Medical University of South Carolina

MEDICA

Post-Professional Occupational Therapy Doctorate - Innovations in OT Symposium: Transforming Possibilities into Practice

MUSC Division of Occupational Therapy

Spring 4-25-2023

The Effectiveness of Using a Community-Based Yoga Program to Increase Feelings of Inclusion in Adults with Intellectual Disabilities

Cynthia Schmidt

Medical University of South Carolina

Follow this and additional works at: https://medica-musc.researchcommons.org/muscotd-ppotd

Part of the Alternative and Complementary Medicine Commons, Disability Studies Commons, Leisure Studies Commons, and the Occupational Therapy Commons

Recommended Citation

Schmidt, Cynthia, "The Effectiveness of Using a Community-Based Yoga Program to Increase Feelings of Inclusion in Adults with Intellectual Disabilities" (2023). *Post-Professional Occupational Therapy Doctorate - Innovations in OT Symposium: Transforming Possibilities into Practice.* 8. https://medica-musc.researchcommons.org/muscotd-ppotd/8

This Paper is brought to you for free and open access by the MUSC Division of Occupational Therapy at MEDICA. It has been accepted for inclusion in Post-Professional Occupational Therapy Doctorate - Innovations in OT Symposium: Transforming Possibilities into Practice by an authorized administrator of MEDICA. For more information, please contact medica@musc.edu.

Yoga for YOU!

The effectiveness of using a community-based yoga program to increase feelings of inclusion in adults with intellectual disabilities.

PPOTD Candidate: Cynthia L. Schmidt

Capstone Advisor: Dr. Patricia Coker-Bolt

The Medical University of South Carolina

April 25, 2023

Yoga for YOU! The effectiveness of using a community-based yoga program to increase feelings of inclusion in adults with intellectual disabilities.

Background and significance:

Participation in leisure pursuits or recreational activities is an enjoyable part of life for many people with and without disabilities. Active participation in community programs can support adults getting at least the 150 minutes of moderate intensity exercise recommended per week to support their health (*Physical Activity Guidelines for Americans, 2nd Edition, 2018*). Health is impacted by many factors that are not directly addressed by medical care, but by the habits, built environment (including access to parks and recreation facilities), participating in physical activity opportunities, and having meaningful social interactions (Nash, 2021) among other aspects of social determinants of health. Social inclusion and community participation is such an important part of the human experience that it is considered a human right according to the United Nations Conventions on the Rights of Persons with Disabilities (United Nations Convention on the Rights of Persons with Disabilities [CRPD], 2022, Article 19), (Stuart, 2012). To further this goal, community parks and recreation departments have many outreach programs to encourage physical activity ranging from young children playing on little league teams, to adults participating in locally organized sports, to fitness programs designed to foster an active lifestyle for the elderly. Inclusion and social participation in community programs has been noted to have many positive benefits including an increased sense of well-being, feelings of improved quality of life, and over all positive attitudes (J. Merrells, Buchanan, & Waters, 2018), however people with disabilities do not participate in recreational activities or programs as frequently as typically abled peers. Persons with intellectual impairments participate in sports and physical activities at a rate of approximately 42% compared to the general population participation rate of 71% (Borland, Hu, Tonge, Einfeld, & Gray, 2020). This decreased participation then precludes many persons with disabilities from enjoying the positive social

aspects of engaging in a community activity, such as opportunities for making friends (J. Merrells et al., 2018). This can contribute to feelings of social isolation, and negatively impact their physical and mental health (Leigh-Hunt et al., 2017). Social exclusion has been defined as "the objective state of lack of social contact with others" (Leigh-Hunt et al., 2017, p. 159). Social inclusion is less well defined, as there are several differing opinions of what constitutes this phenomenon. For the purposes of this project, I will use the Centers for Disease Control and Prevention working definition as follows: "Disability inclusion allows for people with disabilities to take advantage of the benefits of the same health promotion and prevention activities experienced by people who do not have a disability." ("Disability Inclusion," 2020). The Americans with Disabilities Act of 1990 specifies that "A public entity shall administer services, programs, and activities in the most integrated setting appropriate to the needs of qualified individuals with disabilities." (Regulations, 1990). Inclusion of those with disabilities into the community fabric of this country is not only an ethical mandate, but a legal one as well.

The health benefits of regular participation in physical activities have been widely documented for people with disabilities as well as non-disabled persons. In addition to physical health improvements such as improved strength, flexibility, and cardiovascular fitness (*Physical Activity Guidelines for Americans, 2nd Edition*, 2018) those with intellectual or physical disabilities, diabetes, or obesity also benefit from an improved sense of well-being upon participation in community-based activities (Alexander, 2008; Thind, 2019; Webb, 2020). Lack of physical exercise can also be associated with increased obesity (*Physical Activity Guidelines for Americans, 2nd Edition*, 2018, p. 37). People with disabilities have more difficulty with weight control and maintaining an active lifestyle (Diaz, 2020). They are then affected by greater numbers of health issues related to these factors than non-disabled peers ("Disability and Obesity," 2019). An average of 51% of adults in the U.S. general population meet physical activity guidelines, compared to only approximately 18% of adults with intellectual disabilities

(IDs), and more than two thirds of persons with IDs participate in zero minutes of physical activity (Diaz, 2020). There can be a negative effect on one's health and well-being due to the many pathologies associated with both the conditions of being overweight and of limited physical activity ("Consequences of Obesity," 2022). People with disabilities are much more likely to be classified as obese than the general population, in fact approximately 50% of adults with disabilities are obese compared to 33% of the population without disabilities (Froehlich-Grobe, 2013). People with disabilities do not participate in active recreational opportunities as often as non-disabled peers. According to Healthy People 2020, 25.4% of the general U.S. population participate in no leisure time physical activity; however, surveys show that approximately 70% of individuals with intellectual disabilities do not regularly engage in *any* leisure type physical activity (Diaz, 2020). Therefore, the literature supports that lack of social inclusion in active leisure pursuits can have negative health effects both physically and psychologically (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015).

Unfortunately, it is not clear if programs organized by local parks and recreation programs fully include people with both physical and intellectual disabilities. Persons who are sedentary or obese are less likely than their more fit counterparts to engage in organized sports due to actual or perceived barriers such as facility accessibility, or social factors such as concerns about negative peer perceptions (Borland et al., 2020). Persons with disabilities who are not senior citizens may not desire engagement or even be welcomed into programs for the elderly, which often have minimum age restrictions, as well as different recommended exercise guidelines for those over 65 years of age (*World Health Organization Guidelines Approved by the Guidelines Review Committee*, 2010). Recreational activities have many benefits that would potentially positively impact the health of the people with disabilities. Many recreation programs offer social contact, stress relief, improved movement, strength, and balance abilities. Unfortunately, if one does not feel welcome or capable of participation in the type of recreational

activity available, then these benefits would not be realized (J. Merrells et al., 2018). Social isolation has been identified as a detriment to physical health, with those identifying as feeling "socially isolated" experiencing a 29% greater likelihood of premature death than persons who do not feel isolated (Holt-Lunstad et al., 2015). Evidence suggests that persons with intellectual disabilities enjoy exercising with non- disabled persons and that inclusive exercise options should be considered for this underserved population (Blick, Saad, Goreczny, Roman, & Sorensen, 2015).

Various approaches have been tried to improve levels of physical activity experienced by persons with disabilities. Involvement in Special Olympics has been noted as having a positive impact on improving levels of physical activity (Hsieh, 2017). However the Special Olympics is a competitive endeavor, and is geared toward those with intellectual disabilities, not a group reflecting the make up of the broader community at large. Another suggestion to improve physical activity for individuals with disabilities is to increase activity at home through video guided exercise programs. To further this aim, the National Center on Health, Physical Activity and Disability created an online assessment that helps adults with disabilities formulate an individualized 14 week on-line nutrition and exercise program (National Center on Health, 2022). Online programs can meet the needs of those who are unable or do not desire to leave their homes, but do not offer an opportunity for socialization or inclusion with the rest of one's community. Walking in a community setting (one's neighborhood or local walking tracks, etc) is free and does not require specific equipment, however individuals may have concerns about crime, traffic, or animals which impact their comfort level with this activity option (Omura et al., 2020), and this is often more of a solitary activity rather than a social one.

Many outdoor activities have been adapted to increase the participation of adults with disabilities in physically active leisure activities such as therapeutic riding (Land, Povalac, & Paul, 2002), adaptive hiking (James, Shing, Mortenson, Mattie, & Borisoff, 2018), and adaptive

paddle boarding or kayaking (Merrick et al., 2021). Programs such as these require substantial volunteer support and specialized equipment. Participants must be willing to interact with unpredictable terrain and changing circumstances which can limit the audience who may have the skills to engage in these leisure activities. Additionally, most of these adaptive sports programs are geared towards individuals with physical disabilities. Indoor physically active leisure pursuits have also been designed to address the needs of disabled persons to improve phsyical fitness. A pilot dance and exercise program for adults with disabilities revealed positive results and improvements in cardiovascular fitness, strength and body mass index (Martínez-Aldao, Martínez-Lemos, Bouzas-Rico, & Ayán-Pérez, 2019). Adaptive dance is more predictable and includes a social component, however has higher physical demands which could make participation difficult for previously sedentary persons. It is recommended that sedentary people begin exercise programs limiting the intensity of exercises while slowly increasing the time and rigor of the exercise (Traynor, K. 2016). This might be more challenging during a group dance activity.

Many active recreation programs can offer opportunities for increased social contact, and activities that may address stress relief, improved movement, strength, and balance abilities. It has been recommended that physical activity programs for older adults with intellectual disabilities be enjoyable, include social participation, are adapted to the person's ability level, offer peer support, as well as choice by the persons participating (Carmeli & Imam, 2014). An individual must choose to engage in an active recreational pursuit. If they do not, due to feeling unwelcome or that they are incapable of participation in the type of recreational activity available, the potential positive health effects would not be gained (J. Merrells et al., 2018).

Yoga has been shown to have positive effects on participant's levels of flexibility, decreased stress and improved sleep among other perceived benefits (Thind, Guthrie,

Horowitz, Conrad, & Bock, 2019). Yoga has been used successfully with many various populations, including children, elderly, able bodied and individuals with physical or intellectual disabilities (Reina et al., 2020). Studies have demonstrated that participation in yoga can result in increased upper and lower body strength, lower body flexibility, agility, and balance (Reina et al., 2020); (Regan, 2022). Yoga has been shown to improve strength and flexibility more than conventional exercise and stretching programs in older, sedentary adults (Gothe & McAuley, 2016). For insufficiently active persons (people who participate in some moderate- or vigorousintensity physical activity but less than the recommended minutes for meeting the key guidelines for adults), the greatest health gains during exercise occur when persons who have been sedentary move from no activity to moderate activity levels (U. S. Department of Health and Human Services, USA, 2018). Research has demonstrated that yoga groups occurring once a week are as effective in reducing back pain as twice weekly groups (Saper et al., 2013), supporting the effectiveness of a one-time per week yoga group. People with disabilities frequently cite transportation difficulties as a barrier to participation (Borland et al., 2020; Labbe, Miller, & Ng, 2019). Limiting the need for obtaining transportation resources by either supplying transportation or providing activities at the locations of the disabled persons may increase participation. Yoga can easily be graded to the abilities of the participant, and the nature of the exercises performed can safely meet the needs of sedentary persons trying to gradually increase their activity levels (Cramer et al., 2015; Reina et al., 2020). Yoga in a group environment also offers a structured environment for members to socialize (Thind et al., 2019) however has not been investigated as a method to facilitate interactions between differing populations, such as the disabled with the non-disabled. Actually, it has been pointed out by Merrells et al (J. Merrells et al., 2018) that a deficiency in current research on social inclusion of persons with disabilities in community recreation programs is that the individuals with disabilities have not been asked if they feel included, and what aspects of their experiences supported this feeling.

Clemson's Parks and Recreation Department manages 12 parks and various activity programs; however, these are mainly organized sports leagues for youth and adults without disabilities, or senior citizen programs ("City of Clemson: Parks and Recreation Events and Programs," 2022). There are currently no inclusive active recreational and leisure programs available in the Clemson area designed to include both adults with and without disabilities. In fact, other than the Special Olympics program, there are no community organized active recreation programs offered in this geographical area for adults with disabilities at all. Pickens County has 10.4% of its population under the age 65 classified as being disabled ("Pickens County South Carolina Profile," 2022), and Clemson 5.7% of its population, according to the U.S. 2020 census (Census Bureau, 2021). This means Pickens County overall with a population of 132,229 people has approximately 13,355 citizens under the age of 65 who are disabled. While the specifics of the noted disabilities are not listed, the fact remains that a significant portion of the population (10.4%) does not have recreational programs designed either for them or adapted to include them with the non-disabled population. Yoga is an activity that can be adapted to many levels of ability, and has been successfully utilized with populations with intellectual disabilities (Reina et al., 2020). Yoga has been shown to have positive effects on participant's levels of flexibility, decreased stress and improved sleep among other perceived benefits (Thind et al., 2019). An inclusive community yoga program could meet several goals to address underserved populations: inclusion of both the physically and intellectually disabled in social programs, addressing obesity in the general and disabled populations with an accessible fitness program, and offering a method to address mental health issues that often accompany disability such as depression and anxiety (Pascoe, 2015) through an activity offering components of stress relief and social contact.

In the community of Clemson, SC there are public parks which provide an opportunity for active leisure and social participation for adults with and without

disabilities. Unfortunately, there are no formal, inclusive active leisure or exercise programs for adults with disabilities in the Clemson region. Persons with intellectual impairments participate in sports and physical activities at a much lower rate (42%) in comparison to the general population (71%) (Borland, Hu, Tonge, Einfeld, & Gray, 2020). The lack of engagement in community-based leisure activities limits adults with disabilities from enjoying the positive social benefits, such as opportunities for making new friends (Merrells et al., 2018). Studies have shown that this may contribute to feelings of social isolation, and negatively impact both physical and mental health (Leigh-Hunt et al., 2017). The aim of this capstone project was to develop and pilot an inclusive community-based yoga program to encourage participation of adults with and without disabilities. Further, data was collected to examine the change of perception of adults with disabilities who participated in the yoga program regarding their feelings about inclusion and if this program made them feel more included in their community.

The main stakeholders involved in this project were the city of Clemson Parks and Recreation Department, local adults with disabilities, and agencies that serve adults with disabilities. Pickens County Board of Disabilities and Special Needs was chosen as a representative of agencies which serve adults with special needs as it is the major local entity performing this service. It also serves a population of adults with varying but significant impairments who require the type of formal support services provided through its programming. I desired to involve adults who require a greater degree of support to demonstrate that inclusion can occur even when people need support to achieve community involvement, in contrast to persons who may be more capable of independent functioning. The clients of the PCBDSN day activity program were a good fit for this program so were selected to represent the adults with disabilities population.

In order to better understand the needs of the major stakeholders involved in this situation, various methods were utilized to gain additional information and formulate a plan to address the lack of inclusive active leisure opportunities in the Clemson area.

I interviewed Lindsey Watley, program director for the City of Clemson Parks and Recreation Department. Mrs. Watley confirmed they were trying to increase opportunities for inclusion of persons with disabilities in parks program, but needed help, and were very interested in a pilot program. She also identified some resources that could be used to support a pilot program, such as a community room, copy machine use, possible funding, and the Parks and Recreation website. I also interviewed Mrs. Elaine Thena, the executive director of the Pickens County Board of Disabilities and Special Needs (PCBDSN), and Mr. Derrick Jenkins, and Ms. Gloria Gambrell, co-directors of the PCBDSN day activity program. These people supplied me with background information for how individuals are accepted into the program, numbers of staff and clients, a tour of the facility, and an overview of the program. They also helped to identify a possible day and time for the program and were able to arrange for transportation and staffing for the off-site program to occur. A needs assessment using a REDCap (Harris, 2019) survey system was then accomplished in collaboration with the Pickens County Board of Disabilities and Special Needs. Adults with disabilities who participate in their day program and support staff were surveyed. There are typically 22 adults with disabilities that currently participate in the PCBDSN Day activity program. There are 11 direct support staff personnel. A total of 10 clients (45% of that specific population) and 8 day activity program support staff (73%) participated in the needs survey questionnaire process. The table below summarizes demographic information of the respondents.

Age range:	25 years to 65 years			
Average age:	38.5 years			
Gender:	50% female, 50% male			
Race:	20% African American, 80% Caucasian			
Diagnoses:	Intellectual disability 70%			
	Visual Impairment 20%			
	Physical Disability 10%			
	Hearing Impairment 10%			
Living situation:	40% in a group home, 60% in a family home			

Table 1: Pickens County BDSN Day Program Clients Demographics (n=10):

As pointed out by Merrells, Buchanan, and Waters (J. Merrells, Buchanan A., & Waters, R., 2018) in their systematic review of "The experience of social inclusion for people with intellectual disability within community recreational programs" (J. Merrells, Buchanan A., & Waters, R., 2018) there has been a lack of researchers asking the adults with intellectual disabilities if they *felt* socially included, and what components of the activity supported these feelings. To delve more deeply into this crucial topic, a series of questions to gain feedback on current levels of community participation and perceptions of inclusion were posed.

Figure 1 summarizes activities the disabled adults currently typically participate in within the community and their frequencies. The activities identified as occurring the most often are eating out, going grocery shopping, and going to church. How inclusive any of these activities are is open to speculation. Grocery shopping is typically performed more in a "parallel" situation with others nearby, but with minimal social interaction. Eating out is a social activity, but often only involving the people with whom you are eating, not members of the general community. Going to church is considered a more socially involved activity. However, upon closer examination of the figure it becomes apparent that many of the people responding to the survey participate in these activities zero times per month.

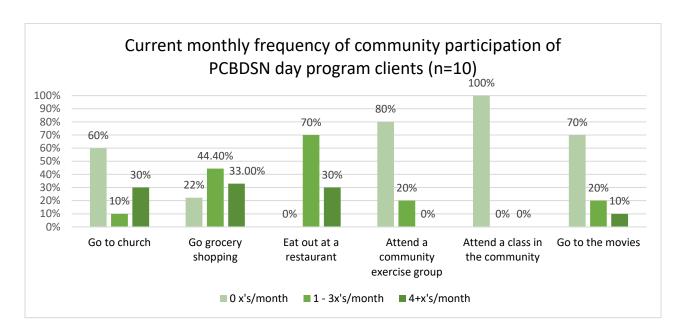


Figure 1. Current frequency per month of community participation of PCBDSN clients.

The people with whom the clients of the PCBDSN day program are doing most of their activities with are presented in Table 2. Clearly, the majority of social contact the adults with disabilities who are clients at PCBDSN are socializing with are either their families, or friends and staff from the day program. The general category of "people in the community" garnered zero responses. The response for *wanting* to make new friends, do new things, and go new places (figure 2) was overwhelmingly positive (90-100% of those surveyed indicated "yes"). This strongly suggests the clients of the PCBDSN day program have a desire to increase social connections and experience greater social inclusion.

Table 2. People with whom clients of the PCBDSN day program (n=10) currently socialize.

Who do you do activities with?	Frequency of responses:			
Family	80%			
Staff from PCBDSN	70%			
Friends from PCBDSN	30%			
Friends NOT from PCBDSN	20%			
People in the community	0%			

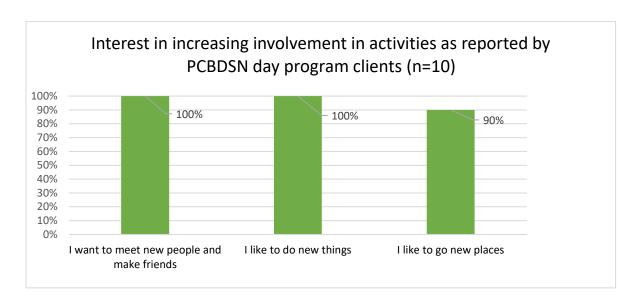


Figure 2. PCBDSN clients interest levels in increasing community involvement.

As seen in figure 3, the perception of current levels of being included within the general community and a desire to increase community involvement suggest there is a perceived need for activities which would offer greater community inclusion. Only 30% of respondents reported feeling "very much" part of the general community, while 70% "very much" reported wanting more involvement in the general community.

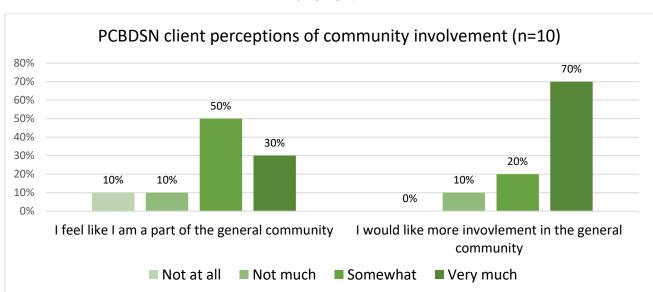
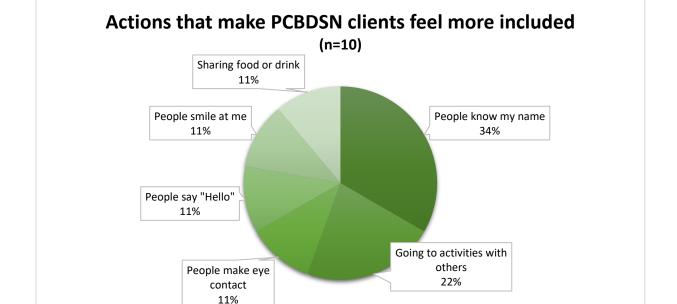


Figure 3. PCBDSN client perceptions of community involvement, and desire for increased involvement.

As the literature has shown there is a shortcoming in discovering if adults with intellectual disabilities feel included in communities, this researcher desired to find out what actions would lead the clients of the PCBDSN to have increased feelings of inclusion. Figure 4 displays these results. The highest two result categories were "people know my name" and "going to activities with others". Positive responses were also seen in the other categories of making eye contact, saying "Hello", being smiled at, or sharing food or drink. These are actions that most adults would interpret as welcoming and are not that hard to accomplish! These results suggest that by training staff at events to be more proactive in offering affirming social cues such as learning names, saying "Hello", and smiling at others, an increased feeling of inclusion might be achieved.



■ Going to activities with others ■ People make eye contact

■ Sharing food or drink

Figure 4. Social actions that make PCBDSN clients feel more included.

Staff members at the Pickens County Board of Disabilities and Special Needs were also surveyed for feedback. There are 11 persons employed as support staff for the Day program, a

■ People smile at me

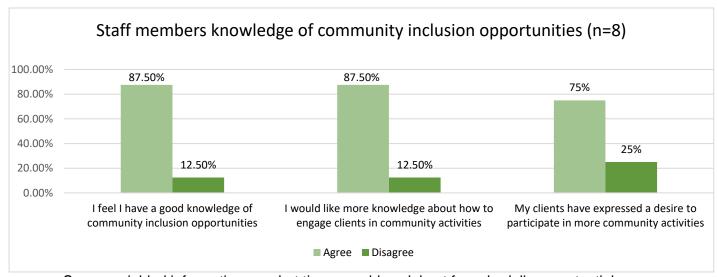
■ People know my name

■ People say "Hello"

total of 8 responses were obtained. Years of experience in this workplace ranged from less than 4 years to over 20 years, with 50% of responding staff members noting 1 – 4 years working for PCBDSN. When this information is viewed in light of the recent changes in social distancing and engagement related to Covid restrictions, one realizes some of these staff members may not have experience working in a time where community outings were more easily achieved for the clients in the day program. It is possible for these staff members, keeping their clients isolated is simply the norm.

Staff indicated that although they consider themselves as having a good knowledge of community inclusion opportunities for their clients, they would like more knowledge of how to further engage their clients in community activities. 75% of staff respondents also noted that their clients had expressed a desire for increased participation in community activities (figure 5).

Figure 5. Staff feedback on knowledge of community inclusion opportunities, and desire for community inclusion by their clients.



Surveys yielded information on what times would work best for scheduling a potential community activity. Additionally, barriers to community involvement were examined, with trends generally following information in the literature such as difficulty with transportation, funding, and

staffing; as well as community activities not being supportive of the specific needs of persons with disabilities. This information is summarized in figure 6.

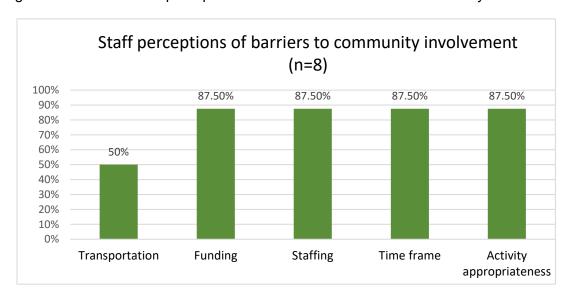


Figure 6. PCBDSN staff perceptions of barriers to their client's community involvement.

Some interesting juxtapositions did appear when examining the differing opinions of the adults with disabilities in the day program in comparison to their support staff. Figure 7 summarizes the differing views regarding levels of support needed to attend a community activity. It could be that staff feel it is their job to be there and support their clients with an overriding concern for their safety and success; or perhaps the clients are overestimating their degree of independence and self-efficacy.

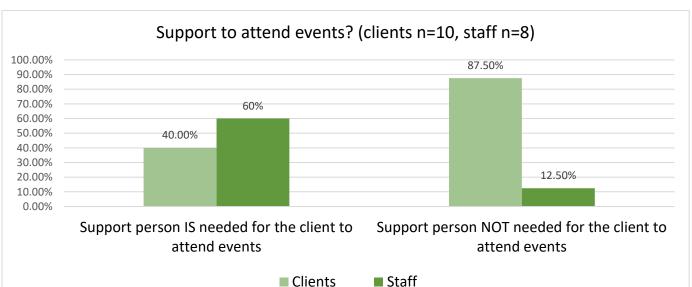
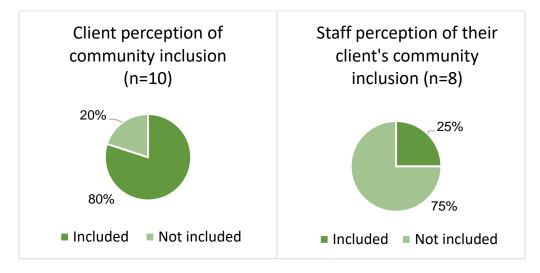


Figure 7. Differences in perceptions between PCBDSN staff and clients as to if support persons are needed when attending events.

Additionally, there is a disagreement in the way each group views the degree of community inclusion that is currently occurring. The staff members state that their clients are <u>not</u> socially included in local community activities (75% of responses). 80% of the adult clients answered that they feel they are "very much" or "somewhat" part of their general communities (figure 8). These questions are phrased slightly differently, which could account for the disagreements between the responses. However, it could also be that the more typically functioning adults who make up the support staff are aware of the vast number of opportunities that exist for all types of community involvement if one is capable of managing the accompanying factors such as affording the activity, having transportation available, maneuvering the cognitive, behavioral, and social hurdles for participation. It is also possible that the clients feel they are participating in the community to the degree they desire, and feel included within the "community" they identify as theirs. It has been pointed out in the literature that "the primary community from which a sense of community may be derived is unlikely to be the general community" for many with intellectual disabilities (Cummins & Lau, 2003). Therefore, one may feel very included by your own selected community, but be simultaneously viewed by someone else as being quite

isolated. The other question these differing opinions on how included the clients feel, versus how included the staff perceives them to be, is that even though the clients state they already feel included in the community, other feedback implies they would still like greater inclusion. The staff seems to recognize there is a need to increase inclusion, but there are barriers that interfere with improving this situation (refer to figure 6).

Figure 8. Differences between PCBDSN client and staff perceptions of the community inclusion of the clients.



Finally, the needs assessment offered a window into what types of active leisure pursuits clients of the PCBDSN Day Program might be interested in with the results summarized in figure 9.

Desired activities according to PCBDSN clients (n=10) 100% 80% 80% 70% 60% 60% 40% 40% 30% 20% 20% 0% Weight lifting Walking group Yoga group Swimming group Bicycling group Aerobics group group

Figure 9. Active leisure groups preferred by PCBDSN clients.

As can be easily determined, interest in a yoga group was high. This intervention/community activity was chosen due to the multidimensional positive impact it can offer participants (an opportunity to learn mindfulness, exercises that can affect both strength and flexibility, and a greater potential for using this type of group as a method of encouraging inclusion as the participants will all be doing the same activity within the same space at the same time). The other activities of interest might be used in the future to offer additional fitness opportunities to this group.

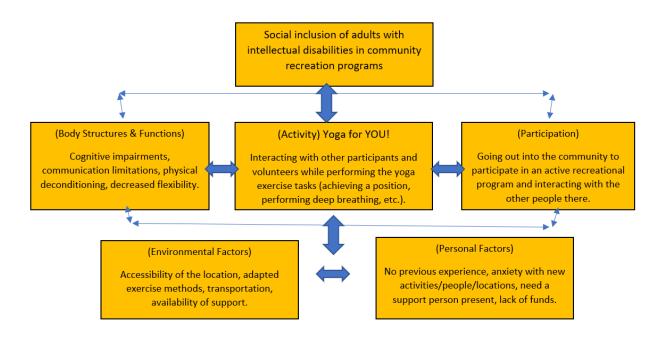
Viewing the accumulation of information shared via the results of the needs survey, a decision was made to propose a free, once weekly yoga group, occurring Friday mornings, held off site and using transportation provided by PCBDSN, and with several support personnel accompanying participants. The event was to be held off site from the PCBDSN Day program and to include members of the local community without disabilities, both factors designed to increase community participation and inclusion. Training was planned for volunteers to ensure strategies that make people feel included (as noted in the needs survey) were applied, such as greeting people by name, making eye-contact, or saying "Hello". The series of classes would welcome a group from the PCBDSN Day Program, as literature notes that for events to be beneficial for persons with intellectual disabilities, it should involve a supportive, dependable social structure (Cummins & Lau, 2003) which would be easier to elicit with a foundation in place of familiar persons.

Conceptual Framework:

The International Classification of Functioning, Disability and Health (ICF) framework was used as a model for observing the outcomes of this project. The ICF considers various inter-related aspects of functioning including body functions and structures, activities, participation, and environmental factors. "The ICF conceptualizes a person's level of functioning

as a dynamic interaction between her or his health conditions, environmental factors, and personal factors." It is a biopsychosocial model of disability, based on an integration of the social and medical models of disability ("International Classification of Functioning, Disability and Health (ICF)," 2022). This pilot program addressed a social determinant of health with a focus on participation, thus accounting for the interplay between the various factors considered by the ICF model was a good match. Additionally, the problem of many studies of community participation by people with intellectual disabilities not using validated frames of reference was mentioned by M. M. Verdonschot et al., and the ICF was specifically noted as "a valid theoretical framework for the study of participation in people with ID." (Verdonschot, De Witte, Reichrath, Buntinx, & Curfs, 2009)

Figure 10. The ICF framework as applied to the "Yoga for YOU!" program.



The Intentional Relationship (Taylor, 2020) conceptual practice model proposes the therapeutic use of self to apply the following principles: advocating, collaborating, empathizing, encouraging, instructing, and problem solving. This model focuses on the therapeutic use of self

and utilizing the social environment for increasing engagement. My project used a social environment to increase community engagement of adults with intellectual disabilities, so this model was an excellent match to this program. Approaches utilized in this model include:

- Advocating: I advocated for community inclusion of adults with intellectual disabilities.
- <u>Collaborating:</u> I collaborated with the City of Clemson Parks and Recreation Department and the Pickens County Board of Disabilities and Special Needs to pilot this program.
- Empathizing: I empathized with persons with disabilities who have decreased
 opportunities for community participation and encouraged empathy between the various
 program participants.
- Encouraging: I encouraged the city of Clemson parks and recreation department to do
 this program, the adult clients at the PCBDSN day program to participate, and the group
 in general to participate in ways that can build social connections.
- Instructing: Adapted approaches were used for instruction of the yoga activity, through
 collaboration with certified yoga instructors. A co-instructor was available for 1:1
 assistance as needed during instruction, and to demonstrate chair yoga techniques. An
 introduction video was supplied to the adults with disabilities to preview the activity.
 Staff and volunteers were instructed in best approaches for optimizing the experience.
- Problem solving: Problem solving was ongoing, supported by weekly feedback from formative surveys and observation of the activity. Collaboration occurred between the yoga program director (myself), the Clemson Parks and Recreation program director, the yoga instructors, and the support personnel from the PCBDSN day program to address unplanned developments.

Purpose:

The purpose of this capstone project was to demonstrate that an inclusive community program can be designed to offer active leisure pursuits opportunities for both adults with and without disabilities, and to improve feelings of community inclusion for intellectually disabled adults. This was accomplished through a pilot community yoga exercise program for adults with intellectual disabilities and without disabilities, in Clemson, SC: "Yoga for YOU: Yoga Outreach for the Underserved", in collaboration with the local parks and recreation authority. It also addressed a gap in the literature by directly asking the adults with disabilities if this activity made them feel included in the community.

It was proposed that an inclusive community yoga program could engage adults with and without disabilities in a community-based social activity, address improving general physical conditioning, and introduce mindfulness concepts in the disabled and non-disabled populations. The mindfulness aspect of yoga would offer a method to address mental health issues that often accompany disability such as depression and anxiety (Pascoe, 2015). Social inclusion can contribute to improved health and wellbeing. Community based active recreation programs can offer an opportunity for social inclusion for adults with intellectual disabilities.

Methods:

Participants:

There were three participant groups in this project: Adults with intellectual disabilities who are served by the Pickens County Board of Disabilities and Special Needs Day Activity Program, and choose to be included in the "Yoga for YOU!" pilot program. Community members who choose to participate in the "Yoga for YOU!" pilot program. "Yoga for YOU!" program staff such as myself and the program director for the Clemson Parks and Recreation

department, volunteers, support staff from the PCBDSN day activity program, and the yoga instructors.

All participants completed and signed the Clemson Parks and Recreation Department participation waiver. Total participation was to be capped at no more than 20 people. However, due to overwhelming enthusiasm for the project, this number was increased to a maximum of 30 participants (due to space considerations for the activity) and we did have 29 participants in our last session.

Materials and Procedures:

The Program director for the Clemson Parks and Recreation department filed for a "Dabo's All In Team" foundation grant in early fall 2022, to secure funding to support payment for yoga instructors. It was estimated that the program would require yoga picture cards for visuals, yoga mats, yoga blocks, yoga straps, T-shirts to identify staff members, and some funds for marketing this new program. Transportation costs need not be considered as PCBDSN had agreed to transport their clients free of charge to and from the event, and adults from the community participating in the program would be responsible for their own transportation. The facility/location was provided for free by the city of Clemson.

The program of weekly inclusive yoga classes lasting an hour total time each began January 20th, 2023 and ran for 8 consecutive weeks. Yoga classes were held weekly on Fridays from 10:00 – 11:00 am at the Clemson Fire Station #2, in the Community Room. Transportation and financial constraints can be a limiting factor for program participation by the intellectually disabled (Blick et al., 2015). This was problem solved by making the program free to all participants, and by utilizing Pickens County Board of Disabilities and Special Needs provided transportation. Student volunteers from the Clemson University Parks, Recreation, and Tourism department, the yoga instructors, and the city of Clemson

Parks and Recreation program director viewed an orientation video with information provided on the basics of sensory differences, "person first" approaches, the importance of obtaining consent prior to providing assistance, the physical layout of the facility, and the schedule of events. Behaviors which support feelings of inclusion as identified in the needs assessment completed by clients of the PCBDSN (making eye contact, using names, smiling, etc.) were also taught. The "Yoga for YOU!" pilot organizer (Cynthia Schmidt) maintained open lines of communication with staff and representatives of the PCBDSN to address concerns, and to be responsive to feedback gained through the weekly formative surveys. Topics which we addressed included the volume of the instructor's voice being hard for some participants to hear. We eventually purchased a blue tooth microphone which solved that issue. Some participants also noted it was somewhat hard to see the instructor demonstrating the chair yoga adapted moves, so we brought in a tripod and moved the camera which was used to project real time images onto 3 screens within the room which took care of that problem. The occupational therapist (myself) also helped staff understand that some behaviors they noticed (flapping hands for example) did not necessarily convey distress, but could also be an expression of excitement, and that the individual in question and his caregiver knew we were available for assistance if desired and also that they could leave the room at any time if the felt they needed a break. Discussions like these seemed helpful for staff members to feel comfortable in accepting some behaviors they may have previously been unfamiliar with.

Pre-participation questionnaires were used to gather demographic information, disability status, and activity level. PCBDSN clients also completed a pre-test using the Patient Reported Outcomes Measurement Information System (PROMIS) Satisfaction with Participation in Discretionary Social Activities v.1.0, Revised Short Form (E. A. Hahn, DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., Bosworth, H. B., Heinemann, A. W., et al., 2010); as well as the "Outcome Expectations for Yoga Scale" (Thind et al., 2017).

Adults without disabilities from the general community who signed up for the class also filled out a demographic questionnaire and completed a pre-test of the "Outcome Expectations for Yoga Scale" (Thind et al., 2017).

Post program feedback surveys were obtained from participants for feedback on the overall perception of the program, feedback on the value of yoga learning process, and feelings of inclusion. Data from participants who did not attend at least 4 classes was excluded from statistical analysis of pre-post test measures. Anecdotal comments and feedback remarks were documented from participants and staff to provide additional qualitative information. Attendance was tracked to ascertain rates of participation.

The environment:

The "Yoga for YOU!" class program was held at the community room in the Clemson Fire Station #2. Utilizing a city owned building in conjunction with the parks and recreation department was ideal, as other local organizations that wish to implement this model in the future will see it can be implemented with resources already within most communities. Accessibility was checked at this location prior to utilization. The station has handicapped accessible parking. The building is only one floor with no steps required for entry into the building or the community room. The walk from the parking area to the community room is short. Bathrooms have accessible stalls. There is an automated external defibrillator on site. If a fire alarm does go off, it would not be heard in the community room. The room was large enough to accommodate twice the predicted number of people who would be participating in the class, to allow for participants to spread out if they desired more personal space. It was also equipped with large screens to use with video projection, which were helpful to display real time images of the yoga instructor for participants in the back of the room or simply to offer additional visual support to those with hearing disabilities or those

who may need more visual support for motor planning difficulties. I also liked that the location was "The Community Room". I feel like this helped support the idea of community integration, rather than for instance having outside community members come to the day program site. The option of providing a yoga class at the PCBDSN location was considered, however this would not have supported the goal of social inclusion in a community inclusive environment, therefore was rejected.

The intervention:

Approximately 1 week prior to the first class, a short welcoming video was sent to the PCBDSN day program staff to show to participants. This video showed the building location, the classroom, the instructors, materials which would be used, and a short description of what to expect. The video also specifically mentioned that "We are looking forward to including you in our yoga class, and to getting to know you!" to set the tone for a welcoming, inclusive experience. Supplying information ahead of time is an effective way to decrease possible anxiety about a new experience. A typical session was planned to be one hour, with the yoga portion of the class approximately 55 minutes in length. After the very first class, the program director of the Clemson Parks and Recreation Department recommended adding a time to have a snack and socialize beginning 15 minutes before the actual start of the yoga class, to accommodate what we saw as a desire to talk prior to starting the class. This was instituted starting with the second class and was very well received by participants.

Therefore, the time allotted to the "Yoga for YOU!" class became 1hour 15 minutes.

Volunteers and staff were instructed to be on site at least 30 minutes prior to the scheduled start time to set up the room, put out the snacks, and to be ready with name tags and to greet participants. There was a sign in sheet available upon arrival. One yoga instructor led the class, with the co-instructor demonstrating chair yoga or other adapted

movements, as well as circulating around the room to offer assistance if desired and as needed. A small booklet of pictures of the poses performed was produced by taking pictures of one of the instructors performing the actual poses used in the class and made available to participants. The booklets could be used during class as additional visuals, taken home for participants to refer to during the week between classes for practice if desired, or to add familiarity with the class time procedures. The use of headphones was encouraged if needed to address sensory differences, however we had no participants take advantage of this option. The classroom was generally rather guiet with soft music which may have lessened the need for headphones. Participants were able to express choice and autonomy by choosing their own locations within the room, and if they wished to use a mat or a chair for class participation. Support persons were invited to attend also, as well as encouraged to participate in the yoga experience. Low volume calming music was played to support the exercises and add to creating the desired ambience. Lighting in the room was dimmed, actually usually turned off completely as windows allowed light to infuse into the room. This helped to focus visual attention to the video screens showing the instructor and to decrease ambient visual stimulation. The instructor welcomed participants, and gave each one a playing card to place by their mats. If the card was face up it indicated the participant was open to assistance, if face down it signified a desire to not have assistance. The class proceeded with a mixture of people choosing mats and chairs, which ever made them feel comfortable. Some people gradually changed from using a chair to using a mat as the class proceeded. At the completion of class 5 minutes was planned to do a short weekly door prize drawing, have a short message of gratitude for coming, gather items for leaving and completing a post class questionnaire if desired. Feedback forms were offered to participants every week to note brief impressions of the class so that adjustments could be made if needed for the next class. These formative assessments were used to collect data after each session to gain an understanding of the participant's impression of feeling included, over-all

comfort of the environment, general satisfaction, and to discover any concerns or unmet needs which should be addressed. After participants left the room, instructors and volunteers sanitized mats, and ensured materials were stowed and the room was returned to its original condition.

This was a quality improvement project designed to positively impact the population of adults with intellectual disabilities living in or near Clemson, SC. A community appraisal revealed that there are no community leisure or active recreation opportunities currently in place for this population. Further investigation through discussions and correspondence with persons involved both in recreation and in service organizations serving the disabled confirmed this need. Additionally, the community of Clemson South Carolina will be positively impacted by improving the inclusion aspects of its recreation programs. In this pilot program, persons who are disabled and persons without disabilities had the opportunity to interact together and be involved in the same leisure activity using community resources.

Formative and summative survey instruments were used to gather data at the beginning, throughout the program after each weekly class, and at the completion of the program. Anecdotal remarks were anonymously recorded to offer qualitative insights into the perspectives of participants. Responses made on the pre-program questionnaire were compared to responses on post program questionnaires (PROMIS Satisfaction with Participation in Discretionary Social Activities v1.0 Short Form (E. A. Hahn, DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., Bosworth, H. B., Heinemann, A. W., et al. , 2010), Revised, and the Outcomes Expectations for Yoga Scale (Thind et al., 2017)) for data analysis. Post class surveys were used to drive changes during the program as needed to better achieve program goals and meet the needs of participants.

Table 3. Information	gathering methods	s for the "Yoga for YOU!"	pilot program.

	Adults with intellectual disabilities	Staff participants: PCBDSN staff Yoga instructors Parks & Rec staff	Adults from the general community without disabilities				
	Format	ive					
Weekly class satisfaction surveys	Х	Х	Х				
Summative							
PROMIS Satisfaction with Participation in Discretionary Social Activities v1.0 (Pre & Post)	Х						
Outcome Expectations for Yoga Scale (Pre/Post)	Х		Х				
End of yoga program feedback survey	Х	Х	Х				

The PROMIS "Satisfaction with Participation in Discretionary Social Activities v.1.0 short form, Revised" (E. A. Hahn, DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., Bosworth, H. B., Heinemann, A. W., et al., 2010) survey was used as a pre-post intervention data gathering instrument to address my main goal of increasing feelings of social inclusion in adults with intellectual disabilities. I chose this instrument because it is a published, researched instrument which has been found to be responsive to measure change in social functioning measures across diverse populations (E. A. Hahn et al., 2016). This form has been revised from its original format of 12 questions, down to 7 questions (retained from the original form), deleting questions that were not as focused on the intervention of social inclusion. This form was administered using a paper and pencil application which I believe was more suitable for my target population and preferred by the staff at the PCBDSN day program. Additionally, the "Outcome Expectations for Yoga Scale" (Thind et al., 2017) was administered to the adults with and without disabilities who are program participants through a pre/post-test measure to gather secondary goal data on participant's perceptions of the value of the yoga experience itself. The

expected outcome was that there would be no statistical difference in scores when comparing the adults with disabilities to those without disabilities on the post test for the 2 groups of class participants. Further formative information was gathered after each weekly class via a short Likert scale questionnaire to track participant's perceptions of the general classroom environment (feedback options included questions on topics such as was it too loud, room was not warm enough, I did not feel included in the class, I could not do the poses, and similar). An end of program feedback survey was used to elicit information from all class participants as well as staff on topics such as "Would you participate in this program again?" and general satisfaction with differing aspects of the program to gather information which might support this program going beyond a pilot phase to a sustainable inclusive community exercise program. Post test data on the Satisfaction with Participation in Discretionary Social Activities v.1.0 short form (E. A. Hahn, DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., Bosworth, H. B., Heinemann, A. W., et al., 2010), Revised and the Outcome Expectations for Yoga Scale" (Thind et al., 2017) were excluded from data analysis if the respondent had not attended at least 4 of the scheduled 8 class meetings to maintain integrity of results. Table 3 summarizes when the specific measures were used, and with which participant groups.

Figure 11. Timeline of "Yoga for YOU!" project, 2023.

	Jan	Jan	Jan	Jan	Jan	Feb	Feb	Feb	Feb	Mar	Mar	Mar	Mar	Apr
	2	9	16	23	30	6	13	20	27	6	13	20	27	21
Distribute														
registration forms														
Train volunteers,														
gather materials.														
Distribute "Welcome														
to Yoga for YOU!"														
video to PCBDSN														
Ensure all														
registration materials														
are in														
PCBDSN														
participants complete														
PROMIS survey														
Yoga classes, weekly														
feedback surveys														
Class make-up dates														
Complete summative														
questionnaires														
Tally/analyze results														
Create power point														
presentation and														
paper drafts														
Submit final write up														
to MUSC, prep to														
send to other														
publications														

Results:

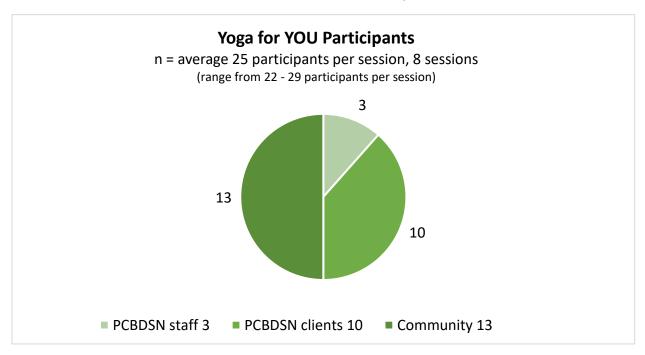
This project demonstrated the feasibility of providing an inclusive high quality community yoga group that encourages community integration of adults with intellectual disabilities and adults without disabilities. This was demonstrated by successfully hosting a weekly yoga group that was attended by an average of 25 persons total, with at least 10 participants who identified as having a disability and the remainder of persons who were non-disabled. Table 4 presents a snapshot of important demographic information of participants.

Average number of participants per week:	25 (range 22 – 29)
Gender of participants:	20% male, 80% female
Age range of participants:	6 years to 91 years
Mean age of all participants:	51 years
Mean age of participants from the community:	57 years
Mean age of the participants from PCBDSN:	39 years
Average number of staff (including volunteers):	7

Table 4. Demographic information:

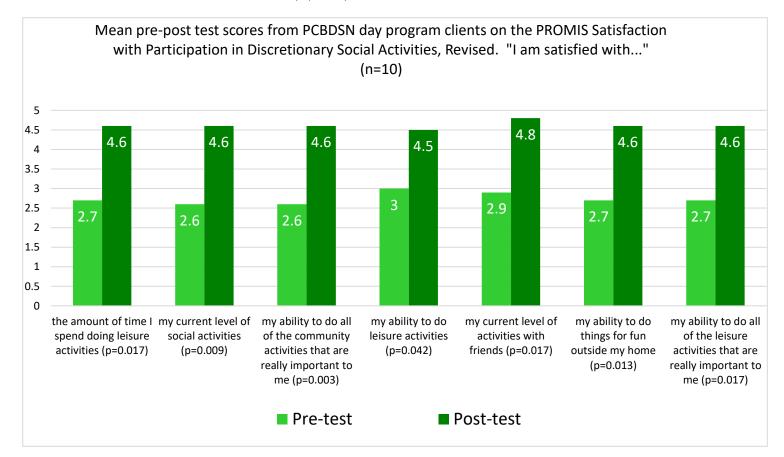
The program attracted a wide variety of participants including variations in ages, genders, and physical ability levels of participants. Community members who participated were not asked to share if they had disabilities or not, or diagnoses. However, many did of their own volition. Know diagnoses represented in the group over all included persons with mild or moderate intellectual disabilities, autism, cerebral palsy, Down syndrome, deafness, seizure disorder, diabetes, and orthopedic conditions. The typical mix of participants was nearly 50% community members and 50% participants coming from the Pickens County Board of Disabilities and Special Needs Day Program, as can be seen in figure 12.

Figure 12. Comparison of numbers of participants from the community and from the Pickens County Board of Disabilities and Special Needs. Numbers were rounded up to not reflect a "partial person" thus equaling 26.



The adults with disabilities who participated in the "Yoga for YOU!" reported increased feelings of being "socially included" during the program, as determined through the summative data gathering instrument, the PROMIS Satisfaction with Participation in Discretionary Social Activities v.1.0, (E. A. Hahn, DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., Bosworth, H. B., Heinemann, A. W., et al., 2010) Revised short form. Total Pre-test mean scores of 19.2 (SD = 13.0), and total post-test mean scores of 32.3 (SD = 4.1) were analyzed using a two tailed paired T-test after test of normality, finding a statistically significant increase in mean scores pre to post test, (p=.009) for adults with disabilities. Figure 13 illustrates the specific changes per question on this instrument. These results suggest that a community inclusive yoga group can be an effective way to increase feelings of inclusion in adults with intellectual disabilities. Additionally, the use of this tool documents actually asking the persons with disabilities if they felt included instead of assuming inclusion based solely on physical presence. Additionally, on the final class satisfaction survey, for the question "Did you feel included in our class group?" the responses from the PCBDSN clients were all positive, with 9 of 10 responses indicating "Very much" and 1 of the 10 responses indicating "mostly".

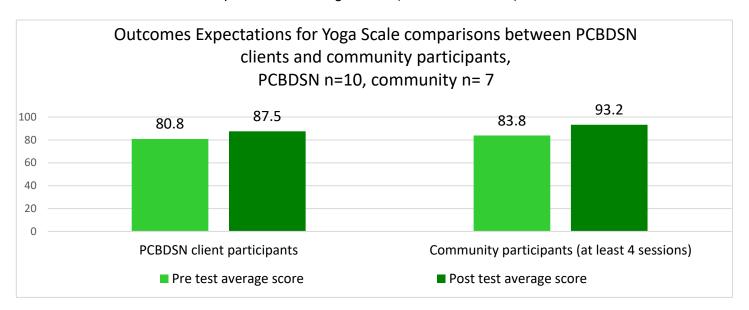
Figure 13. Comparison of mean pre-post test scores from PCBDSN program participants on the PROMIS Satisfaction with Participation in Discretionary Social Activities, Revised, (E. A. Hahn, DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., Bosworth, H. B., Heinemann, A. W., et al., 2010) (n=10).



Both groups of participants (adults with and without disabilities in the class) reported secondary gains from participating in yoga through noting improved feelings of physical or mental well-being ("I feel yoga makes me feel more flexible", "I feel yoga helped me feel more relaxed or calm", etc.) as noted on the summative survey, Outcome Expectations for Yoga Scale (Thind et al., 2017). It was expected that there would be no significant difference between groups on comparisons of total post test scores. The results supported this, suggesting that people with and without disabilities found the experience of learning and performing yoga personally valuable. Scores for the PCBDSN participants increased an average of 8.3%, community participants scores increased an average of 11.2% (refer to figure 13). Results were

analyzed using an independent sample t-test, (p = 0.83) with no statistically significant difference between groups on comparisons of changes in scores pre to post test. Data was not considered in statistical analysis unless the participant had attended at least 4 sessions. These results suggest that a yoga group can be effective for groups of varying levels of abilities while accommodating people with and without disabilities.

Figure 14. Comparisons of pre to post test score between groups on the Outcomes Expectations for Yoga Scale (Thind et al., 2017).



Participants (both adults with and without disabilities) and staff rated the experience positively as determined through the summative data gathering instrument, the end of yoga program feedback survey. Satisfaction with the program was high as supported by the feedback, as was a desire to continue the program as evidenced not only by scores on the final feedback survey, but also anecdotal remarks. This demonstrates that one program can satisfactorily meet the needs of adults with and without disabilities.

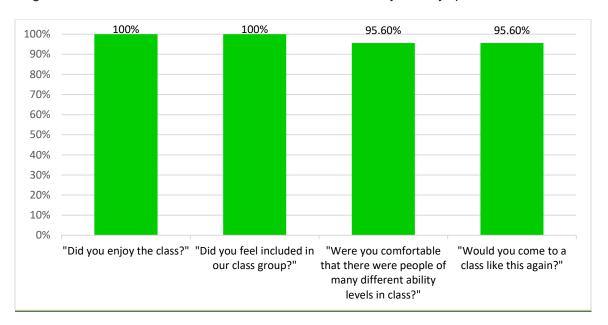


Figure 15. Scores from the final class satisfaction survey on key questions, n=23.

Themes of inclusion, medical improvement, feelings of being relaxed and happy, and strong opinions that the program should continue were all noted from anecdotal comments offered through either post project interviews or written feedback on the final class satisfaction survey. "I feel like I have a better acceptance of people with disabilities. I'd never been around them, seeing how sweet and fun they are has changed my outlook. And they can do the yoga!" is quotation from a community participant that illustrates the change in view that one individual expressed after getting to know people with disabilities. A staff member commented "I think it did make a difference in this community. Everyone was included and valued, and you left better than you came in. I was personally always happier!" Staff at the Pickens County Board of Disabilities and Special Needs Day Program remarked that Fridays quickly became known as "yoga day"! Participating clients who had previously been difficult to get on a van to go anywhere would be ready and waiting on staff on yoga days! They also noted that doing yoga together seemed to strengthen the bond between clients and support persons. More complete qualitative information is presented in the appendix.

Discussion:

The "Yoga for YOU!" program demonstrates that inclusive community programming can be successfully offered to meet the needs of people with and without disabilities. Inclusion can occur if programs are designed with consideration for offering supports such as ensuring accessibility of place and activity, removal of barriers such as providing transportation and making an event free, and allowing for individual differences in the accomplishment of the activity. The training of staff members on best practices for interacting and supporting those with disabilities as well as offering pre-teaching to our main group of participants who had disabilities so that they could know what to expect were noted as positives of this program. (Refer to Table 5 for additional strategies used for supporting special needs and creating a welcoming environment.) The clients of the Pickens County Board of Disabilities and Special Needs Day Program began additional community outings after we started the "Yoga for YOU!" program, suggesting once an individual has a positive social community experience, they may be more willing to try more experiences! Community members of Clemson who participated were very accepting of their fellow participants who had disabilities, in fact quite a few community members who came self-identified various disabilities they were dealing with. Not everyone who came from the PCBDSN Day Program had great participation in the activity of yoga; for some the activity of coming into a community, going to a different place, interacting with new people was the event. If one's focus is only on performing an exercise, those individuals may not have been considered as being successful. However, the focus of this project was not to become a yoga expert, but that one could interact with the community and leave feeling you were included. We were successful in this, and from the high numbers on our satisfaction scale and remarks offered by participants (see the appendix), not only did our participants who had disabilities leave feeling included, so did our members of the general community. The fact that attendance grew throughout the project duration signifies people not only enjoyed the program

and came back, but brought their friends. The law (ADA, 1990) tells us we need to encourage inclusive community activities, we know ethically it is the right thing to do, and this project shows it can be accomplished successfully for a low budget (less than \$150 per session in our case).

Table 5. Actions implemented to support inclusion and meeting special needs:

Creating a welcoming environment:	Supports for special needs:
"Welcome" video sent to PCBDSN prior to program	Training video for staff provided prior to program
Use name tags, greet people by name	2 instructors provided, one demos chair yoga
Social time built in before class	Dimmed lighting, soft calming music
Snacks & drinks provided so all could eat/drink	Chairs, mats, and blocks provided
together	·
Location was "The Community Room"	3 screens used to better show visuals of the instructor
Train staff to smile, make eye contact, say "hello!"	A booklet of poses frequently used supplied for free
Weekly door prizes	Microphone on instructor to increase voice volume
Participants greeted as soon as they enter the	Welcome video sent to PCBDSN explains what to
building	expect
Participants encouraged to perform at whatever	All staff wear matching Yoga for YOU shirts to readily
level was comfortable	identify a "helper"
	Transportation provided
	Free of charge

Impact:

The "Yoga for YOU!" project had a positive impact on the population of adults with intellectual disabilities in the Clemson, South Carolina area. It has now been demonstrated that it is possible to design and implement a high-quality community inclusive yoga program which provides an opportunity for community participation of people with and without disabilities in an active leisure pursuit, where none existed before. This may encourage communities to institute a policy of inclusion for persons with disabilities, and then support these outreach programs with appropriate funding allocations. Social justice demands this underserved group be recognized and fairly supported. Finally, this program can meet the needs of increased physical activity, increased social inclusion, and teaching methods that can combat depression and anxiety that often accompany a diagnosed disability.

The greater community of Clemson benefitted by having a community program that encouraged members of the community who are not disabled to join into a participatory activity with other community members with disabilities, and possibly interact and form acquaintances. "Yoga for YOU!" helped the city of Clemson reach its stated goals of "Inclusivity and conscious progression towards equity for all" and "Engaged and healthy living across the life span" (2021). Participants learned the basics of yoga, which they could then use to reap the benefits of potential improved well-being in physical and psychological areas. This model inclusive community leisure program was carried out with a low budget (less than \$150 per session) by using existing facilities and volunteer assistance. This also introduced into the literature the subjective responses of the adults with intellectual disabilities as to if they felt included in the community as a result of the program. Directly asking adults with intellectual disabilities their perceptions on feeling included (rather than deeming them "included" based only on their physical presence) has not to this point been included in the literature. Clemson University student volunteers commented that they would be more likely to be involved with inclusive programming after their experience with "Yoga for YOU!" which may help to break down barriers in the future for inclusion in community programming. The city of Clemson has agreed to extend funding for this program to continue for an additional 2 months beginning in May 2023, and community sponsors have experessed interest in supporting the program further.

Limitations:

This pilot program has a small sample size, as it involved the participation of less than a dozen adults with known disabilities, and approximately 25 participants overall. It was also a convenience sample of participants from the Pickens County Board of Disabilities and Special Needs Day Program. That makes it more difficult to widely generalize the results of this project to other populations of persons with disabilities. The program was delivered over a short time period (8 weekly sessions).

References:

- Blick, R. N., Saad, A. E., Goreczny, A. J., Roman, K., & Sorensen, C. H. (2015). Effects of declared levels of physical activity on quality of life of individuals with intellectual disabilities. *Research in Developmental Disabilities*, *37*, 223-229. doi:https://doi.org/10.1016/j.ridd.2014.11.021
- Borland, R. L., Hu, N., Tonge, B., Einfeld, S., & Gray, K. M. (2020). Participation in sport and physical activity in adults with intellectual disabilities. *Journal of Intellectual Disability Research*, *64*(12), 908-922. doi:https://doi.org/10.1111/jir.12782
- Carmeli, E., & Imam, B. (2014). Health promotion and disease prevention strategies in older adults with intellectual and developmental disabilities. *Front Public Health, 2*, 31. doi:10.3389/fpubh.2014.00031
- Census Bureau, U. S. (2021). *Quick Facts: South Carolina; Clemson City, South Carolina; Anderson County,*South Carolina; United States. United States Government Retrieved from

 https://www.census.gov/quickfacts/fact/table/pickenscountysouthcarolina,SC,clemsoncitysouthcarolina,andersoncountysouthcarolina/PST045221
- Centers for Disease Control and Prevention. (2022, July 15, 2022). *Consequences of Obesity*. Retrieved from https://www.cdc.gov/obesity/basics/consequences.html
- City of Clemson: Parks and Recreation Events and Programs. (2022). *Envision Clemson*. Retrieved from https://www.clemsoncity.org/Departments/ParksandRecreation/EventsandPrograms/tabid/315
 /Default.aspx
- Cramer, H., Ward, L., Saper, R., Fishbein, D., Dobos, G., & Lauche, R. (2015). The Safety of Yoga: A

 Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Am J Epidemiol, 182*(4),

 281-293. doi:10.1093/aje/kwv071

- Cummins, R. A., & Lau, A. L. D. (2003). Community Integration or Community Exposure? A Review and Discussion in Relation to People with an Intellectual Disability. *Journal of Applied Research in Intellectual Disabilities*, *16*(2), 145-157. doi:https://doi.org/10.1046/j.1468-3148.2003.00157.x
- Diaz, K. M. (2020). Leisure-time physical activity and all-cause mortality among adults with intellectual disability: the National Health Survey. . *Journal of Intellectual Disability Research, 64 (2),* 180 184.
- Disability and Obesity. (2019, September 6). *Disability and Health Promotion*. Retrieved from cdc.gov/ncbddd/disabilityandhealth/obesity.html
- Disability Inclusion. (2020, 9/16/2020). *Disability and Health Promotion*. Retrieved from https://www.cdc.gov/ncbddd/disabilityandhealth/disability-inclusion.html
- Froehlich-Grobe, K., Lee, J., Washburn, R. (2013). Disparities in Obesity and Related Conditions Among Americans with Disabilities. *American Journal of Preventive Medicine*, 83-90.
- Gothe, N. P., & McAuley, E. (2016). Yoga Is as Good as Stretching-Strengthening Exercises in Improving

 Functional Fitness Outcomes: Results From a Randomized Controlled Trial. *J Gerontol A Biol Sci*Med Sci, 71(3), 406-411. doi:10.1093/gerona/glv127
- Hahn, E. A., Beaumont, J. L., Pilkonis, P. A., Garcia, S. F., Magasi, S., DeWalt, D. A., & Cella, D. (2016). The PROMIS satisfaction with social participation measures demonstrated responsiveness in diverse clinical populations. *J Clin Epidemiol*, *73*, 135-141. doi:10.1016/j.jclinepi.2015.08.034
- Hahn, E. A., DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., Bosworth, H. B.,

 Heinemann, A. W., et al. . (2010). Measuring social health in the Patient-Reported Outcomes

 Measurement Information System (PROMIS): Item bank development and testing. *Quality of Life Research*, 19, 1035-1044. Retrieved from https://www.healthmeasures.net/search-view-measures?task=Search.search

- Harris, P. A., Taylor, R., Minor, B. L., Elliott, V., Fernandez, M., O'Neal, L., McLeod, L., Delacqua, G., Delacqua, F., Kirby, J., Duda, S. N., & REDCap
 Consortiumhttps://doi.org/10.1016/j.jbi.2019.103208. (2019). The REDCap consortium: Building an international community of software platform partners. *Journal of biomedical informatics*,, 95(103208). Retrieved from https://doi.org/10.1016/j.jbi.2019.103208
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: a meta-analytic review. *Perspect Psychol Sci, 10*(2), 227-237. doi:10.1177/1745691614568352
- Hsieh, K., Hilgenkamp, T. I. M., Murthy, S., Heller, T., & Rimmer, J. H. (2017). Low Levels of Physical Activity and Sedentary Behavior in Adults with Intellectual Disabilities. *International journal of environmental research and public health, 14 (12),* 1503 -.
- International Classification of Functioning, Disability and Health (ICF). (2022). Retrieved from

 https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health

 disability-and-health
- James, L., Shing, J., Mortenson, W. B., Mattie, J., & Borisoff, J. (2018). Experiences with and perceptions of an adaptive hiking program. *Disabil Rehabil, 40*(13), 1584-1590.

 doi:10.1080/09638288.2017.1302006
- Labbe, D., Miller, W. C., & Ng, R. (2019). Participating more, participating better: Health benefits of adaptive leisure for people with disabilities. *Disabil Health J, 12*(2), 287-295. doi:10.1016/j.dhjo.2018.11.007
- Land, G., Povalac, E. E., & Paul, S. (2002). The effects of therapeutic riding on sitting posture in individuals with disabilities. *Occup Ther Health Care*, *14*(1), 1-12. doi:10.1080/J003v14n01_01

- Leigh-Hunt, N., Bagguley, D., Bash, K., Turner, V., Turnbull, S., Valtorta, N., & Caan, W. (2017). An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public Health*, *152*, 157-171. doi:10.1016/j.puhe.2017.07.035
- Merrells, J., Buchanan, A., & Waters, R. (2018). The experience of social inclusion for people with intellectual disability within community recreational programs: A systematic review. *Journal of Intellectual & Developmental Disability*, 43(4), 381-391. doi:10.3109/13668250.2017.1283684
- Merrells, J., Buchanan A., & Waters, R. (2018). The experience of social inclusion of people with intellectual disability within community recreational programs: A systemaic review. *Journal of Intellectual and Developmental Disability 43(4)*, 381-391.
- Merrick, D., Hillman, K., Wilson, A., Labbé, D., Thompson, A., & Mortenson, W. B. (2021). All aboard: users' experiences of adapted paddling programs. *Disabil Rehabil, 43*(20), 2945-2951. doi:10.1080/09638288.2020.1725153
- Nash, D. B., Skoufalos, A., Fabius, R. J., & Oglesby, W.H. (2021). *Population Health: Creating a Culture of Wellness, 3rd Edition*. Burlington, MA: Jones & Bartlett Learning.
- National Center on Health, P. A., and Disabiity. (2022). *NCHPAD: Building Healthy Inclusive Communities,*14 weeks to a Healthier You. Retrieved from https://www.nchpad.org
- Omura, J. D., Hyde, E. T., Whitfield, G. P., Hollis, N. D., Fulton, J. E., & Carlson, S. A. (2020). Differences in perceived neighborhood environmental supports and barriers for walking between US adults with and without a disability. *Preventive Medicine*, *134*, 106065.

 doi:https://doi.org/10.1016/j.ypmed.2020.106065
- Pascoe, M. C., & Bauer, I.E. (2015). A systemiatic review of randomised control trials on the effects of yoga on stress management and mood. *Journal of Psyachiatric Research*, 270 282.

- Physical Activity Guidelines for Americans, 2nd Edition. (2018). Washington, DC: US Dept of Helath and

 Human Services Retrieved from https://health.gov/sites/default/files/2019-09/Physical Activity Guidelines 2nd edition.pdf
- Pickens County South Carolina Profile. (2022, 7/7/2022). Retrieved from https://data.census.gov/profile/Pickens_County, South Carolina?g=050XX00US45077

 Americans With Disabilities Act, 42 C.F.R. § 35 (1990).
- Reina, A. M., Adams, E. V., Allison, C. K., Mueller, K. E., Crowe, B. M., van Puymbroeck, M., & Schmid, A. A. (2020). Yoga for Functional Fitness in Adults with Intellectual and Developmental Disabilities.

 Int J Yoga, 13(2), 156-159. doi:10.4103/ijoy.IJOY_57_19
- Saper, R. B., Boah, A. R., Keosaian, J., Cerrada, C., Weinberg, J., & Sherman, K. J. (2013). Comparing

 Once- versus Twice-Weekly Yoga Classes for Chronic Low Back Pain in Predominantly Low

 Income Minorities: A Randomized Dosing Trial. *Evid Based Complement Alternat Med, 2013*,
 658030. doi:10.1155/2013/658030
- Stuart, H. (2012). United Nations convention on the rights of persons with disabilities: a roadmap for change. *Current Opinion in Psychiatry*, *25*(5), 365-369. doi:10.1097/YCO.0b013e328356b7ed
- Taylor, R. e. R. (2020). *The intentional relationship : occupational therapy and use of self* (Second edition. ed.). Philadelphia: F.A. Davis Company.
- Thind, H., Guthrie, K. M., Horowitz, S., Conrad, M., & Bock, B. C. (2019). "I can do almost anything": The experience of adults with type 2 diabetes with a yoga intervention. *Complement Ther Clin Pract,* 34, 116-122. doi:10.1016/j.ctcp.2018.11.011
- Thind, H., Sillice, M. A., Fava, J. L., Lantini, R., Horowitz, S., Jennings, E., . . . Bock, B. C. (2017).

 Development and Validation of the Outcome Expectations for Yoga Scale. *Am J Health Behav,*41(6), 796-802. doi:10.5993/AJHB.41.6.13

Verdonschot, M. M. L., De Witte, L. P., Reichrath, E., Buntinx, W. H. E., & Curfs, L. M. G. (2009).

Community participation of people with an intellectual disability: a review of empirical findings.

Journal of Intellectual Disability Research, 53(4), 303-318. doi:10.1111/j.1365-

2788.2008.01144.x

World Health Organization Guidelines Approved by the Guidelines Review Committee. (2010). Geneva:

World Health Organization

Appendix

Thematic Analysis of Comments

Inclusion:

Staff **Participants** "I think this program overall had a huge "I feel like I have a better acceptance of impact on bringing the community together. I people with disabilities. I'd never been think providing a space where everybody around them, seeing how sweet and fun they could come and participate in the same are has changed my outlook. And they can activity is something to be proud of. I truly do the yoga!" believe people who came week to week not only changed their perspectives about "I was happy to see an inclusive class that is themselves, but others as well." approachable to all people." "This was a fun way to get involved in the "Everyone felt welcome." community and truly connect with people week after week "I never felt unwelcome or like I was treated differently, it was really great! Everyone was friendly, the college students too." "I think everyone got along, and as the weeks went on, everyone started to come together and make the environment even more "The clients kept coming back and telling vibrant." everyone how much fun they had. We have a whole group of other people who want a "I think it did make a difference in this turn to come and do yoga!" community. Everyone was included and valued and you left better than you came in. I was personally always happier!" "Eventually I would like to see the groups mixing together more, but that might come in time " "Everyone participated in their own way, everyone received something different from the class." The students really seemed to form community while there." "The clients would be ready and waiting to load the van to go! A day or two in advance they would start reminding people that 'Friday is yoga day!' Some people who used to not want to get on the van to go anywhere are now they're ready to get on, and it's helped

them be more willing to go other places."

Health:

Staff	Participants
At every session people would tell me they were practicing some things on their own. I think it really made a difference."	"My medical care provider is impressed with how much the classes have improved my health issues. One of my health issues has reversed partly because of the classes, and my labs were very good because of this class". "This class has helped me with my breathing; it is a very fun group of people to spend time with." "My legs hurt less now that I've been doing yoga."

Calming/Relaxing:

Staff	Participants
"Yoga for YOU not only helped me relax, but	"It was very peaceful."
it helped brighten my day each week."	
	"I had fun, it was very relaxing and calming."
	"It was relaxing."

Social:

Staff	Participants
"I looked forward to Yoga for YOU each week so I could see familiar faces from the weeks before."	"This is a valuable program for the senior community."
"I got the feeling people liked the practice of yoga and being in the group."	"Everyone was so nice and welcoming."
"I think the time that we extended at the beginning of the class to allow for social time	"We liked the snacks and socializing at the beginning of class."
helped everybody feel comfortable and settle in before Yoga started."	"I liked exercising with my friends."

Fun/Happy:

Staff	Participants
"I got the feeling people liked our yoga class	"I 100% wish it could continue. I looked
and it might have been the highlight of the week for many."	forward to Fridays."
	"We never did anything like this before, and
"Everybody loved coming! The consumers would be reminding us it was "Yoga day" and	we all loved it!"
be ready and waiting to go!"	"Loved it!"
	Friday was "Yoga day!" I looked forward to it.
	"I really love this! I tried yoga one time before but we weren't allowed to talk or laugh or anything like we can here. This is so much more fun and relaxed!"

Financial:

Staff	Participants
"It was great this was free. Many of our consumers have very limited finances."	"I think it is good that it is free. That way everyone can come."
"I think it is important to keep this a free program. You shouldn't have to have money to work on yourself. When you have financial burdens, the last thing you think of is taking care of yourself. Seniors are on fixed incomes."	