federal regulations as defined in 45 CFR 46 and has evaluated for the following:

1. Determination that it falls within one or more of the eight exempt categories allowed by the institution; and
2. Determination that the research meets the organization's ethical standards

If there is a change to your study, you should notify the IRB through an Amendment Application before the change is implemented. The IRB will determine whether your research continues to qualify for exemption or if a new submission of an expedited or full board application is required.

A Status Check must be submitted three years from the determination date indicated above. When the study is complete, a Study Closure Form must be submitted to the IRB.

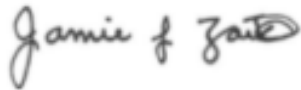
This determination applies only to research activities engaged in by the personnel listed on this document.

It is the Principal Investigator's responsibility to ensure that the IRB's requirements as detailed

in the Institutional Review Board Policies and Procedures For Faculty, Staff, and Student Researchers (available at gsu.edu/irb) are observed, and to ensure that relevant laws and regulations of any jurisdiction where the research takes place are observed in its conduct.

Any unanticipated problems resulting from this study must be reported immediately to the University Institutional Review Board. For more information, please visit our website at www.gsu.edu/irb.

Sincerely,

A handwritten signature in black ink that reads "Jamie f Zaikov". The signature is written in a cursive style with a large, stylized initial "J" and a flourish at the end.

Jamie Zaikov, IRB Member

Appendix 4: AdaptedEx Program

DUCHENNE MUSCULAR DYSTROPHY



OVERVIEW

- Progressive muscle wasting disease.
- Caused by mutations that affect the production of dystrophin in muscle tissue.
- Individuals have difficulties with movement, respiratory functions, and heart functions, basically any muscular function in the body.
- (Duan, Goemans, Takeda, Mercuri, & Aartsma-Rus, 2021)

DMD AND EXERCISE

- Exercise is controversial amongst this population due to potential muscle damage BUT studies have shown potential benefits for individuals with DMD (Lombardo et al., 2021)
- One meta-analysis that evaluated the effects of exercise training interventions to improve functioning in people with DMD reports no adverse effects concerning safety during exercise training, however, it is unable to conclude the safety of exercise training. It also concluded exercise training in people with DMD improves muscular strength and endurance. (Hammer et al., 2022)
- One article claims tailored exercises for muscular dystrophy persons could be used to help prevent non-use atrophy, maintain remaining strength, support cardiorespiratory function, and optimize energy efficiency (Lombardo et al., 2021)
- One article reports functional motor deterioration slowed in boys with DMD when they participated in bike exercises and upper extremity training (Carbone et al., 2021).

RECCOMENDATIONS

GENERALLY YES

- Submaximal exercise (Hammer et al., 2022)
- Stretching
- Low-intensity endurance training
- Personalized protocols
- Gentle aerobic exercise (aquatics)
- Play (Lombardo et al., 2021)

NOT RECCOMENDED

- High resistance
- Eccentric training
- Weight training (Lombardo et al., 2021)



REASOURCES FOR DMD

- CureDuchenne
- Parent Project Muscular Dystrophy
- Muscular Dystrophy Association

CEREBRAL PALSY



OVERVIEW

- "CP is a group of permanent disorders of the development of movement and posture, causing activity limitations that are attributed to non-progressive disturbances that occurred in the developing foetal or infant brain" (Sadowska, Sarecka-Hujar, & Kopyta, 2020).
- Neurodevelopmental disorder (Gulati & Sondhi, 2018).
- Characteristics: abnormalities of muscle tone, movement skills, motor skills (Gulati & Sondhi, 2018).
- Comorbidities may include epilepsy, cognitive impairment, visual impairment, auditory impairment, growth and gastrointestinal disturbances (Gulati & Sondhi, 2018).

CP AND EXERCISE

- Compared to the general population, individuals with CP have a higher prevalence of fatigue, pain, depression, cardiovascular disease, hypertension, and type 2 diabetes (Ryan, Cassidy, Noorduyn, & O'Connell, 2017).
- It is reported that in young adulthood, individuals with CP experience a decrease in muscular strength, aerobic fitness, and mobility (Ryan et al., 2017).
- There is often little discussion around healthy physical activity with children with CP as most of their physical activity comes from therapy sessions and sports events for children with disabilities (Verschuren, Peterson, Balemans, & Hurvitz, 2016).
- One mixed methods systemic review reported two main factors that either hinder or facilitate participation in physical activity, among people who have a physical disability, include the social and physical environment (McKenzie, Willis, & Shields, 2021).
- Benefits of exercise amongst this population:
 - Prevention of chronic disease and maintenance of physical fitness (Ryan et al., 2017).
 - Improved cardiopulmonary endurance, muscle strength, agility, and balance (Jeng et al., 2013).
 - One article reports group circuit progressive resistance exercise training and treadmill training can improve motor function in individuals with CP (Aviram, Harries, Namourah, Amro, & Bar-Haim, 2017).
- Individuals, especially children, may be more inclined to exercise if they enjoy it and view exercise as an opportunity for social interaction (Ryan et al., 2017).

RECCOMENDATIONS

- **AEROBIC EXERCISE THAT INVOLVES MAJOR MUSCLE GROUPS AND IS RHYTHMIC AND CONTINUOUS.**
- **RESISTANCE TRAINING THAT PROGRESSES FROM SINGLE-JOINT MACHINEBASED TO MULTI-JOINT FREE WEIGHT EXERCISES.**
- **(VERSCHUREN ET AL., 2016).**



RESOURCES FOR CP

- MYCHILD™
- UNITED CEREBRAL PALSY

Additional Physical Disabilities

1

AMPUTEES

Child may be in wheelchair. Depending on the amputation level in the lower extremities, the child's balance may be affected (Karaali et al., 2020).

2

ATAXIA

Poor coordination: child has trouble walking and balancing. Child may also have trouble speaking (Chien et al., 2022).

3

CANCER

Lower intensity exercise for children on treatment, resistance training should be high repetitions and lower weight initially, like body weight and resistive bands (West et al., 2019).

4

CYCLIC FIBROSIS

During anaerobic exercise child may need longer break due to poor cardiac and respiratory functions; may be beneficial to have 3x as long of a rest (i.e. 30 sec work, 90 sec rest). Hot yoga should be avoided due to heat intolerance with CF (West et al., 2019).

5

JUVENILE IDIOPATHIC ARTHRITIS

Encouraged prolonged warm-up and cool-down for injury prevention; recommended to avoid HIIT due to fracture risk and inflammatory response (West et al., 2019).

6

OBESITY AND TYPE 2 DIABETES

Prolonged warm-up and cool-down for injury prevention (West et al., 2019).

Additional Physical Disabilities

7

SICKLE CELL DISEASE

Experience pain crisis/episodes; avoid exercising too hard (CDC).

8

SICKLE CELL TRAIT

More likely to experience heat stroke or muscle breakdown during intense exercise; individual should rest often, drink plenty of water, avoid getting too hot (CDC).

9

SPINA BIFIDA

Affects the spine and can be in different places along the spine: higher level of spina bifida on the spine may have paralyzed legs and use of wheelchair; individuals with spina bifida lower on the spine may use crutches, braces, walkers; individuals usually cannot control their bladder/bowel function; individuals may have difficulties with vision; physical activity is recommended (CDC).

10

SPINAL CORD INJURY

Child may be in a wheelchair.
Child may have scoliosis and bracing; rods may reside in the child's spine resulting in impaired lung development (harder time breathing) and trunk rotational deformities. (Osorio, Reyes, & Massagli, 2014)
Child may have a loss of bone density thus child may experience a fracture (especially in the lower extremities) with minimal trauma. (Osorio et al., 2014)

TEACHING SKILLS NEEDED



EXPERIENCE

Experience teaching and leading group fitness classes and certification in adaptive fitness.



JOYFUL ATTITUDE

Joyful attitude, be excited about the exercise, it will be contagious! Remember, you are here for them!



ADAPT/ MODIFY

Ability to adapt and modify exercises based on the participants need and skill level.



KNOWLEDGE

Basic knowledge of the diagnosis present and knowledge on signs/symptoms of overexhaustion.



COMMUNICATE

Ability to communicate with the caregivers about the child's diagnosis and abilities/limitations.

Module 1: DMD

Note: Individuals with DMD are not advised to participate in progressive eccentric strength training exercises (Lombardo et al., 2021). These exercises in this module are mainly focused on low intensity activities (Kostek, 2019). This module is also designed to provide a fun and welcoming social environment. This class is a general guideline since all individuals with DMD are different; if at any time a participant seems out of breath or struggling with an exercise, simply take a group break or modify the exercise.

Note: There may be a need for 1:1 helper to participant ratio depending on the participants current range of motion and strength.

Note: If participant struggles to lift arms, the utilization of TRX straps to support the arms for increased range of motion may be beneficial.

Balance/ Postural

Materials needed: Crumpled paper, trash can, cut-outs of different colored circles, boxing bag, boxing gloves.

Total class time: About 30 min.

Warm up (1 round)

- 30 sec: Slow seated marching: Arms only if needed, participant may need help to lift legs slowly.
- 30 sec: Side leans: Lift both arms (or one) overhead and lean side to side slowly and controlled. If participant is unable to lift arms, just execute leans from side to side with arms at side.
- 5 min: Social Interaction: Trash-Ket ball: Utilize crumpled paper and have the participants throw the crumpled paper into a trash can (move the trashcan further or closer based on the participant's ability).

Workout (2 rounds, Rest 30 sec after each exercise and 1 min after 1st round)

- 30 sec: Seated Jumping jack: Just arms if needed.
- 3 min: Seated Touch the Rainbow Game: Participant sits close to the wall, on the wall are different colored circle cut-outs, instructor calls out a color for the participant to touch. The colors should be far enough apart to incorporate different reaches. OR have the cut-outs at the front of the room and play "Simon says," the instructor calls out a color the participants must reach for; this also challenges the participants' listening skills since the instructor may try to trip them up by not saying "Simon says."

- 30 sec: Seated Lateral Abdominal Flexion: Reach arm down the side of chair to complete lateral flexions.
- 3 min: Boxing with Lateral Movements: Slow and controlled (jab, jab, hook, hook, uppercut, uppercut), instructor calls out a sequence of moves to complete. May incorporate use of boxing bag based on caregivers' preference; may also utilize human hands for a target.
- 30 sec: Seated Twist: With hands out to a T OR in front of chest, slow and controlled.

Cool down (2 rounds, 10 sec)

- Back Stretch: Lean forward and back in chair.
- Side Stretch: Lean side to side with arm overhead, R then L.
- Torso Twist: Raise arms above head then lower down and twist, R then L.
- Shoulder Stretch: Arm across body.

YMCA dance

Seated Upper Body

Materials needed: Ball and Hula-hoop (target).

Total class time: About 30-35 min.

Warm up (2 rounds, 20 sec)

- Deep breaths.
- Arms out to a T- arms touch shoulders - arms out to a T - arms down by side.
- Arms in front - arms down by side.
- Arms above head - arms down by side.
- Shoulder shrugs.

Workout (2 rounds, Rest 30 sec after each exercise and 1 min after 1st round)

- 30 sec: Overhead press: Arms straight up then come down to a football post (strong, slow, and controlled). No weights.
- 2 min: Cardio Boxing: Air boxing (variation of jab, hook, uppercut), slow beat, to increase executive functioning skills give number to each punch and call out different number variations.
- 5min: Social Interaction Questions: Push beach ball from chest to designated target, whoever hits the correct target gets to ask the class a ‘would you rather’ question. *See ‘Would you Rather’ questions below*
- 2 min: Cardio Boxing: Air boxing (variation of jab, hook, uppercut), slow beat.
- 30 sec: Cactus pose: Arms in goal post position then move arms from the shoulder joint to midline (maintaining 90 degrees with elbows).

Cool down (2 rounds, 10 sec)

- Back Stretch: Lean forward then lean back, flow.
- Shoulder stretch: Arm across chest and hold, R then L.
- Triceps stretch: Arm behind head, hold, R then L.
- Turtle to bird stretch: Flow.

YMCA dance

Coordination

Materials needed: Beach ball with written questions, soft balls, and hula-hoop.

Total class time: About 30 min.

Warmup (2 rounds, 20 sec)

- Deep breaths: Only 1 round.
- Big arm circles: Forwards and backwards. If participant is unable to hold arms out, have them do shoulder circles.
- Small arm circles: Forwards and backwards.
- Arms up to sky arms down by side: Inhale arms go up; exhale arms go down.
- Neck stretch: Ear to shoulder, R then L side.

Workout (1 round, 30 sec rest between each exercise)

- 5 min: Social Interaction: Participant throws beach ball with various questions on it, wherever the catcher's right thumb lands is the question the participant (catcher) answers. OR play hot potato, when song stops the person with the ball answers the question where their right thumb is. *See beach ball questions below*
- 5 min: Coordination Game: Throw a soft ball in a moving hula-hoop held by instructor; whoever makes it in the hula-hoop first gets to be the one to move the hula-hoop around the room.
- 10 min: Social Interaction: Delayed Simon Says: 1st round instructor calls out the following exercises and the second round the participants take turns calling out the same exercises or one of their choice.

- Out-Finger-Out-Head: Arms straight out to a T, then come in to touch fingertips, then arms go back out to a T, then come back in to touch back of head. Participant can also pass ball around head using the same movements.
- Scissor Hands: Arms straight out in front, gradually take arms overhead while scissoring, and back down.
- Cross Body Row: Arm goes all the way across body then do a pull in.
- X-Exercise: Arm goes up then comes down to touch opposite knee, then back up, then opposite foot.

Cool Down (2 rounds, 10 sec)

- Back Stretch: Lean forwards and backwards in chair.
- Shoulder Stretch: Arm across body, R then L.
- Side Stretch: Arm stretch overhead and lean.
- Turtle to Bird Stretch: Slow, flow.

YMCA dance.

Exercise Ball

Materials needed: Bender ball and exercise balls for everyone.

Total class time: About 25-30 min.

Warm up (Ask 4 Questions)

- 5 min: Social Interaction: Would you rather questions, instructor calls out a ‘would you rather question’ and instructs participants to go to either the right side of the room for the first option and left side of room for second option. Perform the warm-up that goes with the would you rather answer.
 - 1st option: 2 Deep breathes, inhale arms reach up, exhale arms down by side.
 - 2nd option: 4 Arm circles forwards and 4 backwards.

Workout ~Transfer to exercise ball~ (2 rounds, 30 sec rest after exercise, Rest 1 min after 1st round)

- 30 sec: Hip Mobility: Tilt pelvis forwards and backwards.
- 30 sec: Hip Mobility: Tilt pelvis side to side.
- 30 sec: Shoulder Work: Hold bender ball in R hand and make rainbow shape to switch ball to L hand at top of semicircle. If this is too challenging, have the child switch ball from hand to hand in front of body.
- 2 min: Core Game: Lateral flexion taps on the exercise ball to the R and L. Drumming on the exercise ball- drum leader is the instructor and participants repeat the instructor’s drum sequence; instructor has option to appoint a participant to be the drum leader. Potential song: “Livin’ On A Prayer.” Option for participant to sit in wheelchair and drum on exercise ball.

- 30 sec: Cactus Pose to Overhead Press: Start with arms in goalpost position, come to midline only moving at the shoulder joint, back out to goal post, then complete overhead press.

YMCA Dance on ball.

Cool down ~ Transfer back to wheelchair~ (2 rounds, 10 sec)

- Deep Breathes: Hold bender ball with both hands and breathe in as ball comes up over head, exhale as ball comes back down, flow.
- Shoulder Stretch: Arm across body stretch, hold.
- Forearm stretch: Hold arm straight out and gently bend wrist up and down.
- Turtle to Bird Stretch: Flow.

“To the Beat” Zumba class

Materials needed: Speaker.

Total class time: About 30 min.

Warm up (1 round)

- 30 sec: Deep Breathes: Inhale arms above head, exhale arms near side.
- 30 sec: Arm Flow: Arms up, out to a T, straight out in front, then down by side.
- 30 sec: Torso Flow: Single arm overhead and lean to opposite side, R and L, then twist torso to R side then L side.
- 5 min: Social Interaction: String of Dance Moves: Instructor provides first move, then a participant provides the second move, everyone performs 1st and 2nd move then another participant provides the 3rd move; this continues until either the participants forget the moves or time is up.

Workout (1 round, Rest 1 min after each song)

- 5 min: Cupid shuffle: Mainly with arms doing the motions and wheeling chair to face different directions.
- 5 min: “Whatever it takes” by Imagine Dragons: Box to the beat (variations of jab, hook, uppercut).
- 3.5 min: "Bring Sally Up” song: Arms go over head when "sally up" is played and arms go out to a T when "sally down” is played.
- 5 min: YMCA song.

Cool down (2 rounds, 10 sec)

- Forearm Stretch: Hands at heart center in prayer position with fingers pointing up, then switch for fingers pointing down.

- Shoulder Stretch: Arm across body, R then L.
- Triceps Stretch: Arm behind head, hold, R then L.
- Turtle to Bird Stretch: Flow.
- Breathe with Arm Flow: Inhale arms come up, exhale arms come down, flow.

Aquatic

Materials Needed: Pool, paddle boards, multiple helpers, foam weights. Some form of trunk support is recommended for support, stability, and safety (i.e., pool noodle(s), life jacket, blue waist flotation device.)

Notes: Participant may stand near edge of pool if increased support is needed.

Total class time: About 30-35 min.

Warm up (1 round)

- 30 sec: Deep breaths: Inhale arms go up, exhale arms down by side.
- 1 min: Anterior opening: Float with helper or potential board/noodle under back.
- 1 min: Body lengthening: Glide across the water by pushing off the side of the pool with legs, either with the help from a helper or an additional flotation device. Most likely participants will need some form of help for trunk support.

Workout (1 round, Rest 1 min after each exercise)

- 1 min: Lower body: Kick with board underneath body.
- 1 min: Upper body: Float on back, try slow snow angels.
- 10 min: Social Interaction: Marco Polo: One participant is “Polo” and chooses a stationary place in the pool, the other participants will move around the pool with a helper moving them; the participants clearly state directions (i.e., “move forward 3 strokes”) to the helper that is moving them. Participants who are trying to find “Polo” have their eyes closed. This activity challenges the participants executive functioning skills and self-advocacy skills. Participants may use life jackets for safety and added support.

- 8 min: Lower Body Game: Race against Time: Participants in a supine position with foam weights under armpits; participants take turns 'racing against the clock'. Everyone has 1.5 minutes to get from point A to point B; in order to make this game achievable the instructor may need to pause the clock if the individual is struggling to make it to point B in time. Once the individual is close to point B, the instructor can start the clock again. This style of game takes away the competition between the individuals and rather focuses on competition against the clock intending to create a supportive environment as well as limiting muscle exacerbation that may arise if the individuals compete against each other.

Cool down (2 rounds, 10 sec)

- Deep Breathes: Either in floating supine position or upright.
- Back stretch: Hands together out front, head down, rounded back.
- Chest stretch: Hands together behind low back, broad chest.
- Calf stretch: Utilize steps or ramp for calf stretch.

YMCA Dance

Basketball Court

Materials needed: soft balls, cones, themed items for participants to collect.

Total class time: About 30-35 min.

Warm up (2 rounds, 30 sec)

- Deep breaths: Inhale arms up, exhale arms down by side.
- Side stretch: Single arm reaches overhead, continuous flow.
- Torso Twist: Twists to each side, slow and controlled.

Workout (1 round, Rest 1 min after exercise)

- 5 min: Coordination Game: Chest press push soft ball to hit cones (like bowling), try to hit as many cones as you can.
- 5 min: Cardio Burst/ Social Interaction: Race to Collect: Have the participants race to collect all needed theme items (i.e., hamburger construction, all 'blue items', all needed equipment for a specific sport). OR Instructor has a variety of things out, participants need to make something out of at least three things and have a name for it.
- 5 min: Arm burn: Sally up- arms overhead for sally up, arms out to a T for sally down; second round have arms in front of body to work different shoulder muscles.

Cool down (2 rounds, 10 sec hold)

- Side Stretch: Single arm overhead stretch and lean, R then L.
- Shoulder Stretch: Arm across body, R then L.
- Triceps Stretch: Arm behind head.
- Neck Stretch: Arm straight out by side while leaning neck to opposite side, R then L.
- Turtle to Bird Stretch: Flow.

YMCA dance

Chair Yoga

Materials needed: Mats.

Notes: May require parent or extra helpers to assist with stretching at end of session.

Total class time: About 30-35 min.

Warm up (1 round)

- 30 sec: Deep breaths: Inhale arms go up, exhale arms come down by sides.
- 1 min: Social Interaction: Forearm stretch: 2 Questions, hands at heart center, fingers facing up for yes and fingers facing down for no. OR 'Would you Rather' questions- fingers facing up for 1st option, fingers facing down for 2nd option.
- 30 sec: Side Stretch: Single Arm overhead stretch, flow.
- 30 sec: Turtle to Bird: Flow.

Workout (30 sec work, 30 sec rest, 3 rounds, Rest 1 min after each 1st and 2nd round)

- Seated cat/cow pose: Participant in chair with hands on knees, rounds back with chin down and shoulders protracted for cat, arches back with chest open and shoulders retracted for cow.
- Seated Jumping Jacks: Just arms if needed or just legs.
- Seated Cactus: Arms in goal post position and legs out, arms come into midline while maintaining 90 degrees at shoulder, then back out to goal post position, flow.
- Leaning Tower of Pisa: Lean forward and return to middle, repeat with leaning to the R and L side slowly and controlled.
- Torso Twist: Slow and controlled, R and L, flow.

Cool down ~Transfer to mat~ (1 round, 30 sec R side, 30 sec L side)

- Breathe Deeply: Lay supine on mat.

- Hamstring stretch: Lay supine with leg straight up in the air, assist may be needed.
- Calf and Ankle Stretch: Lay flat on mat and point toes up and hold, point toes down and hold (may need assist for stretching ankle).
- Knee Stretch: Legs flat on the floor, gently bend knee so feet are closer to torso then extend feet back out, flow.
- Shoulder stretch: Arm across body.

YMCA dance

Module 2: CP

Note: There are different types of CP, however, this class is geared towards mild or moderate spastic paraplegic, spastic hemiplegic, and ataxic individuals who are still able to walk. For individuals with hemiplegia CP, it is important to know their weaker side as they may need more support for that side during activities, i.e., if their right side is weaker, the individual may need lighter weights for their right side or may need to hold onto a chair with their right-hand during activities. For individuals with paraplegic CP, their legs will most likely be weaker than their arms so they may need to sit during upper body exercises.

Note: Have a chair nearby if the participant needs a rest from standing during exercises.

If the exercises seem to be too hard for the participant modify the exercise or change it completely so the participant has some sense of accomplishment, success, and confidence.

For exercises that involve weights, utilize light-medium weights when first working with the participant, slowly progress in weight over weeks for progressive resistance.

Note: Many individuals with Cerebral Palsy have visual deficits (Dufresne, Dagenais, & Shevell, 2014). If a participant is struggling to participate in an activity with a ball or object, try incorporating bigger and brighter objects.

Balance/ Postural

Materials: Paper, trash can, step up, balls, basket/target, soft mat, boxing bag, boxing gloves.

Total class time: about 30 min.

Warm up (1 round)

- 30 sec: Marching: Arm moves up with opposite leg. If an individual is unsteady, have them stand next to a wall for increased stability or hold on to a chair while moving their legs.
- 30 sec: Side leans: Lift both arms (or one) overhead and lean side to side slowly and controlled. If an individual is unsteady, have them stand next to the wall or a chair.
- 5 min: Social Interaction: Trash-Ket ball: Utilize crumpled paper and have the participants throw crumpled paper into a trash can. Have participants stand close, then slowly move to more challenging distances. Option to make this into a game like Horse.

Workout (1 round)

- 1 min: Step-ups and step-over: Participant stands close to the wall with step flushed to the wall, participant steps on a step then steps down from the step, participant then turns around to complete again.
- 5 min: Boxing with lateral movements: Instructor calls out a sequence of moves to complete (jab, jab, hook, hook, uppercut, uppercut). Utilize gloves and punching bag.
- 1 min: Sidestep: Step is flushed perpendicular with the wall; participant faces wall with legs straddling the step. One foot at a time comes up and towards midline.
- 10 min: Balance game: Participant moves balls from ground level at point A to desired target at point B. Participant must walk across difficult terrain (like a soft mat). To grade

down, participant walks on flat surface rather than different terrain. Option to make this into a relay race.

Cool down (1 round, 20 sec)

- Seated hamstring stretch: Participant sits on mat with legs straight out in front of body and reach for toes. Repeat with legs spread wide.
- Torso twist on mat: Participant with legs straight out in front and bent R knee, participant raises arms above head then twist while lowering down arms towards the R. Repeat with L side.
- Butterfly stretch: Participant sits up straight on mat with bent knees and feet touching, participant leans forward.
- Back stretch: In standing position, participant leans forward with arms stretched straight out and hands clasped together, participant then clasps hands behind lower back and lifts chest.

YMCA dance

Upper Body

Materials needed: Ball, Hula-hoop.

Total class time: about 30 minutes.

Warm up (2 rounds, 20 sec)

- Deep breaths: Inhale arms go up; exhale arms go down.
- Arm Flow:
 - Arms out to a T- arms touch shoulders- arms out to a T- arms down by side.
 - Arms in front- arms down by side.
 - Arms above head- arms down by side.
 - Shoulder shrugs: Shoulders come up towards ears then down towards the ground.

Workout (2 rounds)

- 30 sec: Overhead press: Arms straight up then come down to a football post position; use light to medium weights. If participant is unsteady, have them stand with their backs against the wall.
- 2 min: Boxing: Instructor calls out a variation of jab, hook, uppercut; to increase executive functioning skills, instructor gives a number to each punch, then calls out different number variations and the participant must complete the variation. If participant is unsteady, participant may need to sit in chair while boxing.
- 30 sec: Bicep curls: Both arms at a time, use light to medium weights. If participant needs increased stability, have them sit in chair, optional to do one arm at a time.
- 2 min: Boxing: Variation of jab, hook, uppercut.

- 5 min: Social Interaction: Hot potato: Participants stand in circle and throw a light medicine ball in a circle until music stops, the person who has the medicine ball is out. For the second round, utilize a balloon. Some participants may need to sit if they cannot maintain a dynamic standing position for an extended time.

Cool down (1 round, 20 sec)

- Back Stretch: Lean forward then lean back, flow.
- Shoulder stretch: Arm across chest and hold, R then L.
- Triceps stretch: Arm behind head, hold, R then L.
- Turtle to bird stretch: Flow.

YMCA dance

Coordination

Materials needed: Pool noodles, mats, 10 balls, basket/target.

Total class time: about 30 minutes.

Warm up (2 rounds)

- 10 sec: Deep breaths: Inhale arms go up; exhale arms go down.
- 30 sec: Knee taps: R hand reaches above head then comes down to touch lifted L knee; repeat with other side. If participant is unsteady, have participant stand next to the wall to complete, option to not lift leg off ground.
- 40 sec: Arm Flow:
 - Arms up to sky and lean to the right and left, arms down by side.
 - Single arm across body while same side footsteps out, repeat other side.

Workout (1 round)

- 10 min: Coordination game: Obstacle course: Participants take turns racing against the clock (instructor says, “you have 2 min to complete course,” instructor pauses clock if participant needs more time for sense of accomplishment and confidence). First obstacle participant steps over pool noodles, second obstacle participant crawls on hands and knees over mats, third obstacle participant throws 5 balls into a basket/target. Option to have obstacle course next to wall for help with stability.
- 10 min: Social Interaction: Delayed Simon Says: 1st round, instructor calls out the following exercises for the participants to execute, the second round the participants take turns being the leader calling out either the same exercises or new ones of their choice.

- Out-Finger-Out-Head: Arms straight out to a T, then come to midline to touch fingertips, then back out to a T, then come back to midline to touch back of head (can also pass ball in front and behind head for variation).
- Scissor hands and feet: Arms straight out in front and feet hip width apart, L arm goes across R arm while left foot goes behind R foot, step back to center and complete with opposite side. If participant is unsteady, option to just do scissor hands.
- Cross body row: Arm goes all the way across body while same side leg steps out, arm then pulls in towards midline; complete opposite side.
- X-Exercise: Arms begins overhead then comes down to touch raised opposite knee, arm goes back up overhead then comes down to touch raised opposite foot. Complete R and L side. Option for participate to hold on to chair or stand near wall.

Cool Down (1 round, 20 sec)

- Back stretch: Lean forward and backwards in chair.
- Shoulder stretch: Arm across body and hold with opposite hand a little above elbow.
- Side stretch: Arm overhead and lean towards opposite side.
- Turtle to bird stretch: Arms down by side at 45-degree angle, chest up, chin up, back extended, arms come in towards body across chest, back rounded, chin down.

YMCA Dance

Exercise Ball

Materials needed: Bender ball, exercise balls.

Total class time: about 30 minutes.

Warm up (1 round)

- Social Interaction (ask 4 questions): Would you rather questions, instructor calls out a ‘would you rather question’ and instructs participants to go to either the right side of the room for the first option and left side of room for second option. Participant performs the warm-up that goes with the would you rather answer:
 - 1st option: 2 Deep breathes, inhale arms reach up, exhale arms down by side.
 - 2nd option: 4 Arm circles forwards and 4 backwards.
- 30 sec: Side leans: One arm reaches towards ceiling and leans towards opposite side.
- 30 sec: Rear end Kicks: In standing position, participant brings R foot to R gluteus maximus, repeat opposite side. Participant may need increased stability by use of wall or chair.

Workout ~Transfer to exercise ball~ (1 round)

- 5 min: YMCA dance on ball: When there are “lulls” in the song, have the participant bounce on the ball.
- 7 min: Social Core Game: Participant sits up straight on exercise ball then leans side to side while “drumming” on the side of the exercise ball. Instructor leads the drumming, then have participants make up their own beats for everyone else to follow. Song suggestion= “Livin’ On A Prayer.” Option for participant to stand or perform tall kneeling and drum on ball while exercise ball rests on stand.

- 2 min: Hamstring curls: In pronation on the ball, participant bends one knee at a time while maintaining balance on ball and stabilizing themselves with their hands on the floor. Participant may need to hang on to a stationary object or may need help from instructor for stabilization.
- 3 min: Arm catch: Participant on ball in pronation, push off feet to roll forward and catch themselves with their arms. For safety, do exercise on mat. Instructor may need to hold the participant's ankles for stability.

Cool down (1 round, 20 sec)

- Deep Breathes: Hold bender ball with both hands and breathe in as ball comes up over head, exhale as ball comes back down, flow.
- Shoulder Stretch: Arm across body stretch, hold.
- Triceps stretch: Arm behind head.
- Hamstring stretch: Sit on mat with both legs straight out, bend at hips and reach for toes.
- Turtle to Bird Stretch: Flow.

“To the Beat” Zumba class

Materials needed: Speaker.

Total class time: about 30–35 minutes.

Warm up (1 round)

- Deep breathes: Inhale arms above head, exhale arms near side.
- 30 sec: Arm flow: Arms up, out to a T, straight out in front, then down by side.
- 30 sec: Torso flow: Arms in prayer position and twist to R and L side from waist.

Participant may need to stand next to wall for extra support.

- 5 min: Social Interaction: String of dance moves: Instructor provides first move, then a participant provides the second move, everyone performs 1st and 2nd move then another participant provides the 3rd move; this continues until either the participants forget the moves or time is up.

Workout (1 round)

- 5 min: Cupid shuffle: To make it more challenging, participants can shuffle across room during ‘to the left’ or ‘to the right.’ Participants can also do squats during ‘kick.’
- 5 min: Box to the beat: “Whatever it takes” by Imagine Dragons (variations of jab, hook, uppercut).
- 5 min: “Bring Sally Up” song: Bosu ball flushed with wall. Participant side steps on Bosu ball for ‘sally up’ and steps off Bosu ball for ‘sally down,’ Switch half way through song. To grade exercise down, have participant step on firm step next to the wall. Option for sit-to-stand for sally up and sally down.
- 5 min: YMCA song

Cool down (1 round, 20 sec)

- Forearm Stretch: Hands at heart center in prayer position with fingers pointing up, then switch for fingers pointing down.
- Shoulder Stretch: Arm across body, R then L.
- Triceps Stretch: Arm behind head, hold, R then L.
- Hamstring stretch: Participants feet out wide and lean down touch floor or participant sits on floor with legs out straight to reach for toes.
- Quadricep stretch: In standing position, participant holds R ankle with R hand behind hip, for increased stability participant can hold on to wall.

Aquatic

Materials Needed: Pool, paddle boards, multiple helpers, foam weights, life jackets.

Notes: Stand near edge of pool if increased support is needed

Total class time: about 30 minutes.

Warm up (1 round)

- 30 sec: Deep breaths: Participant holds on to noodle with hands shoulder width apart, Inhale bring noodle above head, exhale bring noodle to water height.
- 2 min: Upper Body Beat: Drum on water, clap above head, clap below water, to the beat of a song (i.e., “Dynamite”) Grade up by using weights in hands.
- 1 min: Kicks in Supination: Participant with noodle under armpits kicks from middle of the pool to the side of the pool.
- 1 min: Kicks at side of pool: Participant hang on to the side of the pool while they kick as hard or as soft as they can.

Workout (1 round)

- 10 min: Social Interaction: Marco Polo: One participant is “Polo” and chooses a stationary place in the pool, the other participants will move around the pool and are only allowed to say ‘Marco’ 2 times since ‘Polo’ will be stationary. Option to have helper move them; the participants clearly state directions (i.e., “move forward 3 strokes”) to the helper that is moving them. Participants who are trying to find “Polo” have their eyes closed. This activity with the helper challenges the participants executive functioning skills and self-advocacy skills. If Marco Polo is too challenging, have the participants dive for toys/sticks on either the ramp into the pool (easier) or in the middle of the pool (harder).

- 1 min: Lower Body: Kick with board underneath body. Make it fun by seeing who can make the biggest splash, then the smallest splash during the exercise.
- 5 min: Lower Body Game: Race against time or each other: Participants in a supine position with foam weights (or life jacket) under armpits; participants take turns ‘racing against the clock’. Everyone has 1.5 minutes to get from point A to point B; in order to make this game achievable the instructor may need to pause the clock if the individual is struggling to make it to point B in time. Once the individual is close to point B, the instructor can start the clock again. Option to make this into a competitive game.
- 1 min: Arm and core: Participant holds noodle on both ends to create a C shape around their back, participant lifts feet off ground so that body is floating in slightly upright position, participant performs triceps dips by pushing noodle up and down. Option to have participant stand rather than float.

Cool down (1 round, 20 sec)

- Deep Breathes: Either in floating supine position or upright.
- Back stretch: Hands clasp together out front, head down, rounded back, then hands clasp together behind hips chest lifted.
- Shoulder stretch: Arm across body and opposite hand holds just above elbow.
- Triceps stretch: Arm behind head and gently push down elbow with opposite hand.
- Hamstring stretch: R hand holds R ankle.
- Calf stretch: Utilize steps or ramp for calf stretch.

YMCA Dance

Basketball Arena

Materials needed: Basket/ target, basketball, cones, badminton (or pickleball) materials.

Total class time: about 30-35 minutes.

Warm up (2 rounds, 30 sec)

- Deep breaths: Inhale arms up, exhale arms down by side.
- Side stretch: Single arm reaches overhead, continuous flow.
- Core twist: Twist to each side, slow and controlled.
- Arm swings: Arms swing out to a T then swing in across body.

Workout (1 round)

- 10 min: Basketball activity:
 - Moving basket: Participants stay stationary while the instructor moves a basket (laundry basket or big trashcan) around the room on different surface levels. The participants then shoot their ball. To grade down, balled up socks can be used for a ball.
 - Dribble Race: Participants start at the beginning cone with a basket of balls. Participants must dribble one ball at a time, using the *drop-catch-step* method, to the end cone and basket then walk back to the beginning cone to repeat the process until all balls are in the end basket. Option to use of a wheelchair if there is obvious fatigue or difficulty. Option to use lighter, bouncier ball like a kickball to grade the activity down.
- 10 min: Social interaction: Badminton: Start with two people on opposite sides of the net from one another with one individual throwing the birdie to the other. To grade up, have participant aim for designated target OR have participants hit birdie back and forth. To

grade down, attach birdie to stable pole by use of rope and have individual practice making contact. Option to use a beachball instead of birdie since a beachball is bigger and brighter. Option to play pickleball.

Cool down (1 round, 20 sec)

- Side Stretch: Single arm overhead stretch and lean, R then L.
- Shoulder Stretch: Arm across body, R then L.
- Triceps Stretch: Arm behind head.
- Neck Stretch: Arm straight out by side while leaning neck to opposite side, R then L.
- Turtle to Bird Stretch: Flow.

YMCA dance

Strength/ Stretch Yoga

Materials needed: Mats.

Notes: May require parent or extra helpers to assist with stretching at end of session.

Total class time: about 30-35 minutes.

Warm up (2 rounds, 30 sec)

- Deep breaths: Inhale arms go up, exhale arms come down by side.
- Social Interaction: Forearm stretch: 2 questions, hands at heart center, fingers facing up for yes and fingers facing down for no. OR ‘Would you Rather’ questions- fingers facing up for 1st option, fingers facing down for 2nd option.
- Side Stretch: Single Arm overhead stretch, flow.
- Turtle to Bird: Flow

Workout ~Transfer to yoga mat~ (2 rounds, 30 sec rest)

- 30 sec: Downward dog to upward dog: Participant starts in downward dog position then transitions to upwards dog position. To grade down participant can do activity standing up against the wall.
- 30 sec: Super-mans: Participant starts in pronation on the mat and builds up to full superman, first participant raises both arms and chest off the ground, then just raises legs off ground, finally participant raises both upper body and lower body off the mat at the same time. To grade up, participants can complete many other versions of superman (like Ironman, batman, etc.).
- 30 sec: Reverse hollow hold: Participant starts in flat pronation on mat then bends back to grab ankles. Instructor encourages participant to hold on to ankles while pushing ankles away from body. Option to attempt to rock their body forwards and backwards.

- 30 sec: Calf raises: Participant performs calf raises while holding on to the wall for increased stability. Have participant try to perform calf raises without using both hands on the wall. Option to make a game by passing a balloon to them while they are lifted in a calf raise or see how many times they can keep the balloon up in the air.
- 3 min: Animal crawls Game: Participant perform crab walk, bear crawl, frog jumps, bunny hop, elephant walk. To make this a game, either make it into a race or have the participants call out animal walks to perform.

Cool down (1 round, 20 sec)

- Cat/cow pose: Participant starts on hands and knees on mat then moves trunk into cat and cow pose.
- Butterfly stretch: Participant leans forward till they feel a stretch in their legs.
- Hamstring stretch: Participant is supine with leg straight up in the air, assist may be needed. Option to sit flat on mat and lean forward towards toes.
- Calf and Ankle Stretch: Participant is flat on mat with toes pointed up, hold, point toes down and hold (may need assist for stretching ankle).
- Childs pose: Instructor encourages participant to relax back muscles and stretch arms out in front.

YMCA dance

Module 1 and 2 Picture Document Links

Module 1

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Module 2

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