

AN OCCUPATIONAL THERAPIST'S GUIDE TO AN ADAPTIVE YOGA  
PROGRAM: A COMMUNITY BASED APPROACH FOR ADULTS WITH  
INTELLECTUAL DISABILITIES

A thesis submitted to the faculty at Stanbridge University in partial fulfillment of the  
requirements for the degrees of Master of Science in Occupational Therapy

by

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## Certification of Approval

I certify that I have read An Occupational Therapist's Guide to an Adaptive Yoga Program: A Community Based Approach for Adults with Intellectual Disabilities by Patricia Cruz, Tamarah Michael, Ana-Karina Nguyen, and Nicholas Hoang, and in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy at Stanbridge University.

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## Abstract

We created a training manual outlining an occupational-therapy based adaptive yoga program that focuses on instructor and caregiver education for adults with intellectual disabilities (ID). Yoga is known to have multiple benefits for those who engage in its practice. However, the population of study, adults with ID (aged 18-40), is an underserved community that has limited access to meaningful physical activities such as traditional yoga classes. As a result, this population is at risk for negative health outcomes due to their sedentary lifestyle. Because of these barriers, there is not enough literature investigating the physical and cognitive benefits of yoga for individuals with ID. Occupational therapists are better suited than other health care professionals to provide insight into adaptive program development as they are equipped with the knowledge to help the individual return to their favored occupations. In addition, research has also shown that by incorporating skilled staff training, overall outcomes have improved for their clients with ID. This thesis project aims to close the gap and develop an adaptive yoga program that is holistic in its approach to improving health outcomes for adults with ID, such as cognition, flexibility, endurance, and quality of life. By combining the foundational knowledge of occupational therapy with the principles of yoga, this program will make yoga accessible for adults with ID. The manual emphasizes instructor and caregiver training to increase the sustainability and competency of program clients in their home environment and daily lives. Results of the effectiveness of this program are not yet confirmed; however, plans for program implementation are outlined in the manual.

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An Occupational Therapy Based Vinyasa Yoga Manual: Teaching Adults with  
Intellectual Disabilities

Individuals with intellectual disabilities (ID) constitute approximately 6.5 million people in the United States (CDC, 2019). ID are defined as limitations in intellectual functioning and adaptive behavior, specifically social, practical, and conceptual skills. Physical and social well-being are the primarily affected areas, resulting in overall poorer health outcomes compared to the general population (Eggers, Pagel, & Ausderau, 2018). These health concerns include an increased risk of obesity, diabetes, heart disease, and mental health conditions (Dorrance, Usdin, & John, 2018). Limited access to community-based recreational activities and fitness facilities can also contribute to these disparities as many programs only take into account the physical ability of an individual rather than the intellectual functioning of their clientele. Because of this, many individuals with ID will lead sedentary lifestyles due to the insufficient physical training opportunities catered to their needs. This becomes a matter of occupational justice, which means the right for all individuals to engage in activities that are necessary and meaningful. Thus, by providing resources unique to this population, individuals with ID will finally be given opportunities to explore active occupations.

Motivating individuals to engage with activities and resources that promote good health is a crucial to combating prolonged inactivity and improving overall health outcomes for individuals with ID. One health promotion strategy is to develop community-based programs as they are the easiest and most cost-effective way to reach a large audience. Such programs can focus on enhancing participation in physical activity, facilitating social interactions, and providing adequate resources for clients and their



families. There is strong evidence that community-based programs have a positive effect on health-related outcomes for adults with ID, specifically when incorporating physical activity interventions such as enhancing strength and addressing body mass index (Eggers et al., 2018). The focus of a community-based yoga program is to promote and maintain a healthy lifestyle that will increase overall independence for people with ID. With proper support, more community-based programs can make changes that will accommodate this population and open facilities that are inclusive and accessible to people of varying intellectual abilities. In turn, individuals with ID will become more involved in health-promoting activities, resulting in an increased prioritization of their health and quality of life.

Occupational therapy (OT) can play a role in the success of these programs. OT utilizes evidence-based practice and meaningful activities to address areas that bring independence and fulfillment to people's daily lives. In community-based settings, occupational therapists (OTs) can focus on promoting participation and socialization amongst members, providing education for staff and caregivers, and implementing interventions focused on enhancing overall well-being and quality of life. OTs understand how to adapt activities appropriately to the skill level of a client and provide a *just right* challenge for them to grow in their abilities. Thus, OTs are better suited than other health care professionals to provide insight into adaptive program development as they are equipped with the knowledge to help the individual return to their favored occupations.

A well-designed adaptive community-based program must incorporate activities that can easily accommodate the needs of varying abilities. Yoga is a physical activity that can be adapted to fit the needs and skillset of the individual. This activity provides

gentle movement and stretching but can increase in complexity and strength as needed. There is evidence citing the physical and cognitive benefits yoga brings to the body, especially for individuals who have limited mobility, balance, and strength (Yoga Home, n.d.). Yoga can also be completed with assistive aids such as yoga blocks, other props, or in a chair to supplement difficulties with posture and execution (Yoga Home, n.d.). Thus, an adaptive yoga program would be the most appropriate for individuals with ID.

An adaptive yoga program would provide individualized support from volunteers and staff members. In addition, resources and education should be provided to caregivers so that the progress made in the program can carry over in the home setting. However, there is a discrepancy across adaptive community programs in terms of the formalized training given to both caregivers and staff members; this can compromise the effectiveness and safety of these programs. Thus, OTs are an instrumental component to the success of these programs as they are knowledgeable and competent in facilitating this type of education. Good quality training will ensure that participants will be able to maximize the benefits of an adaptive yoga program. This thesis project addresses the needs of an underserved population by creating an OT based community yoga program that will provide individualized training catered to their caregivers and instructors. By including these adaptations, we hope to improve overall health outcomes for clients with ID, and in doing so, advocate for their occupational justice. In addition, our project will further contribute to OT intervention literature, specifically promoting function and wellness within a community-based setting.

### **Literature Review**

Yoga has been shown to have benefits to one's endurance, flexibility, quality of life, and cognition. It has also been found to decrease anxiety. While studies have shown the benefits of yoga, what is excluded from those studies are young adults with ID. Most articles have documented results on children, adolescents, and older adults, but the largest gap is shown in the young adult category. Because there is limited research done on yoga for those with ID, this literature review examines the benefits of yoga for this underserved population. Our hope is to demonstrate that studies on yoga can be also applicable to young adults who have ID.

### **Intellectual Disability and Obesity**

Obesity can lead to numerous health conditions, such as high blood pressure, type 2 diabetes, coronary heart disease, and stroke. Hsieh, Rimmer, and Heller (2014) found that adults with ID have a higher risk of developing obesity, with a prevalence of 38.3%, when compared to a 28% prevalence in individuals without ID. Hsieh et al. (2014) discuss non-modifiable factors, such as gender, and modifiable factors, such as medication and sedentary lifestyles, that are associated with these higher rates of obesity. Although the study did not explain why or how gender impacts obesity, females were found to have a higher rate of obesity than men, with a prevalence of 43.2% in comparison to 34.3% (Hsieh et al., 2014). Medication was also an associated factor in obesity as 45% of individuals in the study were taking medications for mood regulation, seizures, diabetes, and blood pressure, all of which are associated with weight gain. Lastly, living a sedentary lifestyle and bad nutrition also contribute to the prevalence of obesity in individuals with ID. Those with less involvement in physical activity,

increased time spent watching television, and who consume one to two cans of soda on a daily basis were found to have higher rates of obesity (Hsieh et al., 2014). Gawlick, Zwierzchowska, Rosolek, Celebanska and Moczek (2016) addressed the prevalence of obesity in individuals aged 20–50 who have moderate and severe ID in Poland. Within the population of individuals without ID in Poland, obesity was found in 16% of women and in 17% of men. Obesity was found to be a common problem among individuals with ID as it was found in 30% of women and in 19.4% of men. Due to the higher prevalence of obesity within the ID population, it is important that individuals with special needs and their families are educated about participating in physical activities such as yoga, to positively improve their health outcomes and well-being.

### **Physical Benefits of Yoga**

Yoga involves different physical poses, breath work, and mindfulness techniques that support improved health and weight loss. Ross, Brooks, Touchton-Leonard and Wallen (2016) conducted a qualitative study addressing the weight loss experience of women between the ages of 35–67 who had participated in yoga. Semi-structured interviews were used to identify physical changes that resulted from practicing yoga (Ross et al., 2016). They found 88% of participants whose body mass index (BMI) was within the normal range, 18.5 to 24.99, and 27% of those whose BMI was considered overweight, 25 to 29.9, all reported unintentional weight loss (Ross et al., 2016). Weight loss ranged from 4 to 70 pounds with an average loss of 26 pounds (Ross et al., 2016). 60% of individuals considered the yoga community and culture as a reason for their weight loss since their yoga instructors served as role models and they felt a sense of social support (Ross et al., 2016). Participants reported that by shifting their focus

towards health—as opposed to losing weight—they were able to lose weight, gain more muscle, increase muscle tone, and experience changes in their metabolism (Ross et al., 2016). The physical benefits connected to practicing yoga demonstrate its efficacy as a physical activity that can be used to improve health.

Yoga has been found to improve muscular strength, cardiovascular endurance, and many other aspects of physical well-being. However, there are many yoga styles such as Bikram, Yin, and Hatha. Ward, McCluney, and Bosch (2013) have suggested that Vinyasa yoga leads to cardiovascular benefits. They found that first time yoga participants had an average heart rate of 107 beats per minute, suggesting that Vinyasa yoga is considered a light aerobic exercise. In contrast, at least 10 out of the 38 participants exhibited moderate intensity for the exercise. This implies that yoga exercises can cause variability in heart rate depending on an individual's experience with yoga and the lifestyle of each participant. Active lifestyle participants had heart rates that were lower than the sedentary lifestyle participants, by 18 beats per minute. In Ward et al.'s study (2013), participants with a sedentary lifestyle reported having higher heart rate compared to those who were involved with a physical activity that is a part of their daily life. In comparison with Bikram yoga, a very intensive yoga style involving a heated environment and constant movement, the same participants in this study would have an average heart rate of 168 beats per minute according to Miranda-Hurtado, Valladares, Eblen-Zajjur, and Rodriguez-Fernandez (2019). The increase in heart rate associated with Bikram yoga contrasts with Vinyasa's less intense, slower paced movements, which do not lead to a similar increase in heart rate. Although the study did not concretely conclude the benefits of Vinyasa yoga, it did suggest that individuals who have never practiced

yoga could benefit from this activity because it provides an aerobic response to the participants in the study. Ward et al. (2013) discussed that Vinyasa yoga could be used for individuals who have a sedentary lifestyle and are looking to incorporate physical activity in their daily life.

Chair yoga may be an alternative form of yoga for those that need more modification. This form of yoga has also shown improvements in physical fitness in individuals with psychiatric diagnoses, as Ikai et al. (2017) showed with their 12-week single blind randomized controlled study with inpatient psychiatric patients. One group received training in chair yoga and the other half participated in treatment as usual. The intervention group completed a total of 24, 20-minute sessions and were assessed 6 weeks after the completion of the intervention. Along with the yoga instructor, two OTs were there to support the facilitation of the chair yoga instruction. The study found the intervention group had a high completion rate, which shows that this is feasible for adults with cognitive deficits. Furthermore, their improvements in flexibility and muscle strength were still present at the six week follow up. There are two limitations to this study, one being the small sample size of only 56 participants and it only being a single blind study. This study is relevant to this project because even after adaptations were made for safety, the program still produced improvements in physical fitness among the participants.

### **Cognitive Benefits of Yoga**

Yoga and other types of physical activity have been used as a supplemental intervention for all kinds of diagnoses. However, something that has not often been looked at is how yoga can improve cognition. Brunner, Abramovitch and Etherton (2017)

assessed the impact of yoga on working memory maintenance, manipulation, and attentive mindfulness on individuals 18 years of age and older. Although the study did not exclude participants with ID, individuals were not screened for neuropsychiatric conditions or identified as having cognitive deficits, and the exclusion criteria included physical conditions that could interfere with participation in the program. In their study, participants selected either one 60-minute yoga session per week for 6 weeks, or two 60-minute yoga sessions per week for 3 weeks. The study found that completing six sessions of 60-minute yoga is associated with improving working memory and mindfulness (Brunner et al., 2017). Bhatia et al. (2017) also found that yoga has positive benefits on cognition. This study was meant to assess if yoga training or physical exercise training would improve cognitive function of adults with schizophrenia. The major outcome measured was the patients' improvement in speed index of attention which is the individual's ability to comprehend visual input and complete a task with that information. Both activities showed enhancement in several cognitive functions, but the yoga group had greater improvements in speed index of attention, working memory, and verbal acquisition. In addition to the variety of improvements achieved, there was retention and even further progress in some of the outcomes at the 3-month and 6-month assessments (Bhatia et al., 2017). Lin et al. (2015) completed a study comparing aerobic exercise and yoga on the potential cognitive improvements that could be made in women diagnosed with early psychosis. This study also found similar progress in the areas of verbal acquisition and attention as a result of yoga exercises. There were also additional enhancements made in working memory when using yoga as an adjunctive therapy. This yoga program consisted of a 12-week program for one hour, three times a week, but the

study by Bhatia et al. (2017) consisted of only a 21-day training period and still saw similar improvements with a shorter training period.

Yoga has also shown to be beneficial in enhancing task performance on activities that require both physical and cognitive demands. Subramaniam and Bhatt (2017) investigated how yoga affects cognitive motor interference. This is defined as an interference in mental processing when an individual is trying to complete a cognitive and physical task at the same time. This study utilized balance control tasks to assess stability, motor control, and sensory organization amongst yoga practitioners versus non-yoga practitioners. Each group was measured in various conditions that included single cognitive and motor tasks, as well as dual tasks that involved both kinds of tasks. Results showed that individuals who practiced yoga performed better in all balance tasks across all conditions, cognitive and motor tasks alike, and used fewer cognitive and motor resources than non-yoga practitioners (Subramaniam & Bhatt, 2017). Thus, yoga was shown to reduce cognitive motor interference for maintaining balance control. This implies that a yoga-practitioner will be able to perform better on activities that require both cognitive and physical demands from the individual. Our project hopes to provide these cognitive benefits to adults with ID. These studies are particularly relevant to our study as this population is born with diminished cognitive abilities. By implementing activities that will improve and increase intellectual functioning, our project will address factors that are essential in improving the well-being of those with ID.

### **Improved Quality of Life**

Yoga-based exercises have also been found to improve quality of life. Tulloch, Bombell, Dean and Tiedemann (2018) conducted a systematic review of 12 randomized



control trials that focused on the impact of yoga-based exercise on health-related quality of life (HRQOL) and mental well-being in 60 to 75-year-old adults. The systematic review only incorporated trials that used physical yoga as an intervention, which included Vinyasa yoga (Tulloch et al., 2018). Participants were involved in 45-90 minute yoga sessions 1-3 times a week for 8-24 weeks. To measure effect size, Hedges'  $g$  statistic was used, and effect sizes were categorized as small (0.2), medium (0.5) and large (0.8 or greater). HRQOL had a Hedges'  $g$  score of 0.51, resulting in a medium effect size, and mental well-being scored 0.38, resulting in a small effect size. Ross et al. (2016) conducted a qualitative study to address the psychosocial changes related to participation in yoga in women aged 35–67. The study found that participating in yoga provided individuals with a new mindset regarding their health. Participants self-reported increased mindfulness, focus, mood, emotional stability, reduced stress, and increased self-esteem and self-acceptance. These studies support the idea that physical yoga-based exercises are conducive to enhancing HRQOL and mental well-being in older adults.

One aspect of quality of life that is often overlooked is sleep quality. Rshikesan, Subramanya, and Singh (2017) conducted a randomized controlled trial. This trial included a 14-week yoga program for obese adult men aged 18-60 years old. The aim of the study was to see how performing yoga would affect sleep quality and body composition. The 14-week yoga program was 90 minutes a day for 5 days each week. Overall, they found that the yoga program led to significant improvements in sleep quality and in body composition parameters. The authors discuss the relationship between stress, sleep quality and obesity, and believe that increased stress increases obesity while

decreasing sleep quality. Yoga has been used to help reduce stress in previous studies. Improved stress levels could also lead to increased quality of sleep.

Yoga can be used to help people with disabilities to increase their confidence by improving their quality of life through completing daily tasks. In a study by Nejati, Rajezi Esfahani, Rahmani, Afrookteh, and Hoveida (2016), a yoga program was made for individuals with multiple sclerosis to evaluate quality of life and fatigue. The program used in this study is called the mindfulness-based stress reduction and is done over a course of 8 weeks for 2 hours every session. The goal of this program was to assess how yoga could help individuals cope with life stressors through relaxing the body and learning mindfulness skills. Prior to the study, the 24 participants completed a Multiple Sclerosis Quality of Life questionnaire asking about their quality of life and how motivated they are in their daily activities. The participants were then randomized into two groups, the control which explained the program through a presentation and the experimental in which participants practiced yoga over 8 weeks. The yoga sessions involved participants practicing yoga stretches and breathing exercises that help with mindfulness. At the end of the study the experimental group reported having less fatigue and an overall improved quality of life (Nejati et al., 2016). Although the study showed a difference between having a yoga intervention and a control with participants with multiple sclerosis, there were no larger sample sizes which could have identified outliers. A limitation was that there are many factors in quality of life that do not include mental and physical factors, but factors such as sexual function and emotional problems as well. What the study does well is mention other studies that showed the mindfulness-based

stress program benefiting other similar studies in mindfulness such as Henderson et al.'s study on mindful intervention on breast cancer patients (2012).

### **Reduction in Anxiety**

Stress can lead to symptoms such as anxiety and depression. Adults with autism spectrum disorder experience higher rates of psychological distress and symptoms in comparison to neurotypical people (Lever & Geurts, 2016). Common disorders such as anxiety, mood disorders, and social phobia are especially prevalent in those who are young and or in middle adulthood, approximately referring to people aged 18-45 (Lever & Geurts, 2016). Research has found that yoga and meditative practices can help reduce the severity of these symptoms. In a study done by Lemay, Hoolahan, and Buchanan (2019), a six-week yoga program was implemented to assist college students, aged 19-23, with reducing stress and anxiety. The yoga program occurred once a week for 60 minutes and students completed pre- and post-intervention questionnaires to evaluate their outcomes. Lemay et al. (2019) found that participants scored lower on stress and anxiety while scoring higher on mindfulness after completing the program. The program implemented was a pilot program done to evaluate the feasibility of the study design, and this study suggested that yoga does reduce stress and anxiety. It is important to note Lemay et al. (2019) referenced other researchers that have conducted studies using yoga guided interventions that yielded similar results. Erogul, Singer, McIntyre, and Stefanov (2014) also used college students but had a longer duration, 8 weeks instead of 6 weeks. The study implemented a home-based yoga program using instructional videos for the participants. (Erogul et al., 2014). The results of this study showed that the use of yoga can reduce anxiety, stress, and increase mindfulness. Lemay et al. (2019) reference

Warnecke, Quinn, Ogden, Towle, and Nelson's 2011 study on yoga intervention using audio tapes that had yoga pose instructions. Using the same methodologies as Lemay et al. (2019)—except for the usage of audio to guide the participants step by step—the results of this study indicated that adopting yoga can improve stress and anxiety. The comparison of these studies demonstrates that yoga not only reduces anxiety and stress levels, but it also has other benefits such as mindfulness and a better outlook on stressful events.

In addition to the ways yoga can decrease anxiety, Dhananjai, Sadashiv, Tiwari, Dutt, and Kumar (2013) researched the possible effects of yoga on psychological distress and obesity, and found that yoga decreased anxiety and depression in obese individuals. In the study, there were 272 participants between the ages 20-45, 205 of whom were put in the yoga group, while the other 67 participants were put in an aerobic group. The groups were assigned by the researchers through eligibility screening based on health conditions. The study excluded participants with prior health problems such as cardiac diseases, asthma, and metabolic diseases. The data in the study was measured using the Hamilton Anxiety Rating Scale and Hamilton Scale for depression prior to the study to record a baseline and again after the 6 months. After 30 days, the participants in the yoga group showed improvements, while the aerobic group did not show improvements until day 90. The results showed that anxiety and depression decreased significantly more in the yoga group than in the aerobic exercise group. The study concluded that by treating the psychological component of obesity, obese individuals can improve their well-being by modifying their lifestyle (Dhananjai et al., 2013). The study had a large sample size which was demographically and socioeconomically matched between the two groups.

These factors made the two groups easily comparable because there were no external factors that made the participants different except gender. However, there was not a fair distribution of participants for each group. The yoga group had a larger sample size than the aerobic group which could explain why the data was different at each 30-day mark. The yoga group showed an improvement at a quicker rate than the aerobic group and that could be from the size of the sample. This correlation between psychological distress and obese individuals is important to understand for those at risk for obesity, such as individuals with ID.

Yoga can be used as a tool to improve psychological health. For instance, Maddux, Daukantaitė and Tellhed (2018) focused on measuring the effects of yoga on stress and anxiety among 90 employees of a university who reported moderate-to-high stress. Participants were randomly assigned to 8 or 16 consecutive weeks of power yoga, which is yoga found in gyms or fitness centers, twice a week for an hour. The crossover group that practiced yoga for only 8 weeks and the group that participated in 16 weeks of yoga both demonstrated decreases in anxiety on the Hospital Anxiety and Depression Scale. When compared to the crossover group, the 16-week yoga group showed significant decreases in stress, depression, and anxiety, and significant increases in general psychological health and well-being. It has been shown that participating in yoga can reduce a person's anxiety, thus, through the creation and implementation of an OT based yoga manual, the psychological health and quality of life of participants could be improved.

### **Underserved Population**

Individuals with ID are an underserved population. Many of the studies cited focus on populations other than individuals with ID. Tulloch et al. (2018) focused on the benefits of yoga for the elder demographic, whereas Lemay et al. (2019) studied college students. In addition, many of the samples consisted of healthy adults or adults with a different diagnosis, such as schizophrenia or psychosis (Ward et al., 2013; Bhatia et al., 2017; Lin et al., 2015). With that being said, limited research exists on yoga for those with ID. However, researchers have recently begun to investigate the effects of physical exercise on the well-being of this population. Weterings, Oppewal, and Hilgenkamp (2020) implemented an exercise program for adults with ID and cardiovascular disease (CVD) risk factors, to assess the feasibility of this population to withstand rigorous resistance training. This 24-week program used exercises such as abdominal curls and pushups to collect data on participants' strength, specifically how much weight and repetitions they can carry out for each exercise. These numbers are collected to moderate the progression in exercise intensity from novice to vigorous. The study also analyzed participant dropout rate, attendance, safety, and overall experience. Results concluded that 58% of participants achieved vigorous training intensity by the end of the program, thus indicating that adults with mild to moderate intellectual disability with CVD risk factors are able to endure exercise at vigorous intensity. What made this program unique in its approach was the individualized focus on safe execution, progression, and motivation that caters to the needs of our population of study. Specialized trainers with experience working with this population were also recruited to motivate, correct posture, and ensure safety by adapting exercises as necessary (Weterings et al., 2020). This

program also tried to provide a positive atmosphere, facilitated peer interactions, and gave out medals as reinforcement for program completion. This study highlights the importance of considering specific criteria when providing services to adults with ID. In order for OTs and other practitioners to effectively work with this population, more programs need to be developed that cater the needs of those with ID. Our research project is therefore an important step in developing the tools available for helping those with ID.

The challenge is that the health needs of adults with ID are frequently misunderstood. The majority of individuals do not understand how specialized and individualized programs need to be, because they are not educated about it. This lack of knowledge shows that there is a gap in the research that does not address the needs of adults with ID. To supplement this, Sullivan et al. (2018) drew information from many bodies of knowledge (such as empirical, expert, and experiential) to address what primary care should look like for adults with intellectual and developmental disabilities. The finalized guidelines stressed that approaches should be person-centered and holistic, integrating both the social and medical model of disability (Sullivan et al., 2018). Some of these guidelines include, effective communication for decision making and independence, integrating family members and caregivers, and utilizing an interprofessional health care team (Sullivan et al., 2018). Every intellectual disability is different for every person, so programs need to be specialized or have the means to provide individualized care. By integrating all these factors, our yoga program will address these needs and provide occupational justice for an underserved population.

### **Educating Personnel**

Educating personnel and facilitators is a key aspect to consider when creating an effective yoga program that will increase positive health outcomes and address client needs. Gruber and Poulson (2016) measured the effects of using parent-guided intervention when teaching yoga to children on the autism spectrum. Each pose was demonstrated to the children at a pace that allowed for sufficient observation, prompting, error correction, and performance. Each yoga session was video recorded, and data was collected to record which poses were performed independently, prompted, or incorrectly. Through the use of graduated guidance and positive reinforcement, all participants increased their matching of the yoga response chain. Gruber and Poulson's (2016) study demonstrated the importance of training yoga instructors and facilitators when working with individuals with ID. Educating instructors through a yoga manual will help create a challenge that is *just right* for our client's abilities. This *just right* challenge takes into consideration the complexity of a task and the skillset of the client in order to create a balanced adaptation that will be optimal in facilitating client learning and occupational success.

One way to implement this into practice is by training educators and staff members on how to properly accommodate adults with ID. Staff training programs can be very beneficial in improving overall outcomes. Van der Meer et al. (2017) conducted a systematic review that evaluated the effectiveness of training direct care staff in providing communication interventions for adults with an intellectual disability aged between 18-74. The articles analyzed found that direct-care staff can be successfully supported, via various staff training programs, to provide seemingly effective



communication interventions to this population. Other components such as incorporating a professional into the training process and providing opportunities for practice/feedback throughout staff training will also yield positive outcomes in the effectiveness of the intervention. However, many of these studies had only suggestive evidence rather than conclusive evidence to support these results. In addition, most of the staff lacked professional qualifications or have had limited training/experience in the field, suggesting that more explicit training should be done in order for the intervention to be more effective. Nonetheless, training direct care staff has been proven to be beneficial for adults with ID, specifically when communication training is provided. By integrating professional support and additional staff practice/feedback, other programs can also increase the effectiveness of their staff training programs in order to benefit adults with ID.

However, training direct care staff can prove to be rather challenging. Bosco et al. (2019) trained 26 volunteer health staff in Positive Behavior Support (PBS) approaches to test the effectiveness of staff training on reducing challenging behavior in adults with ID. However, training proved to be unsuccessful, as it did not reduce behavior any more than usual care did. Even though results did not show significant changes, this study identified many areas that other training programs can address. These programs can take into account these challenges and modify these limitations so that there is an improved quality of staff training provided. Time management of the staff was spread thin as they had other clinical responsibilities to attend to in addition to implementing the PBS intervention (Bosco et al., 2019). Because of this, many might have felt intimidated and pressured about completing an intensive workload, ultimately affecting the quality of the

service they were providing. Future programs should consider only assigning just enough responsibilities for one person to handle at a time. There was also insufficient support for the staff during the training and while on site (Bosco et al., 2019). By providing mentorship and supervision, staff may have been able to perform better and in turn increase the effectiveness of the program. In addition, staff did not feel competent in their skills to formulate PBS plans. To ensure future skill retention, training should be comprehensive and provide more opportunities to reiterate and develop the information needed to carry out these approaches. This study provided a lot of insight through defining what obstacles should be considered and included when creating the educational component of our yoga program. As OTs, one of our main responsibilities is caregiver and staff education. It is vital for us to address effective means of education so that adults with ID will be provided with well-rounded care inside and outside the clinic. Thus, by educating other caregivers and staff, our program will provide accountability and outcomes that aim to be successful and sustainable for our clients.

### **Occupational Therapy Practice Framework**

The Occupational Therapy Practice Framework: Domain and Process, 3<sup>rd</sup> Edition (OTPF-III) contains core concepts to implement in order to understand a client and promote their health when participating in occupations (AOTA, 2014). One of the domains in the OTPF-III is spirituality, an area in the framework that can affect the clients' performance (Morris et al., 2014). By applying the OTPF-III to OT practice, clients will be evaluated on a holistic level to ensure that treatments are individualized to their specific needs. The mixed method study by Morris and colleagues determined the importance of holistic care through spirituality (Morris et al., 2014). In this study, 97 OTs

were given questionnaires in relation to OT practice that questioned the importance of using spirituality in practice with clients. The questionnaire was analyzed through an SPSS system which evaluated each question and found one third of the participants found spirituality not to be important to a client's need, while two-thirds of the participants strongly agreed that spirituality would benefit the client overall because it is an essential component in the OTPF-III. The responses were also looked over in person by the researchers to cross-examine common words that were mentioned in the responses. Words such as needs, roles, values, and spiritual were found to be the most common. From the responses, researchers found that most of the participants said that spirituality can be used to motivate a client because it will provide them with a purpose. One of the limitations of this study is that the participants may not represent all OTs in the United States as the sample size was small in comparison to the actual number of OTs employed. The study also mentions having no prior studies on this population because spirituality was never debated until the recent revision of the OPTF-III (Morris et al., 2014). This gap in the research for spirituality assessments indicates the need for further literature to explore how the OTPF-III can enhance the quality of client care and engagement.

There are programs available that have been created from the foundations of the OTPF-III. Austin-McCain (2015) promoted a health program called LifeSteps, which was built in line with the principles outlined in OTPF-III. The program corresponds to the domains and processes of the OTPF-III to promote a healthy lifestyle in individuals by incorporating a personalized approach to increase healthier behavior. LifeSteps is also based on the Model of Human Occupation (MOHO) to further explain the occupational profile of a client through volition, habituation, and performance capacity (Austin-

McCain, 2015). The goal of this program is to implement non-traditional health interventions to assist underserved populations by assessing participants based on health behavior, level of stress, and physical activity. Although this program has not been implemented, Austin-McCain has given measures to support her findings, such as using the PACE+ scale to measure physical activity and participation of healthy behaviors. The PACE+ scale must be modified in order to be applicable in this program by being able to identify the client's current health behaviors for dietary intake. Another assessment is the URICA scale which is a self-report measure for awareness and motivation (Austin-McCain, 2015). For the LifeSteps program the scale is used to assess the individual's motivation to complete a particular occupation. In this program, that means having the motivation to exercise (Austin-McCain, 2015). Once the program is completed the participants will complete a satisfaction questionnaire on the program on a scale of 5. Since this program has not been established to the public yet, it may be beneficial to find previous studies using the OTPF-III as a blueprint in promoting health awareness. There also needs to be a targeted population since there was not mention of what kind of underserved population the author is trying to assist. This article shows that the OTPF-III can be a tool that helps guide OTs in creating a community-based program. The OTPF-III covers the core concepts on how OTs can use client interests to develop interventions that are tailored to each client.

### **Statement of Purpose**

Yoga has been shown to improve quality of life, flexibility, endurance, and cognitive performance in adults without ID. However, little is known as to the effects of these factors for individuals aged 18 to 40 who have ID. There is also a lack of evidence

regarding the benefits of a staff training program designed to teach our population of study. In addition, there are no known programs that utilize an evidence-based yoga curriculum specifically designed for adults with ID. The purpose of our study was to create a manual designed specifically for OTs to implement a community-based Vinyasa yoga program for individuals with ID. This manual will enable instructors to become more knowledgeable in the proper execution of all poses, how to upgrade and downgrade certain positions, and understand how to facilitate each yoga session to cater to this population. Our hope is that by educating others on how to implement a *just right* challenge for their clients, Vinyasa yoga will become more dynamic and sustainable for occupational success and in turn, individuals will show strides in endurance, flexibility, quality of life, and cognition.

### **Theoretical Framework**

The theoretical framework we will use for our study is the Model of Human Occupation (MOHO). We will be focusing on creating a yoga program that will be catered to 18-40-year-olds with varying ID, a population who are often misunderstood, overlooked, and underserved. Given the diverse and misunderstood needs of our priority population, MOHO is the most appropriate framework as it takes into consideration the individual's environment and how it contributes to their motivation, patterns of behavior, and performance (Cole & Tufano, 2008). In addition, it places an emphasis on the person as an individual and internal factors such as volition and habituation. By using MOHO to guide our project, we will address the needs and wants of individuals with ID by enhancing their learning experiences and participation, thus motivating them to improve their patterns of behavior and performance in the activities they engage in.

For our thesis project we will design an educational manual for OTs to implement a community-based yoga program for adults with ID. They will become more knowledgeable in the proper execution of all poses, how to upgrade and downgrade certain positions, and understand how to facilitate each yoga session to cater to this population. Our hope is that by educating OTs on how to implement a *just right* challenge for their clients, the yoga program will become a dynamic and sustainable guide for occupational success. By continuously modifying yoga poses to address the needs and abilities of clients, client movement will be maximized. In doing so, the client's increased participation in physical activity will enhance their performance patterns and performance skills. Therefore, a *just right* yoga program will maintain and continuously improve client function and performance in activities of daily living (ADLs) and instrumental activities of daily living (IADLs). Using MOHO as a framework to guide the creation of our yoga manual will allow us to educate therapists in providing appropriate challenges for clients and ultimately increase client function, motivation, and quality of life.

## **Methodology**

### **Manual Design**

The manual is designed for an occupational therapist to use to engage adults with ID to participate in a community-based Vinyasa yoga program. The manual begins with an overview of how the OTPF-III (American Occupational Therapy Association [AOTA], 2014) will guide an occupational therapist in the community-based Vinyasa yoga program. The final portion of the manual will contain the series of Vinyasa poses with examples on how to decrease or increase the difficulty of the pose. From the

literature review, it was discovered that the adult population with ID are not being serviced and are missing out on opportunities to participate in meaningful activities.

### **Occupational Therapy Practice Framework**

The OTPF-III is the document used in OT that describes, “the profession’s core belief in the positive relationship between occupation and health and its view of people as occupational beings” (AOTA, 2014, p. S3). The domains of OT from the OTPF-III include occupations, client factors, performance skills, performance patterns, context, and environments. The process of the OTPF-III includes evaluation, intervention, and targeting outcomes which is how the client-centered interventions are delivered. The domains and the processes can be broken down into smaller aspects within their respective category.

The first occupational domain is occupations. Occupations include the activities that make up a person’s day like bathing, going to school or work, walking the dog, reading a book, or spending time with friends and family. The next domain, client factors, includes values, beliefs, spirituality, body functions, and body structures. Examples of client factors could be a client’s commitment to their family, belief in hard work and search for purpose or meaning. Performance skills include motor, process, and social interactional skills. Examples of performance skills include coordinating the arms and legs to walk, sequencing movements in the proper order, and expressing emotions that are socially acceptable. The fourth domain, performance patterns, refers to rituals,

routines, habits, and roles. Attending church on Sunday, following a particular sequence to complete morning hygiene, gathering your phone and keys before leaving the house, and a college student studying English who has been diagnosed with dyslexia are examples of performance patterns. The final domain includes context and environment. The context of a client includes categories such as culture, personal characteristics, time frame, and their virtual life. The environment includes their physical environment and their social environment. All five of these domains can be addressed by an occupational therapist if it is found during the process that there is a deficit in any of these areas and it correlates with the goals of the client.

The evaluation process is when the occupational therapist gathers an occupational profile and analyzes the client's occupational performance. To build an occupational profile, an occupational therapist may utilize a questionnaire or an informal interview to better understand the client and how they live their life. The client's occupational performance assessments are used to establish a client's baseline and determine if it is functional. Once this information is gathered the therapist can move to the intervention stage. The intervention stage begins with creating a plan for the client and implementing that plan while adjusting along the way for the benefit of the client. The final piece of the process is the targeting of outcomes, meaning involves defining the purpose of the OT intervention. In this final stage of the process, the progression of the measured outcomes can help the therapist make decisions about the continuation or discontinuation of therapy services.



### **Yoga and Domains**

The domains of the OTPF-III address characteristics of the client such as occupations, client factors, performance skills, performance patterns, context, and environment. Occupations define the client's identity and consist of elements that the client experiences such as ADLs, IADLs, rest and sleep, education, work, play, leisure, and social participation. In relation to yoga, aspects such as leisure, social participation, and play are included and can play a role in finding a sense of belonging. Clients or participants may see yoga as a leisure or play activity because it may be something they continue to practice in their free time after being taught the Vinyasa flow. Yoga can also be done in a group setting which is the occupation of social participation. Individuals can incorporate their family or friends to participate in yoga to create an engaging environment that can improve the well-being of the individual.

Client factors comprise components such as values, beliefs, spirituality, body functions, and body structures. Skills that are performed by the client can be affected in this aspect if there is a disability involved that can limit the capacity of the components. Yoga in this aspect of the OTPF-III (AOTA, 2014) is involved in all the components of client factors. An individual can value mindfulness and believe in practicing exercises to improve their health. Body structures and body functions are also involved due to the movement of their bodies (body structures) into each pose of the manual which will increase their heart rates (body functions).

Performance skills involve the individual or participants using client factors to perform a goal-directed action. Body functions and body structures are used to perform the occupations that the individual is interested in. Some examples of performance skills

are sensory-perceptual, motor and praxis, communication and social, emotional regulation, and cognitive skills. As the participants are performing the yoga poses that are in the manual they will be using cognitive skills to plan and position their body the way the yoga instructor demonstrates. They will also be using motor and praxis skills to maneuver their body through the flow of the poses. Yoga may also relieve stress that the participants may have and ease the tension that they have in their mind, which would relate to the emotional regulation component of performance skills.

Performance patterns consist of habits, routines, rituals, and roles that are constructed by the occupations that they practice. They shape the individual and give them an identity and can influence the other domains in the OTPF-III (AOTA, 2014) if the occupations are hindered. In relation to yoga, it can be a routine that individuals practice daily. Roles can relate to yoga because the participants in the study are seen as students of the yoga instructor.

The final domain of the OTPF-III is context and environment. This domain can be described as where the occupation takes place or where the participants are doing yoga. The context and environment incorporate aspects such as cultural, personal, physical, social, temporal, and visual. In relation to occupations, the client and environment dictate the access that the client will have and influence the performance of that occupation. If the client is unable to have access to an environment to practice the occupation it may hinder how the occupation is performed. The client may not find it meaningful or a part of their identity. This domain relates to yoga by having the participants in a designated location which is a studio at a designated time. There will be other participants involved in the program and there will be a demonstration for the participants to watch. Hired

personnel will also be assisting the clients physically which provides an interactive component to both parties involved.

Each domain in the OTPF-III (AOTA, 2014) is susceptible to change because the individual's identity and what they find important can change. They may find an occupation to no longer be important to them and find a new activity that is meaningful to them. The most important aspect is the engagement of the occupation and how motivated the individual performs the task because that can correlate with how it is interacting with the mind and body.

### **Yoga Pose Layout**

The yoga poses will be taught in the order of how they will be performed once the participants have learned all poses. First, they will begin with breathing exercises and move into a warm-up or what is referred to as a sun salutation in Vinyasa yoga. There will be two variations of the sun salutation. Then there will be a variety of standing and balancing poses. After the standing poses are completed the participants will move into seated poses to cool down and close in "corpse pose." The final pose to end each session will be a seated pose with the hands at the heart.

### **Yoga Pose Handout Design**

Simple handouts were designed for this manual. The basic yoga pose name is listed first and followed by the asana yoga pose name in parentheses. Then below that is a picture of the pose being performed. Next to the picture may have a small list of key points to perform the pose. There are also two boxes where the caregiver can take notes and write down specific modifications that have been provided by the occupational

therapist or yoga instructor. The handouts were organized in the order in which the participants are going to learn them.

### **Participants**

This yoga manual is designed for healthy adults aged 18-40 years old with an intellectual disability. These adults should be free of injuries or physical limitations before engaging in this community-based program. Along with a diagnosis of a developmental delay, the individuals should be able to have adequate comprehension of English or have a translator who can attend along with them. The participant must also be able to follow a minimum of two-step instructions. To ensure safety, a primary caregiver or legal representative must be present at all times.

Certified Vinyasa yoga instructors will be present throughout the program. It is recommended that this individual have previous experience in working with the target population, but it is not required. The yoga instructor must be present on the first day of program implementation to train caregivers and volunteers on proper yoga facilitation. Volunteers of the program would be occupational therapy students or occupational therapy assistant students. Their role is to also assist in the facilitation of proper yoga techniques, address the needs of both caregivers and program participants, and be knowledgeable of accommodations. It is imperative that the caregivers and volunteer staff are well informed on proper yoga techniques to ensure safety in facilitation when program participants begin their own learning sessions. At the end of each session, caregivers and volunteer staff must demonstrate accurate understanding and independent execution of the poses in order to confirm expertise.

### **Implementation of the Manual**

This manual is designed to have a total of 20 meetings occurring at a minimum of two times per week for a duration of 45 minutes to one hour. On the first two days of implementation caregivers and any other staff will attend orientation training about the primary muscle groups and how to create the proper challenge for the participant. In addition, the caregivers and staff will be educated about how to safely and properly facilitate movement. This will include teaching how to apply gentle pressure to the appropriate areas of control to facilitate the desired movement. These first two meetings can be expected to last up to one hour.

The third meeting is the first time that adults with ID will be introduced to each other and the staff. Caregivers and volunteers will also be present at this time. This is where all initial data will be gathered. The suggested measurements to be collected at this time are as follows: resting heart rate, resting blood pressure, flexibility, grip strength, cardiovascular endurance, level of anxiety, level of intelligence, and level of psychosocial well-being. These measurements will be taken once more after the participants have completed the yoga program.

During the fourth meeting, the lead therapist will introduce the four core yoga poses with handouts where the caregivers or legal representatives can take notes about how to make appropriate adjustments. During the introduction to each pose, the pose will be verbally explained and visually demonstrated and then each individual will have an opportunity to work with their caregiver and volunteers to practice the core poses. While the individuals are practicing the core poses the lead therapist and volunteers will go

around to help with any adjustments that need to be made to best fit the participants' needs.

The remaining meetings the participants will learn three new poses until all sessions have been completed. Week eight will be used to go over any poses that were particularly difficult for the participants and week nine and the first session of week 10 will be used to go through both sun salutations. These meetings will be one hour long and held at least twice a week to ensure consistency in the practice of the Vinyasa yoga poses. The new poses that are introduced during the remaining meetings, handouts will be provided so that practice may continue at home. The final session in week ten is when post-intervention measurements will be taken. See the appendix for the sequence of the poses that will be provided to the participants.

### **Ethical Considerations**

The creation of the manual presents potential risks for the individuals utilizing the information presented. The participants included are the OT, the certified yoga instructor, the volunteers, and the individuals with ID. When practicing yoga, there is a possibility that the participants may fall and injure themselves. Adequate floor mats must be provided to ensure safety amongst the participants in the event that there is a fall from slipping or losing balance while transitioning to different poses. The certified yoga instructors and volunteers need to be alert at all times when supervising the participants. The yoga instructor is present to relay proper Vinyasa yoga mechanics to the volunteers and participants to ensure that proper steps are followed during instructions. Volunteers are present to alert the yoga instructors, occupational therapist, and other present

volunteers if an injury does occur during the program, as well as address any concerns from the participants.

The identities of the participants must be kept confidential during the program and consent is needed from the participants as well as the participants' guardians before starting. If filming and photography are present in the program informed consent is needed from the participants. Participants have the choice to decline their involvement in the program. The development of the manual will be subjected to the Occupational Therapy Code of Ethics in order to avoid actions that may cause the participants harm (AOTA, 2015). Participants will be treated with respect by the personnel involved in the program which includes volunteers, OTs, and certified yoga instructors (AOTA, 2015). According to the Occupational Therapy Code of Ethics, working personnel shall respect the wishes of the participants if they choose to stop participating in the program and will be de-identified to ensure the protection of privacy. The implementation of the manual should be made to adhere to the best practices of OT to ensure nonmaleficence to clients who are participating in the program.

### **Possible Limitations**

The possible limitations in developing this program are the various intellectual disability diagnoses that are admitted into the Vinyasa program. With the limited time given in the program, it would be time-consuming to educate all the volunteers and the yoga instructor present on the different types of ID. Moreover, if the manual is not legible for the volunteers and deemed complex, more time has to be allocated for education and the volunteers may find it time-consuming and may lose interest in participating in the program. The manual created must be concise and clear to the volunteers who are

implementing it, if the manual does not address step by step how each yoga pose is done or provide a clear picture, it will result in poor performance from the volunteers. Another limitation regarding the manual may be the safety guidelines that only cover this specific Vinyasa program and may not be covered in other yoga programs such as Bikram or Hatha yoga. The guidelines may not be generalizable and the poses cannot be generalized to other yoga programs because they are specific to Vinyasa.

Regarding the volunteers that will be recruited to implement the program, time commitment can be an issue due to several factors such as time conflicts and transportation. It is the volunteers' responsibility to arrive on time at the scheduled session and to be fully engaged in assisting the participants. OT student volunteers may have a different education level depending on how far they have progressed in their program. Although the initial meeting is scheduled to orient the volunteers on muscle groups and positions, the information may not be enough to educate the volunteers. Some volunteers may already know the muscle groups and how to facilitate the movements while others may need more guidance. Also, the yoga instructor present may not have education on ID and may find it difficult to instruct the participants if she/he is aware of what intellectual deficit the client has such as a developmental delay or Down syndrome.

Furthermore, the research to support the benefits of yoga has not been addressed in the intellectual disability population and therefore limits the knowledge that is known to the target population. There is research present in the health benefits of adults and older adults, but none that can be found on adults with ID. This manual will be established to target this marginalized population so that there is data collection that can be used for further research in using yoga with intellectually disabled individuals.



### **Discussion**

Yoga has not yet been proven to have physical and cognitive benefits for adults with ID. However, in the context of an adaptive environment, these individuals can experience dynamic movements specifically catered to their functional abilities. Adaptive yoga focuses on the client's skill level and provides necessary accommodations for each individual. This community program meets that criteria and additionally provides resources and information that focuses on the unique needs of adults with ID. Our project significantly impacts OT research as the field is moving toward interventions that provide a community-based approach. The basis of the manual focuses on providing proactive care that aligns with current preventative therapy measures. In addition, this project aligns with additional AOTA research agendas through the criteria that it is replicable, theory-driven, client-centered, and an occupation-based modality.

### **Project Development**

We were inclusive in our developmental approach, incorporating formalized training for the administrators, instructors, and caregivers. This program was designed for an occupational therapist to implement and oversee; their knowledge and expertise allow them to make the most appropriate decisions regarding the safety and participation of each client. In the first section of the manual, there is an introduction and literature review stating the benefits of engaging in yoga practice. The next section of project implementation includes instructional summaries of how OTs should carry out certain program components, such as upgrades and downgrades for each pose. Lastly, handouts are included for instructors and caregivers to utilize as easy-to-read resources throughout the duration of the program. Handouts included a section for specific modifications to be

made by the occupational therapist as well as multiple blank sections for caregiver/instructor notes. With the proper education, this program will ensure that caregiver involvement will be implemented, a crucial component in translating participant progress to the home environment.

### **Occupational Therapy Practice Framework**

This yoga manual was constructed upon the foundation of the OTPF-III. This document presents the interrelated constructs that pertain to OT practice, including areas of occupations, client factors, performance skills, performance patterns, context & environment, the evaluation process, intervention process, and targeted outcomes. We utilized these constructs to guide manual creation so that the curriculum is built from an OT perspective. Because it is vital to apply a multi-faceted approach when instructing adults with ID, all the factors that encompass yoga practice were analyzed through the lens of the OTPF-III, specifically its domain and process.

**Domain.** At the start of the program, all participants are to be assessed on the domains outlined in the OTPF-III. The occupations each participant engages in varies on the roles they assume, whether it be administrator, instructor/caregiver, or program client. The focal participant of our manual is the instructor/caregiver of an adult with ID as the goals are catered to improving and maintaining health outcomes for program clients. By partaking in this yoga program, the participant will engage in areas of education, play, leisure, and social participation. Each participant may have different values and belief systems; therefore, this program will not include any of the spirituality that is sometimes included in yoga sessions; the focus is rather the physical, emotional, and cognitive benefits of this practice. Other factors that may affect the client's ability to participate are

their body functions. Individuals with ID have mental deficits that will affect their judgement, thought processes, attention, and emotional regulation. Some individuals may exhibit sensitivities to light, sound, and touch. Program clients will also demonstrate performance deficits in all motor, processing, and social interaction skills. Therefore, these areas need to be addressed in the instructor training portion so that the environment will create a feeling of comfort rather than agitation.

For this program to be successful, the learning environments need to be catered to the program client's needs. Caregivers take on the important role of overseeing the majority of needs that adults with ID have. By educating caregivers and instructors on proper yoga techniques, body mechanics, and how to facilitate safe movement, yoga will be made more accessible to the learning levels of the client. In addition, the teaching environment will also replicate a general population yoga class, giving the program clients the opportunity to socialize in a safe space. Information on how to provide specialized instruction should be discussed so that the performance deficits of individuals with ID are addressed. This is particularly useful for instructors that do not have prior experience teaching with the special needs community. Routine management and habit creation need to be a point of education for instructors and caregivers to integrate yoga practice in the home environment. When considering the performance patterns of the program client, many individuals with ID have sedentary habits. By incorporating yoga in their daily routine, program clients will replace those hours of prolonged inactivity with productive movement.

**Process.** The OTPF-III outlines an additional section that happens after the pre-assessment process: evaluation, intervention, and targeting of outcomes. Our program

meets these criteria through the initial evaluation of baseline data which includes blood pressure, heart rate, flexibility, cognition, endurance, and quality of life assessments. The program's intervention approach focuses on health promotion, maintenance, and providing modifications. The intervention implements instructor/caregiver training in the education of yoga for adults with ID. The occupation focused on is yoga with preparatory tasks of dynamic stretching. In addition, this program is considered a group intervention due to the fact that it promotes the social interaction and support typically deprived from this population. The activity of yoga typically demands an able body with adequate space to safely manipulate that body. It requires the cognitive ability to sequence and time one's movements to complete one yoga flow. Because of these occupational demands, OTs need to be aware of how to downgrade and upgrade the poses appropriately so that they fit the individual skill set of each client. Lastly, this program targets outcomes such as enhanced occupational performance, health and wellness, quality of life, participation, role competence, well-being, and occupational justice. Through the guidance of the OTPF-III, this program has made adaptive yoga conducive for individuals with ID and all personnel involved in their instruction. Though results are not available to confirm the effectiveness of this manual, this project does outline the process for future implementation.

### **Conclusion**

Yoga has been found to have positive physical and cognitive benefits for its participants. However, adults with ID have been excluded from such studies and continue to be overlooked and underserved. By using MOHO and the OTPF-III to guide the creation of this manual, this program has been designed to address the wants, needs, and

extraneous factors that affect the learning experiences of individuals with ID. OTs will be able to use this manual and implement a client-centered program that incorporates *just right* challenges catered to the physical abilities of their participants. Teaching OTs to adjust different yoga poses will facilitate improved client participation and increase client knowledge in the practice of yoga. As a result of increased and successful physical performance, client performance patterns, performance skills, and motivation may improve. By using a Vinyasa based yoga manual, OTs can implement a community-based Vinyasa program specifically for individuals with ID. The next steps of this project would require the implementation of the manual and testing the effectiveness of yoga on the cognitive and physical abilities of individuals with ID. Ultimately, our hope is that the manual and program will lead to improved client endurance, flexibility, cognition, and quality of life as well as the foundational knowledge needed to participate in mainstream yoga classes. In doing so, our manual and program will make a significant contribution to AOTA's Centennial Vision of envisioning and shaping OT into a profession that is widely recognized, science driven and evidence-based while meeting the occupational needs of the communities we work in (AOTA, 2007).

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# An Occupational Therapist's Guide to an Adaptive Yoga Program



## A Community Based Approach for Adults with Intellectual Disabilities



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### Introduction

Individuals with intellectual disabilities (ID) constitute approximately 6.5 million people in the United States alone (CDC, 2019). ID is characterized by limitations in intellectual functioning and adaptive behavior, specifically social, practical, and conceptual skills. Physical and social well-being are primarily affected areas, resulting in overall poorer health outcomes compared to the general population (Eggers et al., 2018). These health concerns include an increased risk of obesity, diabetes, heart disease, and mental health conditions (Dorrance et al., 2018). Limited access to community-based recreational activities and fitness facilities can also contribute to these disparities as many programs only take into account the physical ability of an individual rather than the intellectual functioning of their clientele. Because of this, many individuals with ID will lead sedentary lifestyles due to the insufficient physical training opportunities catered to their needs. This becomes a matter of occupational justice, which means the right for all individuals to engage in activities that are necessary and meaningful. Thus, by providing resources unique to this population, individuals with ID will finally be given opportunities to explore active occupations.

Motivating individuals to engage with activities and resources that promote good health is a crucial aspect to combating prolonged inactivity and improving overall health outcomes for individuals with ID. One health promotion strategy is to develop community-based programs as they are the easiest and most cost-effective way to reach a large audience. Such programs can focus on enhancing participation in physical activity, facilitating social interactions, and providing adequate resources for clients and their families. There is strong evidence that community-based programs have a positive effect on health-related outcomes for adults with ID, specifically when incorporating physical activity interventions such as enhancing strength and addressing BMI (Eggers et al., 2018). The focus is to promote and maintain a healthy lifestyle that will increase overall independence for people with ID. With proper support, more community-based programs can make changes that will accommodate this population and open facilities that are inclusive and accessible to people of varying intellectual abilities. In turn, individuals with ID will become more involved in health-promoting activities, resulting in an increased prioritization of their health and quality of life.

Occupational therapy (OT) can play a role in the success of these programs. OT utilizes evidence-based practice and meaningful activities to address areas that bring independence and fulfillment to people's daily lives. In community-based settings, occupational therapists (OTs) can focus on promoting participation and socialization amongst members, providing education for staff and caregivers, and implementing interventions focused on enhancing overall well-being and quality of life. OTs understand how to adapt activities appropriately to the skill level of a client and provide a *just-right* challenge for them to grow in their abilities. Thus, OTs are better suited than other health care professionals to provide insight into adaptive program development as they are equipped with the knowledge to cater to the individual and their specialized needs.

A well-designed adaptive community-based program must incorporate activities that can easily accommodate the needs of varying abilities. Yoga is a physical activity that can be adapted to fit the needs and skill set of the individual. This activity provides gentle movement and stretching but can increase in complexity and strength as needed.

There is evidence citing the physical and cognitive benefits yoga brings to the body, especially for individuals who have limited mobility, balance, and strength (Yoga Home, n.d.). Yoga can also be completed with assistive aids such as yoga blocks, other props, or in a chair to supplement difficulties with posture and execution (Yoga Home, n.d.). Thus, an adaptive yoga program would be the most appropriate for individuals with ID.

An adaptive yoga program would provide individualized support from volunteers and staff members. In addition, resources and education should be provided to caregivers so that the progress made in the program can carry over in the home setting. However, there is a discrepancy across adaptive community programs in terms of the formalized training given to both caregivers and staff members; this can compromise the effectiveness and safety of these programs. It is vital that all members involved in the instruction of a physical activity understand how to adapt the movements and facilitate safe interactions for individuals with an intellectual disability. Thus, OTs are an instrumental component to the success of these programs as they are knowledgeable and competent in facilitating this type of education. Good quality training will ensure that participants will be able to maximize the benefits of an adaptive yoga program. We address the needs of an underserved population by creating an OT based community yoga program that will provide individualized training catered to their caregivers and instructors. By including these adaptations, we hope to improve overall health outcomes for clients with ID, and in doing so, advocate for their occupational justice.

### **The Relevance to Occupational Therapy**

#### **Occupational Therapy Practice Framework**

This yoga manual was constructed upon the foundation of the Occupational Therapy Practice Framework: Domain and Process, 3<sup>rd</sup> Edition (OTPF-III) (AOTA, 2014). This document presents the interrelated constructs that pertain to occupational therapy practice, including areas of occupations, client factors, performance skills, performance patterns, context & environment, the evaluation process, intervention process, and targeted outcomes. We utilized these constructs to guide manual creation so that the curriculum is built from an occupational therapy perspective. Because it is vital to apply a multi-faceted approach when instructing adults with ID, all the factors that encompass yoga practice were analyzed through the lens of the OTPF-III, specifically its domain and process.

**Domain.** At the start of the program, all participants are to be assessed on the domains outlined in the OTPF-III. The occupations each participant engages in varies on the roles they assume, whether it be administrator, instructor/caregiver, or program client. The focal participant of our manual is the instructor/caregiver of an adult with ID as the goals are catered to improving and maintaining health outcomes for program clients. By partaking in this yoga program, the participant will engage in areas of education, play, leisure, and social participation. Each participant may have different values and belief systems; therefore, this program will not dive into the spirituality pertaining to yoga, rather the physical, emotional, and cognitive entities that surround this practice. Other factors that may affect the client's ability to participate are their body functions. Individuals with ID have mental deficits that will affect their judgement, thought processes, attention, and emotional regulation. Some individuals may exhibit sensitivities to light, sound, and touch. Program clients will also demonstrate performance deficits in all motor, processing, and social interaction skills. Therefore, these areas need to be

addressed in the instructor training portion so that the environment will create a feeling of comfort rather than agitation.

For this program to be successful, the learning environments need to be catered to the program client's needs. Caregivers take on the important role of overseeing the majority of needs that adults with ID have. By educating caregivers and instructors on proper yoga techniques, body mechanics, and how to facilitate safe movement, yoga will be made more accessible to the learning levels of the client. In addition, the teaching environment will also simulate a general population yoga class, giving the program clients the opportunity to socialize in a safe space. Information on how to provide specialized instruction should be discussed so that the performance deficits of individuals with ID are addressed. This is particularly useful for instructors that do not have prior experience teaching with the special needs community. Routine management and habit creation need to be a point of education for instructors and caregivers to integrate yoga practice in the home environment. When considering the performance patterns of the program client, many individuals with ID have sedentary habits. By incorporating yoga in their daily routine, program clients will replace those hours of prolonged inactivity with productive movement.

**Process.** The OTPF-III outlines an additional section that happens after the pre-assessment process: evaluation, intervention, and targeting of outcomes. Our program meets these criteria through the initial evaluation of baseline data which includes blood pressure, heart rate, flexibility, cognition, endurance, and quality of life assessments. The program's intervention approach focuses on health promotion, maintenance, and providing modifications. The intervention implements instructor/caregiver training in the education of yoga for adults with ID. The occupation focused on is yoga with preparatory tasks of dynamic stretching. In addition, this program is considered a group intervention due to the fact that it promotes the social interaction and supports typically deprived from this population. The activity of yoga typically demands an able body with adequate space to safely manipulate that body. It requires the cognitive ability to sequence and time one's movements to complete one yoga flow. Because of these occupational demands, OTs need to be aware of how to downgrade and upgrade the poses appropriately so that they fit the individual skill set of each client. Lastly, this program targets outcomes such as enhanced occupational performance, health and wellness, quality of life, participation, role competence, well-being, and occupational justice. Through the guidance of the OTPF-III, this program has made adaptive yoga conducive for individuals with ID and all personnel involved in their instruction. Though results are not available to confirm the effectiveness of this manual, this project does outline the process for future implementation.

## **Literature Review**

### **Introduction**

Yoga has been shown to benefit one's endurance, flexibility, quality of life, cognition, and decrease anxiety. While studies have shown the benefits of yoga, what is excluded from those studies are young adults with ID. Most articles have documented results on children, adolescents, and older adults, but the largest gap is shown in the young adult category. Due to limited research done on yoga for those with ID, this

literature review examines the benefits of yoga for this underserved population. Our hope is to demonstrate that studies on yoga can be applicable to young adults who have ID.

### **Intellectual Disability and Obesity**

Obesity increases the likelihood of acquiring major health conditions or diseases. Hsieh et al. (2014) found that adults with ID have a higher risk of developing obesity, with a prevalence of 38.3%, when compared to a 28% prevalence in individuals without ID. The study discusses non-modifiable factors (i.e. gender), and modifiable factors (i.e. medication and sedentary lifestyles), that are associated with these higher rates of obesity. Although the study did not explain why or how gender impacts obesity, females were found to have a higher rate of obesity than men, with a prevalence of 43.2% in comparison to 34.3%. Medication was also an associated factor as 45% of individuals in the study were taking medications for mood regulation, seizures, diabetes and blood pressure, all of which are associated with weight gain. Lastly, living a sedentary lifestyle and bad nutrition also contribute to the prevalence of obesity in individuals with ID. Those with decreased physical activity, increased time spent watching television and who consume soda on a daily basis were found to have higher rates of obesity (Hsieh et al., 2014). Gawlick et al. (2016) addressed the prevalence of obesity in individuals aged 20–50 who have moderate and severe ID in Poland. Within the population of individuals without ID in Poland, obesity was found in 16% of women and in 17% of men, where individuals with ID was found in 30% of women and in 19.4% of men. Due to the higher prevalence of obesity within the ID population, it is important that individuals with special needs and their families are educated about participating in physical activities such as yoga, to positively improve their health outcomes and well-being.

### **Physical Benefits of Yoga**

Yoga involves different physical poses, breath work, and mindfulness techniques that support improved health and weight loss. Ross et al. (2016) conducted a qualitative study addressing the weight loss experience of women between the ages of 35–67 who had participated in yoga. They found 88% of participants whose body mass index (BMI) was within the normal range, 18.5 to 24.99, and 27% of those whose BMI was considered overweight, 25 to 29.9, all reported unintentional weight loss, which ranged from 4 to 70 pounds and an average loss of 26 pounds. The yoga instructors served as role models and participants felt a sense of social support which led to 60% of individuals considering the yoga community and culture as a reason for their weight loss. Participants reported that by shifting their focus towards health—as opposed to losing weight—they were able to lose weight, gain more muscle, increase muscle tone, and experience changes in their metabolism (Ross et al., 2016). The physical benefits connected to practicing yoga demonstrate its efficacy as a physical activity that can be used to improve health.

Yoga has been found to improve muscular strength, cardiovascular endurance, and many other aspects of physical well-being. However, there are many yoga styles such as Bikram, Yin, and Hatha. Ward, McCluney, and Bosch (2013) have suggested that Vinyasa yoga leads to cardiovascular benefits. They found that first time yoga participants had an average heart rate of 107 beats per minute, suggesting that Vinyasa yoga is considered a light aerobic exercise. In contrast, at least 10 out of the 38 participants exhibited moderate intensity for the exercise. This implies that yoga exercises can cause variability in heart rate depending on an individual's experience with yoga, and the lifestyle of each participant. Active lifestyle participants had heart rates that



were lower than the sedentary lifestyle participants, by 18 beats per minute. In Ward et al.'s study (2013), participants with a sedentary lifestyle reported having higher heart rate compared to those who were involved with a physical activity that is a part of their daily life. In comparison with Bikram yoga, a very intensive yoga style involving a heated environment and constant movement, the same participants in this study would have an average heart rate of 168 beats per minute according to Miranda-Hurtado, Valladares, Eblen-Zajjur, and Rodriguez-Fernandez (2019). The increase in heart rate associated with Bikram yoga contrasts with Vinyasa's less intense, slower paced movements, which do not lead to a similar increase in heart rate. Although the study did not concretely conclude the benefits of Vinyasa yoga, it did suggest that individuals who have never practiced yoga could benefit from this activity because it provides an aerobic response to the participants in the study. Ward et al. (2013) discussed that Vinyasa yoga could be used for individuals who have a sedentary lifestyle and are looking to incorporate physical activity in their daily life.

Chair yoga may be an alternative form of yoga for those that need more modification. This form of yoga has also shown improvements in physical fitness in individuals with psychiatric diagnoses, as Ikai et al. (2017) showed with their 12-week study with inpatient psychiatric patients. One group received training in chair yoga and the other half participated in treatment as usual. The intervention group completed a total of 24, 20-minute sessions, and they were assessed 6 weeks after the completion of the intervention. There was a yoga instructor and two OTs to support the facilitation of the chair yoga instruction. The study found the intervention group had a high completion rate, which shows that this is feasible for adults with cognitive deficits. Furthermore, their improvements in flexibility and muscle strength were still present at the 6 week follow up (Ikai et al., 2017). This study is relevant to this project because even after adaptations were made for safety, the program still produced improvements in physical fitness among the participants.

### **Cognitive Benefits of Yoga**

Yoga and other types of physical activity have been used as a supplemental intervention for all kinds of diagnoses. However, something that has not often been looked at is how yoga can improve cognition. Brunner et al. (2017) assessed the impact of yoga on working memory maintenance, manipulation, and attentive mindfulness on individuals 18 years of age and older. In their study, participants selected either one 60-minute yoga session per week for 6 weeks, or two 60-minute yoga sessions per week for 3 weeks. The study found that completing six sessions of 60-minute yoga is associated with improving working memory and mindfulness (Brunner et al., 2017). Bhatia et al. (2017) also found that yoga has positive benefits on cognition. The major outcome measured was the patients' improvement in speed index of attention which is the individual's ability to comprehend visual input and complete a task with that information. Both activities showed enhancement in several cognitive functions, but the yoga group had greater improvements in speed index of attention, working memory, and verbal acquisition. There was retention and even further progress in some of the outcomes at the 3- and 6-month assessments (Bhatia et al., 2017). Lin et al. (2015) completed a study comparing aerobic exercise and yoga on the potential cognitive improvements that could be made in women diagnosed with early psychosis. This study also found similar progress in the areas of verbal acquisition and attention as a result of yoga exercises.

There were also additional enhancements made in working memory when using yoga as an adjunctive therapy. This yoga program consisted of a 12-week program for one hour, three times a week (Lin et al., 2015), but the study by Bhatia et al. (2017) consisted of only a 21-day training period and still saw similar improvements with a shorter training period.

Yoga has also shown to be beneficial in enhancing task performance on activities that require both physical and cognitive demands. Subramaniam and Bhatt (2017) investigated how yoga affects cognitive motor interference. This is defined as an interference in mental processing when an individual is trying to complete a cognitive and physical task at the same time. This study utilized balance control tasks to assess stability, motor control, and sensory organization amongst yoga practitioners versus non-yoga practitioners. Results showed that individuals who practiced yoga performed better in all balance tasks across all conditions, cognitive and motor tasks alike, and used fewer cognitive and motor resources than non-yoga practitioners (Subramaniam & Bhatt, 2017). Thus, yoga was shown to reduce cognitive motor interference for maintaining balance control. This implies that a yoga-practitioner will be able to perform better on activities that require both cognitive and physical demands from the individual. Our project hopes to provide these cognitive advantages to individuals who would truly benefit from it, such as adults with ID. These studies are particularly relevant to our study as this population is born with diminished cognitive abilities. By implementing activities that will improve and increase intellectual functioning, our project will address factors that are essential in improving the well-being of those with ID.

### **Improved Quality of Life**

Although yoga-based exercises have been found to improve physical and cognitive functioning, they have also been found to improve quality of life. Tulloch, Bombell, Dean and Tiedemann (2018) conducted a systematic review of 12 randomized control trials that focused on the impact of yoga-based exercise on health-related quality of life (HRQOL) and mental well-being in 60 to 75-year-old adults. The systematic review only incorporated trials that used physical yoga as an intervention, which included Vinyasa yoga. Participants were involved in 45-90 minute yoga sessions 1-3 times a week for 8-24 weeks. They found HRQOL had a medium effect size, and mental well-being had a small effect size (Tulloch et al., 2018). Ross et al. (2016) conducted a qualitative study to address the psychosocial changes related to participation in yoga in women aged 35-67. The study found that participating in yoga provided individuals with a new mindset regarding their health. Participants self-reported increased mindfulness, focus, mood, emotional stability, reduced stress, and increased self-esteem and self-acceptance (Ross et al., 2016). These studies support the idea that physical yoga-based exercises are conducive to enhancing HRQOL and mental well-being in older adults.

One aspect of quality of life that is often overlooked is sleep quality. Rshikesan et al. (2017) conducted a randomized controlled trial. This trial included a 14-week yoga program for obese adult men aged 18-60 years old. The aim of the study was to see how performing yoga would affect sleep quality and body composition. The 14-week yoga program was 90 minutes a day for 5 days each week. Overall, they found that the yoga program led to significant improvements in sleep quality and in body composition parameters. The authors discuss the relationship between stress, sleep quality and obesity, and believe that increased stress increases obesity while decreasing sleep quality. Yoga

has been used to help reduce stress in previous studies. Improved stress levels could also lead to increased quality of sleep.

Yoga can be used to help people with disabilities to increase their confidence by improving their quality of life through completing daily tasks. In a study by Nejati, Esfahani, Rajezi Rahmani, Afrookteh, and Hoveida (2016), a yoga program was made for individuals with multiple sclerosis to evaluate quality of life and fatigue. The program used in this study is called the mindfulness-based stress reduction and is done over a course of 8 weeks for 2 hours every session. The goal of this program was to assess how yoga could help individuals cope with life stressors through relaxing the body and learning mindfulness skills. The experimental group reported having less fatigue and an overall improved quality of life (Nejati et al., 2016). The article mentions other studies that showed the mindfulness-based stress program benefiting other similar studies in mindfulness such as Henderson et al.'s study on mindful intervention on breast cancer patients (2012).

### **Reduction in Anxiety**

Stress can lead to symptoms such as anxiety and depression. Adults with autism spectrum disorder actually have higher psychological distress and symptoms in comparison to the general population (Lever & Geurts, 2016). Common disorders such as anxiety, mood disorders, and social phobia are especially prevalent in the young and middle adulthood, approximately age 18-45 (Lever & Geurts, 2016). Research has found that yoga and meditative practices can help reduce the severity of these symptoms. In a study done by Lemay, Hoolahan, and Buchanan (2019), a six-week yoga program was implemented to assist college students, aged 19-23, with reducing stress and anxiety. The yoga program occurred once a week for 60 minutes and students completed pre- and post-intervention questionnaires to evaluate their outcomes. They found that participants scored lower on stress and anxiety while scoring higher on mindfulness after completing the program. The program implemented by Lemay et al. (2019) was a pilot program done to evaluate the feasibility of the study design, and this study suggested that yoga does reduce stress and anxiety. It is important to note Lemay et al. (2019) referenced other researchers that have conducted studies using yoga guided interventions that yielded similar results. Erogul, Singer, McIntyre, and Stefanov (2014) also used college students for 8 weeks instead of 6 weeks. The study implemented a home-based yoga program using instructional videos for the participants. The results of this study showed that the use of yoga can reduce anxiety, stress, and increase mindfulness (Erogul et al, 2014). Lemay et al. (2019) reference Warnecke, Quinn, Ogden, Towle, and Nelson's 2011 study on yoga intervention using audio tapes that had yoga pose instructions. Using the same methodologies as Lemay et al. (2019)—except for the usage of audio to guide the participants step by step—the results of this study indicated that adopting yoga can improve stress and anxiety. The comparison of these studies demonstrates that yoga not only reduces anxiety and stress levels, but it also has other benefits such as mindfulness and a better outlook on stressful events.

In addition to the ways yoga can decrease anxiety, Dhananjai, Sadashiv, Tiwari, Dutt, and Kumar (2013) researched the possible effects of yoga on psychological distress and obesity, and found that yoga decreased anxiety and depression in obese individuals. In the study, there were 272 participants between the ages 20-45, 205 of whom were put in the yoga group, while the other 67 participants were put in an aerobic group. The

groups were assigned by the researchers through eligibility screening based on health conditions. After 30 days, the participants in the yoga group showed improvements, while the aerobic group did not show improvements until day 90. The results showed that anxiety and depression decreased significantly more in the yoga group than in the aerobic exercise group. The study concluded that by treating the psychological component of obesity, obese individuals can improve their well-being by modifying their lifestyle (Dhananjai et al., 2013). The study had a large sample size which was demographically and socioeconomically matched between the two groups. These factors made the two groups easily comparable because there were no external factors that made the participants different except gender. This correlation between psychological distress and obese individuals is important to understand for those at risk for obesity, such as individuals with ID.

Yoga can be used as a tool to improve psychological health. For instance, Maddux et al. (2018) focused on measuring the effects of yoga on stress and anxiety among 90 employees of a university who reported moderate-to-high stress. Participants were randomly assigned to 8 or 16 consecutive weeks of power yoga, which is yoga found in gyms or fitness centers, twice a week for an hour. The crossover group that practiced yoga for only 8 weeks and the group that participated in 16 weeks of yoga both demonstrated decreases in anxiety on the Hospital Anxiety and Depression Scale. When compared to the crossover group, the 16 week yoga group showed significant decreases in stress, depression, and anxiety, and significant increases in general psychological health and well-being (Maddux et al., 2018). It has been shown that participating in yoga can reduce a person's anxiety, thus, through the creation and implementation of an OT based yoga manual, the psychological health and quality of life of participants could be improved.

### **Statement of Purpose**

Yoga has been shown to improve quality of life, flexibility, endurance, and cognitive performance in adults without ID. However, little is known as to the effects of these factors for individuals aged 18 to 40 who have ID. There is also a lack of evidence regarding the benefits of a staff training program designed to teach our population of study. In addition, there are no known programs that utilize an evidence-based yoga curriculum specifically designed for adults with ID. The purpose of our study was to create a manual designed specifically for OTs to implement a community-based Vinyasa yoga program for individuals with ID. This manual will enable instructors to become more knowledgeable in the proper execution of all poses, how to upgrade and downgrade certain positions, and understand how to facilitate each yoga session to cater to this population. Our hope is that by educating others on how to implement a *just right* challenge for their clients, Vinyasa yoga will become more dynamic and sustainable for occupational success and in turn, individuals will show strides in endurance, flexibility, quality of life, and cognition.

### **Program Implementation**

This manual is designed to have a total of 20 meetings occurring at a minimum of two times per week for a duration of 45 minutes to one hour. On the first two days of implementation caregivers and any other staff will attend orientation training about the primary muscle groups and how to create the proper challenge for the participant. In addition, the caregivers and staff will be educated about how to safely and properly

facilitate movement. This will include teaching how to apply gentle pressure to the appropriate areas of control to facilitate the desired movement. These first two meetings can be expected to last up to one hour.

The third meeting is the first time that adults with ID will be introduced to each other and the staff. Caregivers and volunteers will also be present at this time. This is where all initial data will be gathered. The suggested measurements to be collected at this time are as follows: resting heart rate, resting blood pressure, flexibility, grip strength, cardiovascular endurance, level of anxiety, level of intelligence, and level of psychosocial well-being. These measurements will be taken once more after the participants have completed the yoga program.

During the fourth meeting, the lead therapist will introduce the four core yoga poses with handouts where the caregivers or legal representatives can take notes about how to make appropriate adjustments. During the introduction to each pose, the pose will be verbally explained and visually demonstrated and then each individual will have an opportunity to work with their caregiver and volunteers to practice the core poses. While the individuals are practicing the core poses the lead therapist and volunteers will go around to help with any adjustments that need to be made to best fit the participants' needs.

The remaining meetings the participants will learn three new poses until all sessions have been completed. Week eight will be used to go over any poses that were particularly difficult for the participants and week nine and the first session of week 10 will be used to go through both sun salutations. These meetings will be one hour long and held at least twice a week to ensure consistency in the practice of the Vinyasa yoga poses. The new poses that are introduced during the remaining meetings, handouts will be provided so that practice may continue at home. The final session in week ten is when post-intervention measurements will be taken.

### **Session Schedule**

Week 1:

Session 1: Introduction, Caregiver Education

Session 2: Caregiver Education

Week 2:

Session 1: Caregiver Education

Session 2: Pre-Intervention Measurements

Week 3:

Session 1: Mountain Pose, Reach Arms Up, Standing Forward Fold,

Session 2: Halfway Lift Pose, High Plank Pose\*, Low Plank Pose \*

Week 4:

Session 1: Upward Facing Dog Pose\*, Downward Facing Dog Pose\*, Chair Pose

Session 2: Warrior One Pose, Warrior Two Pose, Extended Side Angle Pose

Week 5:

Session 1: Triangle Pose, Pyramid Pose, Wide Leg Forward Fold

Session 2: Reverse Warrior Pose, Crescent Lunge Pose, Warrior Three Pose

Week 6:

Session 1: Prayer Twist Pose, Eagle Pose, Dancer's Pose, Tree Pose

Session 2: Tree Pose, Child's Pose, Seated Forward Fold Pose

Week 7:

Session 1: Bridge Pose, Reclined Bound Angle Pose, Happy Baby Pose

Session 2: Supine Twist Pose, Corpse Pose, Easy Pose

Week 8:

Session 1: Review Pose Flow with Sun Salutation A

Session 2: Review Pose Flow with Sun Salutation A

Week 9:

Session 1: Review Pose Flow with Sun Salutation B

Session 2: Review Pose Flow with Sun Salutation B

Week 10:

Session 1: Review Pose Flow with Sun Salutation A or B

Session 2: Post-Intervention Measurements

\* Core Pose

### **Materials**

- Open space facility
- Yoga mats, block, towel
- Bottle of water
- Vinyasa yoga instructor
- Pre/Post Test Supplies
  - Hand Dynamometer
  - Sit and reach box
  - Stopwatch
  - Large enough space to complete cardiovascular endurance test of your choice
  - Blood pressure cuff and stethoscope
  - Suggested Assessments
    - Costello-Comrey Depression and Anxiety Scales (anxiety scale only)
    - Test for Non-Verbal Intelligence (TONI)
    - Psychosocial Well-being Scale (PSWS)
    - Resting heart rate
    - Resting blood pressure
    - Grip strength
    - Flexibility



**Pose Flow**

1. Start with Breathing (Pranayama) & Meditation
2. Warm-Up with Sun Salutations (Sun A and Sun B)
3. Additional Standing/Balancing Poses
4. Additional Seated Poses
5. Closing/Namaste

**Sun Salutation A**

- Mountain Pose (Tadasana)
- INHALE: Reach Arms Up (Hasta Tadasana)
- EXHALE: Standing Forward Fold (Uttanasana)
- INHALE: Halfway Lift Pose (Ardha Uttanasana)
- EXHALE: High Plank Pose (Dandasana)
- CONTINUE TO EXHALE: Low Plank Pose (Chaturanga Dandasana) (Bend elbows to 90\*)
- INHALE: Upward Facing Dog Pose (Urdhva Mukha Svanasana)
- EXHALE: Downward Facing Dog Pose (Adho Mukha Svanasana)
- INHALE: Halfway Lift Pose (Ardha Uttanasana)
- EXHALE: Standing Forward Fold (Uttanasana)
- INHALE: Reach Arms Up (Hasta Tadasana)
- EXHALE: Mountain Pose (Tadasana)

**Mountain Pose (Tadasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Reach Arms Up (Hasta Tadasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Standing Forward Fold (Uttanasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Halfway Lift Pose (Ardha Uttanasana)**



| Modifications | Notes |
|---------------|-------|
|               |       |

**High Plank Pose (Dandasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Low Plank Pose (Chaturanga Dandasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Upward Facing Dog (Urdhva Mukha Svanasana)**





| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Downward Facing Dog (Adho Mukha Svanasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Sun Salutation B**

- Mountain Pose (Tadasana)
- INHALE: Chair Pose (Utkatasana)
- EXHALE: Standing Forward Fold (Uttanasana)
- INHALE: Halfway Lift Pose (Ardha Uttanasana)
- EXHALE: High Plank Pose (Dandasana)
- CONTINUE TO EXHALE: Low Plank Pose (Chaturanga Dandasana)
- INHALE: Upward Facing Dog Pose (Urdhva Mukha Svanasana)
- EXHALE: Downward Facing Dog Pose (Adho Mukha Svanasana)
- INHALE: Warrior One Pose (Virabhadrasana I)
- EXHALE: Low Plank Pose (Chaturanga Dandasana)
- INHALE: Upward Facing Dog Pose (Urdhva Mukha Svanasana)
- EXHALE: Downward Facing Dog Pose (Adho Mukha Svanasana)
- INHALE: Warrior Two Pose (Virabhadrasana II)
- EXHALE: Low Plank Pose (Chaturanga Dandasana)
- INHALE: Upward Facing Dog Pose (Urdhva Mukha Svanasana)
- EXHALE: Downward Facing Dog Pose (Adho Mukha Svanasana)
- INHALE: Halfway Lift Pose (Ardha Uttanasana)
- EXHALE: Standing Forward Fold (Uttanasana)
- INHALE: Chair Pose (Utkatasana)
- EXHALE: Mountain Pose (Tadasana)
-

**Chair Pose (Utkatasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Warrior One Pose (Virabhadrasana I)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Warrior Two Pose (Virabhadrasana II)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

## Variations to Sun Salutation B

Adding in variation to Sun Salutation B: This is where the instructor becomes creative picking poses in any order that flow together.

- Extended Side Angle Pose (Utthita Parsvakonasana)
- Triangle Pose (Utthita Trikonasana)
- Pyramid Pose (Parsvottanasana)
- Warrior Two Pose (Virabhadrasana 2)
- Wide Leg Forward Fold (Prasarita Padottanasana)
- Reverse Warrior Pose (Parvritta Virabhadrasana)
- Crescent Lunge Pose (Anjaneyasana)
- Warrior Three Pose (Virabhadrasana)
- Prayer Twist Pose: Chair with spine twist prayer hands (Parvritta Utkatasana)

**Extended Side Angle Pose (Utthita Parsvakonasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |



**Triangle Pose (Trikonasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Pyramid Pose (Parsvottanasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Wide Leg Forward Fold (Prasarita Padottanasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Reverse Warrior Pose (Parivrtta Virabhadrasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Crescent Lunge Pose (Anjaneyasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Warrior Three Pose (Virabhadrasana III)**



| Modifications | Notes |
|---------------|-------|
|               |       |

**Prayer Twist Pose (Parivrtta Utkatasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Standing/Balancing Poses**

Standing Balancing poses: Instructor creatively picks poses in any order that flow together

- Eagle Pose (Garudasana)
- Dancer's Pose (Natarajasana)
- Tree Pose (Vrksasana)



**Eagle Pose (Garudasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Dancer's Pose (Natarajasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Tree Pose (Vrksasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

### **Seated Poses**

Seated Poses: Cool down. Instructor creatively picks flows.

- Child's Pose (Balasana)
- Seated Forward Fold Pose (Paschimottanasana)
- Bridge Pose (Setu Bandha Sarvangasana)
- Reclined Bound Angle Pose (Supta Baddha Konasana)
- Happy Baby Pose (Ananda Balasana)
- Supine Twist Pose (Jathara Parivartanasana)

**Child's Pose (Balasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Seated Forward Fold Pose (Paschimottanasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Bridge Pose (Setu Bandha Sarvangasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Reclined Bound Angle Pose (Supta Baddha Konasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |



**Happy Baby Pose (Ananda Balasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Supine Twist Pose (Jathara Parivartanasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Closing**

- Corpse Pose (Savasana)
- Easy Pose (Sukhasana)
- Namaste-End

**Corpse Pose (Savasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Easy Pose (Sukhasana)**



| <b>Modifications</b> | <b>Notes</b> |
|----------------------|--------------|
|                      |              |

**Table of Pose Modifications**

Table 1

*Pose Modifications*

| Pose Name                  | Traditional Pose Name | Upgrade   | Downgrade  |
|----------------------------|-----------------------|---|--|
| Mountain Pose              | Tadasana              | 1. Use one hand to hold on onto a chair while the other hand reaches up<br>2. Sit in a chair with both arms raised above the head | 1. Close your eyes<br>2. Stand on one leg<br>3. Close your eyes and stand on one leg   |
| Standing Forward Fold Pose | Uttanasana            | 1. Bend your knees<br>2. Bend halfway without touching the floor. Use a chair for support   | 1. Place your hands in line with your ankles or further behind to get more of a hamstring stretch.<br>2. Bring your head closer to the floor/mat |
| Halfway Lift Pose          | Ardha Uttanasana      | 1. If unable to balance straight up, you can use the back of the wall to lean against   | 1. Reach down to the floor as much as you can  |

|                 |                      |   |  |
|-----------------|----------------------|---|--|
|                 |                      | 2. Rest your hands on a stool or block so that you have more balance  | 2. Instead of resting your hands on your knees you can hold a medicine ball parallel to your shoulders |
| High Plank Pose | Dandasana            | <p>1. Place the palms on a chair or elevated surface</p> <p>2. While palms are on elevated surface bend knees so that the body (from knees to head) is in one straight line</p> <p>3. Place the hands on the ground and bend the knees so that the body (from the knees to the head) is in one straight line.</p> | <p>1. Lift one leg</p> <p>2. Increase the time to hold the plank</p>                                   |
| Low Plank Pose  | Chaturanga Dandasana | <p>1. Execute plank from knees instead of feet</p> <p>2. Have a wider stance</p>  | <p>1. Lift one leg</p> <p>2. Lower down into low plank slowly and</p>                                  |

|                        |                        |  |  |
|------------------------|------------------------|--|--|
|                        |                        | with the arms so that they are wider than shoulder-width apart                             | with control   |
|                        |                        | 3. Lower body onto the ground so that you are lying on your belly                          | 3. Move hand positioning to planking on knuckles   |
|                        |                        | 4. Place palms on the wall or steady surface like a counter                                | 4. Increase hold time  |
|                        |                        | 5. Place pillow/blanket/towel or supporting object underneath chest                        |  |
| Upward Facing Dog Pose | Urdhva Mukha Svanasana | 1. Place yoga blocks underneath each hand  | 1. Sustain the position for one minute. Gradually increase time as client builds endurance |
|                        |                        | 2. Tuck your toes to help elevate the thighs off the floor                                 | 2. Lift one leg. Alternate after 10 seconds  |
|                        |                        | 3. Roll a blanket and place it underneath your thighs to help assist in bearing the weight |  |



4. Place a thick blanket roll below your upper thighs. Lightly rest your thighs on this roll as you press the tailbone closer to the roll

Downward Adho Muka

Dog Pose Svanasana

1. Add support. Place a yoga block book or towel underneath the client's hands so they do not have to completely reach the floor. You can also place hands/forearms on a chair or on a wall instead of the ground.

2. Bend knees

3. Raise heels. Roll up the yoga mat under the client's

1. Reach further out with your hands while maintaining heels flat on the floor.

2. Raise one leg or one arm off of the mat. You can also have the client raise their right arm forward and lift their left leg (or vice versa) off the mat at the same time.

|                  |                  |   |   |
|------------------|------------------|---|---|
|                  |                  | heels to provide support.   |   |
| Chair Pose       | Utkatasana       | <p>1. Use the wall as support if the client is having difficulty balancing or maintaining the pose</p> <p>2. If your arms cannot fully extend upwards you can stretch your arms in front of you, aligning with your chest</p> | <p>1. The client can have a medicine ball in between his or her knees as well as hold a medicine ball in both hands while extending the arms upwards</p> <p>2. Stand on your toes while in chair pose</p> |
| Warrior One Pose | Virabhadrasana I | <p>1. Decrease the bend in the front leg</p> <p>2. Decrease the width of the stance</p> <p>3. Allow the back foot to turn out</p> <p>4. Place the hands on the hips</p> <p>5. Hold onto a chair</p>                           | <p>1. Deepen the bend in the front leg</p> <p>2. Hold a weight overhead</p> <p>3. Increase the width of the stance</p>  |

|                                |                           |   |  |
|--------------------------------|---------------------------|---|--|
|                                |                           | for stability   |  |
| Warrior<br>Two Pose            | Virabhadrasana II         | <ol style="list-style-type: none"> <li>1. Decrease the bend in the front leg</li> <li>2. Decrease the width of the stance</li> <li>3. Place the hands on the hips</li> <li>4. Hold onto a chair for support</li> </ol>  | <ol style="list-style-type: none"> <li>1. Deepen the bend in the front leg</li> <li>2. Hold the arms out with palms facing up</li> </ol>   |
| Extended<br>Side Angle<br>Pose | Utthita<br>Parsvakonasana | <ol style="list-style-type: none"> <li>1. Place same side hand on top of the front thigh and straighten arm</li> <li>2. Place the same side elbow on top of the front thigh</li> <li>3. Place a block or towel on the ground as lifted support, if you cannot independently reach ground</li> </ol> | <ol style="list-style-type: none"> <li>1. Hover the bottom hand above the ground instead of using it as a support</li> <li>2. Bind the bottom arm underneath and around the front thigh so that the hand is now behind your back</li> <li>3. Complete bind by dropping top arm to the back and intertwining fingers with bottom</li> </ol> |

|                              |                            |  |  |
|------------------------------|----------------------------|--|--|
|                              |                            | 4. Change gaze to<br>facing the ground   | arm  |
|                              |                            | 5. Change gaze to<br>facing the wall   |  |
| Triangle<br>Pose             | Utthita Trikonasana        | 1. Place a block or<br>towel on ground as<br>heightened support, if<br>you cannot<br>independently reach<br>ground | 1. Extend both arms<br>straight overhead so<br>that both hands are<br>reaching towards the<br>wall |
|                              |                            | 2. Use a wall or chair<br>as support for hand  |  |
|                              |                            | 3. Place hand on knee<br>instead of the ground   |  |
|                              |                            | 4. Change gaze to<br>facing the ground   |  |
|                              |                            | 5. Change gaze facing<br>the wall  |  |
| Wide<br>Forward<br>Fold Pose | Prasarita<br>Padottanasana | 1. Place each hand on<br>a yoga block  | 1. Interlace your fingers<br>behind your back and  |
|                              |                            | 2. Bend your knees   | bring your arms/hands  |
|                              |                            | 3. Decrease the  | up toward the ceiling.   |

|                            |                            |  |  |
|----------------------------|----------------------------|--|--|
|                            |                            | distance between<br>your feet  |  |
| Reverse<br>Warrior<br>Pose | Viparita<br>Virabhadrasana | 1. Straighten the front<br>leg or both legs<br>2. Decrease the width<br>of the stance<br>3. Place hands on hips<br>4. Use a chair for<br>support under the<br>bent leg | 1. Bend the top arm so<br>that the elbow is<br>pointing towards the<br>sky. Lower your hand<br>behind your back<br>2. Increase the width of<br>the stance  |
| Crescent<br>Lunge<br>Pose  | Anjaneyasana               | 1. Deepen stance and<br>lower the hips toward<br>the ground<br>2. Arch back and<br>reach farther with the<br>arms  | 1. Place forward thigh<br>against a chair<br>2. Place one hand on a<br>chair for support<br>3. Lower the lunge by<br>placing one knee on the<br>floor for added support<br>4 Place hands on hip<br>5. Place hands on<br>ground |
| Prayer<br>Twist Pose       | Parvritta<br>Utkatasana    | 1. Sit in a chair to<br>perform  | 1. Sit deeper into the<br>squat  |

|            |            |  |   |
|------------|------------|--|---|
|            |            | 2. Hover the elbow over the knee                           | 2. Open the arms so that one arm is reaching towards the sky and the other to the earth |
| Eagle Pose | Garudasana | 1. Bind only the legs                                      | 1. Squat lower  |
|            |            | a. Bring arms to attention (palms together at chest level) | 2. Extend arms higher toward the ceiling  |
|            |            | b. Bring arms to side                                      | 3. Bring gaze up  |
|            |            | c. Use a sturdy surface or wall as support for arms        |   |
|            |            | 2. Bind only the arms                                      |   |
|            |            | a. Stand feet together                                     |   |
|            |            | b. Stand shoulder width apart                              |   |
|            |            | c. Cross arms/elbows but have back of                      |   |

hands touch

d. Only cross

forearms, wrists

and hands

e. Only cross

wrists and hands

Dancer's Natarajasana

Pose

1. Place your left

hand onto a chair.

Use your right hand

to grab the right

ankle. (or vice versa)

2. Sit on a chair and

place left foot flat on

the floor. While

sitting on the right

side of the chair, use

your right hand to

grab the right foot.

(or vice versa)

3. Use a wall to

maintain your

balance

1. Use contralateral

arm to grab onto your

ankle

Tree Pose    Vrksasana

1. Place your back against the wall if you're having difficulty balancing on one leg. The wall will support the position even with one leg lifted

2. Standing with both feet planted and keeping the same position of the arm in the air, having your hands clasped together

3. While seated on a chair, have one leg planted on the ground, and the other leg crossed over, resting the ankle on the knee. Maintain

1. Hold the pose for an extended amount of time, approximately 2 minutes

2. Laterally flex your trunk to the left or right while holding the lifted at the knee while balancing on the other foot

3. Laterally flex trunk to left your right with arms up



arms up in this

position

4. Rest one hand on the chair while being in the Tree Pose, one hand can be up in the air

Child's  
Pose      Balasana

1. Add upper body support. Place a rolled-up towel, blanket, or big pillow underneath the torso and head so that the client is lying down on it.

2. Add lower body support. Place blanket, towel, or pillow in between calves and bottom so that the hips are slightly raised. Torso and hips should be

1. Reach arms further out toward the front of the mat.

2. Reach both arms to one side of the mat so that both hands are placed off the mat.

Repeat with the other side.

3. Thread one arm under the opposite shoulder so that the arm is supine and placed outside the mat. Client's shoulder is pressed against the

level.

### 3. Positioning: Arms

are now wrapped

around the pillow,

towel, or blanket

instead of reaching

straight out in front.

Head is turned to the

side instead of

forehead to the

ground.

ground and the arms

create a 90-degree

angle. Repeat with

the other side.

### 4. Widen knees

toward the edges of

the mat so that hip

positioning is wider.

Lower the upper body

so that the chest is on

the ground. Bring the

chin up so that it rests

on the ground instead

of the forehead.

|            |                   |                         |                         |
|------------|-------------------|-------------------------|-------------------------|
| Seated     | Paschimottanasana | 1. Use a strap/towel    | 1. Clasp your hands     |
| Forward    |                   | to place around your    | around the soles of     |
| Fold Pose  |                   | feet.                   | the feet                |
|            |                   | 2. Bend your knees      | 2. Place a block at the |
|            |                   | and reach for your      | soles of your feet.     |
|            |                   | feet.                   | Reach for and hold      |
|            |                   | 3. Place a rolled-up    | onto the block instead  |
|            |                   | blanket underneath      | of your feet.           |
|            |                   | the knees               |                         |
| Bridge     | Setu Bandha       | 1. Place a cushion of   | 1. Complete the         |
| Pose       | Sarvangasana      | some kind under the     | movement longer         |
|            |                   | shoulders               | 2. Add weight to the    |
|            |                   | 2. Decrease the         | hips                    |
|            |                   | distance the hips       | 3. Complete single leg  |
|            |                   | come off the ground     | bridge                  |
|            |                   | 3. Decrease the time    | 4. Elevate the feet     |
|            |                   | the pose is held        |                         |
| Reclined   | Supta Baddha      | 1. Bring feet closer to | 1. Reach arms overhead  |
| Bound      | Konasana          | the body to decrease    | 2. Extend feet towards  |
| Angle Pose |                   | angle of legs           | edge of the mat to      |
|            |                   | 2. Cradle hands         | increase the angle      |
|            |                   | underneath back or      | of legs                 |

|            |                 |                       |                         |
|------------|-----------------|-----------------------|-------------------------|
|            |                 | hips for support      |                         |
|            |                 | 3. Place pillows and  |                         |
|            |                 | towels underneath the |                         |
|            |                 | knees to support the  |                         |
|            |                 | weight off the hips   |                         |
|            |                 | 4. Bring knees        |                         |
|            |                 | together              |                         |
| Happy      | Ananda Balasana | 1. Instead of         | 1. Add a medicine ball  |
| Baby Pose  |                 | stretching legs out,  | between knees           |
|            |                 | keep bent knees       | 2. Touch soles of feet  |
|            |                 | together if lacking   | together while in happy |
|            |                 | flexibility           | baby pose               |
|            |                 | 2. Do a half baby     |                         |
|            |                 | pose, instead of      |                         |
|            |                 | lifting both legs, do |                         |
|            |                 | one leg up while the  |                         |
|            |                 | other one is resting  |                         |
| Supine     | Jathara         | 1. Provide cushion    | 1. Straighten the leg   |
| Twist Pose | Parivartanasana | under the shoulders   | that is coming across   |
|            |                 | 2. Decrease the ROM   | the body                |
|            |                 | of the leg that is    | 2. Bring both arms      |
|            |                 | coming across the     | away from the body      |

|             |           |  |  |
|-------------|-----------|--|--|
|             |           | body   |  |
|             |           | 3. Bring both arms in                                  |  |
| Corpse Pose | Savasana  | 1. Place a pillow or blanket under the neck            | 1. Reach arms overhead<br>2. Place hands behind head |
|             |           | 2. Place a rolled-up blanket underneath the knees      |  |
|             |           | 3. Place a rolled-up blanket underneath the lower back |  |
|             |           | 4. Bring your knees up and place your knees together   |  |
|             |           | 5. Place your legs onto a chair for more support       |  |
| Easy Pose   | Sukhasana | 1. Add a cushion to sit on                             | 1. Hold hands above the head                         |
|             |           | 2. Separate the legs                                   | 2. Stack the legs                                    |
|             |           | 3. Sit with back against a wall                        |  |

---

4. Allow hands to rest  
on knees

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