

# Formative evaluation on a physical activity health promotion program for the group home setting



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## ABSTRACT

Physical inactivity and high rates of chronic conditions is a public health concern for adults with intellectual disability. Few health promotion programs target the group home setting which is the predominant form of residential accommodation for persons with intellectual disability. A process evaluation of a physical activity health promotion program, *Menu-Choice*, was conducted with five group home sites for adults with intellectual and developmental disabilities. *Menu-Choice* assists group home staff in including physical activity goals within resident schedules. The physical activity program was designed based on theoretical frameworks, community-based participatory approaches, and established health promotion guidelines for adults with disabilities. Fourteen program coordinators (age M 39; 77% females), 22 staff (age M 39; 82% females), and 18 residents (age M 59; 72% females; 56% ambulatory) participated. Results from the fidelity survey and program completion highlight potential challenges with implementation. Findings will assist with the refinement of the program for continued implementation trials in the group home community.

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## 1. Introduction

Intellectual disability is one of the largest disability groups in the United States. As defined by the American Association on Intellectual and Developmental Disabilities (AAIDD), intellectual disability is “. . . characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This disability originates before age 18” (Schalock et al., 2010). Common types of intellectual disability include Down syndrome, fetal alcohol syndrome, fragile X syndrome, and Prader-Willi syndrome (Shapiro & Batshaw, 2013).

Growing evidence indicates that persons with intellectual disabilities consistently demonstrate poorer health than the general population (Krahn, Hammond, & Turner, 2006). For example, data demonstrates that cardiovascular disease is

prevalent and a common cause of death among this population (Draheim, 2006; Haveman et al., 2010; Henderson et al., 2008). Moreover, literature related to overweight and obesity is prominent and described as a risk factor for poor health since chronic conditions (e.g., diabetes and heart disease) are undiagnosed in this population (Haveman et al., 2010; Henderson et al., 2008; Rimmer & Yamaki, 2006). Obesity is a particular health inequity that has drawn national attention across disability populations, including those with intellectual disability (CDC, 2011a,b). Obesity is steadily increasing in this population, as prevalence rates are at least 1.5 times higher for those with intellectual disabilities compared to the general population (Rimmer & Yamaki, 2006). A recent study suggested that approximately 79.6% of adults with intellectual disabilities are either overweight or obese with women, persons with mild intellectual impairment, and those with Down Syndrome being at higher risk (Barnes, Howie, McDermott, & Mann, 2013). Adults with intellectual disability living in the United States within smaller settings (e.g., group homes and family homes) have a significantly higher rate of obesity compared to other countries and those living in larger

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more supervised setting (e.g., institutions) (Rimmer & Yamaki, 2006). In order reduce obesity and other secondary conditions, changing negative lifestyle factors and enabling living environments for persons with intellectual disabilities is needed.

One lifestyle factor influencing health is physical activity. An emphasis on addressing secondary conditions through physical activity promotion is the focal point of multiple national initiatives including: CDC's report on obesity for those with disabilities (CDC, 2011a), Healthy People 2020, and two Surgeon General's Reports to improve the health of persons with disabilities (U.S. Department of Health and Human Services, 2002, 2005). Despite public health efforts and the documented benefits of being active (e.g. controlling body weight, improving functional and mental health status, and reducing cardiovascular disease) (CDC, 2011b), only 30% of adults with intellectual disability are meeting recommended guidelines (Stanish, Temple, & Frey, 2006). Additional findings suggest that many individuals with intellectual disabilities are also demonstrating preferences for sedentary behaviors (Dixon-Ibarra, Lee, & Dugala, 2013; Frey, Buchanan, & Sandt, 2005). With the clear lack of physical activity, health promotion efforts are needed to target social and environmental barriers limiting activity.

A critical component to changing health behavior is to target the environment in which people live, and the group home setting is a pre-dominant form of residential accommodation for persons with intellectual disabilities (Bigby & Clement, 2009). Group homes are a licensed community residence facility that provides a home-like environment for four to eight related or unrelated persons with an intellectual disability, where extensive or pervasive paid staff are provided within the home and community-based settings (Bigby & Clement, 2009). The main group home stakeholders, although names may differ for a given agency, include group home managers, program coordinators, support staff, and residents. For the nature of this research, we define program coordinators as persons who manage the individual group home houses. They direct the support staff who work one-on-one with the residents. A support staff is an individual who is paid to provide care and personal assistance to a person with an intellectual disability in the group home and community setting. Residents have diagnoses of various forms of intellectual and developmental disability who need supports that are provided in the group home setting.

Caregivers in the group home setting play an important role in the behaviors of those with intellectual disability (Krahn, Hammond, & Turner, 2006). For example, residents often depend on group home providers to include physical activity into their structured daily routines. The lack of physical activity in this population has been shown to be a result of insufficient guidance and support from caregivers within residential facilities (Bodde & Seo, 2009; Messent, Cooke, & Long, 1999; Temple and Walkley, 2007). Specifically, caregivers are negatively influencing behaviors by discouraging and prohibiting activities due to fear of injury or health issues (Bodde & Seo, 2009; Frey et al., 2005). An optimal way to increase health promoting behaviors is to focus on environmental change within these settings by addressing negative influences, integrating policies for health promotion training, and incorporating healthy choices within the routine schedule of activities (Bodde & Seo, 2009; Lennox, 2002; Messent et al., 1999; Temple & Walkley, 2007). Health promotion programs that effectively enable the group home environment and empower persons with intellectual disabilities to engage in physical activity will likely prove successful at changing the health status of this population (Rimmer & Rowland, 2008).

However, health promotion programs designed specifically for the group home setting to enable physical activity do not exist. To fill the identified need, the research team created a physical activity program called *Menu-Choice*. The current study is a process

evaluation of the created program to examine preliminary program outcomes and the feasibility of implementing the program. Process evaluation offers insight into whether the program is successful within the community and allows for program planners to make post implementation modifications prior to larger effectiveness studies (Valente, 2002). Therefore, the purpose of this study was to conduct a process evaluation to describe the preliminary outcomes and feasibility of using the *Menu-Choice Physical Activity Program*. Results will be used to refine the program and improve effectiveness.

## 2. Methods: program design and implementation

### 2.1. Program development

The overall program development, design, and implementation was derived from an evidence-based nutrition health promotion program for the group home setting (i.e., MENU-AIDDS) (Humphries et al., 2008). Although dietary consumption and physical activity are inherently different behaviors, the methods used from MENU-AIDDS were deemed appropriate for the stakeholders involved in the group home setting. Additional considerations were utilized based on specific guidelines established for community-based health promotion programs for persons with disabilities (Drum et al., 2009). The guidelines and how they were incorporated in the program are as followed:

- Operational guidelines were incorporated by applying theory in the design and implementation phases of the program, by conducting a process evaluation, and by selecting appropriate outcome measures for persons with intellectual disabilities.
- Participation guidelines included stakeholder involvement in development and implementation of the program, considering the values of targeted group by developing the program based on feedback from community stakeholders, and providing ample opportunities for personal choice within program materials.
- Accessibility guidelines (i.e., social, behavioral, programmatic, and environmental accessibility) were considered throughout the design and implementation of the program. For example, reducing the reading level and determining activities appropriate for those with mild or moderate intellectual disability.

#### 2.1.1. Community-based participatory approach

The participation of persons with disabilities and their caregivers in the design and implementation of community-based health promotion programs is identified in the guidelines above (Drum et al., 2009). Additionally, the *Surgeon General's Call to Action Improving the Health and Wellness of Persons with Disabilities* (2005) expresses the need for persons with disabilities to be involved in the whole research process, with community-based participatory research as a successful strategy to accomplish this task. The *Menu-Choice* program is rooted in principles of community participation from persons with disabilities and their caregivers through initial needs assessment, program design, program implementation, and program evaluation.

Consistent with these guidelines, the first step in identifying a need for the program was to confer with stakeholders in the group home setting. We constructed an advisory group from two group home agencies. The advisory group roles were to participate in a needs assessment of the problem (i.e., lack of physical activity for adults living in the group home setting), provide insider knowledge about barriers and facilitators of physical activity in the group home setting, and provide critical feedback for program design. These individuals expressed the importance of increasing physical activity for the residents in their homes and provided the

following feedback for designing a program for this setting (submitted for publication):

- Obtain Resident & Staff buy in
- Address diverse needs
- Include self-determination for activity
- Make physical activity fun
- Create a simple program that can be engrained into the group home system

After drafting the program materials, Menu-Choice was presented to the advisory group for their final feedback prior to implementation. This use of community feedback verified that the materials were appropriate, usable, and created based on their initial feedback.

### 2.1.2. Theoretical framework for program design

The goal setting theory emphasizes the organization of information and skills into practical and manageable steps (Shilts, Horowitz, & Townsend, 2004). The selection of this theory for program design was an obvious choice based stakeholder feedback from our advisory group. We determined that the group home system functions through check lists of tasks (e.g., training needs, daily operational tasks, etc) to complete daily and weekly activities. Likewise, staff are familiar with documenting goals and helping residents achieve these goals through Individual Service Plans, which were an identified priority within the group home setting (submitted for publication). Key aspects of Goal Setting Theory incorporated in program design include:

- **Achievable goals:** Since residents are insufficiently active, with large portions actually pursuing sedentary activity, setting small manageable goals is important for success. Small increases in activity could provide substantial health benefits for this population (Powell, Paluch, & Blair, 2011). Based on theory, we anticipated that setting small manageable increases in activity would be successful for this population verse encouraging residents to meet physical activity recommendations of accumulating 150 min of moderate physical activity or 75 min of vigorous physical activity across the week (CDC, 2011b).
- **Inclusion of residents in the goal setting process:** According to Locke and Latham (1990), if other people set goals without input from the participant than they are less likely to be motivated to work hard to achieve them (Locke & Latham, 1990). We provided various opportunities within the program to include residents in the goal setting process. For example, there are resident choice activities, a visual calendar for residents to track their own goals, and staff tips for including residents in the goal setting process
- **Staff involvement:** As identified by our advisory group and the literature (Bodde & Seo, 2009; Mahy, Shields, Taylor, & Dodd, 2010), residents model their behaviors from the staff in their homes. Therefore, staff are expected to encourage and pursue physical activity with the residents to reach goals.

### 2.1.3. Theoretical framework for program implementation

The implementation of the Menu-Choice program is centered on Diffusion Theory (Goodson, 2010). Diffusion theory provides a framework for understanding how innovations (e.g., programs, policy, etc) are diffused within a community. According to Diffusion theory there are different phases in which the adoption of an innovation occurs (Goodson, 2010). Group home agency managers and program coordinators are the 'early adopters'. "Early adopters" tend to be the first to comprehend the advantages of the program and were willing to try it out. The group home managers are strong opinion leaders within the social system. Therefore,

these change agents are used to 'ignite' the diffusion of the program throughout the group home system (Goodson, 2010). Allowing the program coordinators to train staff on Menu-Choice is a method used to make the program seem acceptable and normative to the staff and residents. Many of the key characteristics of an innovation described within the Diffusion Theory (Goodson, 2010) were also identified by our advisory group and included in the design of the program and/or training of managers and program coordinators. Below are the key characteristics and how these concepts were utilized in the Menu-Choice program:

- **Relative advantage** was described during training to express that the program advantages outweigh the negative outcomes of physical inactivity for the residents
- **Compatibility** was an integral part of program design to make the program consistent with the practices and culture of the group homes system (e.g., using goals and check lists)
- **Communicability** was included in the design and implementation as we provided an easy step by step explanation of the program for staff to follow.
- **Simplicity** was a focus in the design to make it easy to follow and implement. A one page step by step guide was created for ease.
- **Trailability** was the main purpose of the feasibility study where the group home had the opportunity to try the program prior to adopting it in their agency.
- **Time to implement** the program was addressed by creating a program that would take minimal time to organize and implement.

## 2.2. Menu-Choice physical activity program description

Menu-Choice assists staff in including physical activity goals within the group home schedule. The staff and residents work together to develop weekly goals for residents' activity. The program includes a resource binder, weekly scheduling sheets, visual calendar and post it activity pictures for the residents. The resource binder includes resources for staff to learn about physical activity, activity examples, information about goal setting, and guidelines for specific disabilities within the group home setting. The calendars allow residents to post pictures of their activity across the week and check off when they complete their goals. Menu-Choice's 12 major components are listed in Table 1. In order to minimally run the program, the follow are the basic program contents: (1) step by step guide, (2) Residents' Special Activity Needs Sheets, (3) Menu-Choice activity modules, (4) Weekly Activity Schedule, (5) Resident's Visual Activity Calendar.

**Table 1**  
Menu-Choice Physical Activity Program contents.

1. Step by Step Guide to Menu-Choice*
2. Physical Activity Education Section
3. Residents' Special Activity Needs Sheet*
4. Goal Setting Education Section
5. Resident Choice Activities
6. Menu-Choice Activity Modules*
7. Menu-Choice Activity Progressions
8. Weekly Activity Schedule (goal setting sheet)*
9. Resident's Visual Activity Calendar*
10. Goal Evaluation Sheets
11. Finding Motivation Activities
12. Staff and Resident Activity Champions

\* Basic components of Menu-Choice program.

2.3. Program implementation

The agency managers and program coordinators attended a three hour Menu-Choice training session at their agency meeting room. The training described how to use the Menu-Choice components and study testing procedures. Content was delivered through powerpoint descriptions of the materials, group discussions, and case studies to practice using the materials. Concluding the training, program coordinators completed a training evaluation and took Menu-Choice materials to implement the program within their group home sites.

Subsequently, program coordinators trained support staff within their houses on Menu-Choice over a two-week period. The research team came to the group home sites prior to implementation to obtain baseline assessments from staff and residents. Following baseline assessment, the group homes were instructed to use the program materials for 10 weeks. During the implementation period, the first author contacted the group home sites weekly to check program progress. Consultation hours were also provided throughout the week so staff could ask questions about the program. After the 10 week implementation period, the research team conducted post assessment on program. The first author contacted the group home sites one month after the post assessment to evaluate continued program use. The pilot intervention lasted a total of 16 weeks. The university review board approved all study activities. See Fig. 1 for implementation and evaluation timeline.

3. Methods: evaluation

3.1. Menu-Choice training

To evaluate the effectiveness of the training, we assessed how well the training assisted program coordinators understanding of the materials. We asked the managers and program coordinators if they knew enough to train staff in their group home sites. Moreover, we asked if the lectures, activities, and discussion met their learning needs. To determine the program coordinators expectation for use, we asked the attendees what materials they expected to be used “regularly,” “occasionally,” or “never.” Training attendees could also provide qualitative feedback on what they learned the most, what they wanted to learn more about, and how the training could be improved.

3.2. Fidelity of Menu-Choice

We measured the fidelity of program use or the extent that our program was delivered in the group homes. Staff completed a fidelity survey at post and follow up assessments asking how frequently they used the 12 components of Menu-Choice. The

responses consisted of did not use the component, sporadically used the component, or consistently used the component. Humphries et al. (2008) successfully measured the fidelity of a nutrition program for the group home setting using similar response outcomes.

Other information of program use came from the evaluation of program materials at post assessment. Program materials were reviewed for completion and usage. First, each resident needed to complete a PAR-Q to determine physical activity readiness. We assessed if these documents were completed and how long it took to obtain approval. The special activity needs sheet (SAN) was a one page communication aid with the goal of a safe and pleasant physical activity experience for the residents. We assessed if these sheets were not completed, partially completed (i.e., basic information, no pictures, skipped questions), or thoroughly completed (i.e., detailed responses, no skipped questions, pictures included). The baseline activity sheets determine baseline activity prior to making appropriate activity goals. These sheets were assessed for completion (i.e., not complete, partially completed (i.e., missing minutes, activity intensity, mode/type of activity), or thoroughly completed). The visual calendar allows residents to play an active role in their activity goals by posting activity pictures across the week and checking off activity as they complete the task. We assessed the location of the visual calendars and use of post it pictures. The goal evaluation flowchart was designed to keep residents on track with their goals in five week intervals and was assessed with the following criteria: not completed, partially completed (i.e., flow chart not circled but notes included or vice versa), or thoroughly completed (i.e., flowchart complete with notes). The documentation section is a specific space in the back of the resource binder to include completed documentation (i.e. par-q, activity sheets, san sheets, etc). We assessed whether paperwork was included or not included in the documentation section of the binder.

3.3. Health outcomes

3.3.1. Physical activity

Physical activity was assessed through the weekly goal scheduling sheets. Although a proxy for physical activity, we were able to determine how much activity was planned for the residents across the 10 week intervention. Moreover, the activity sheets provided key information about the types of activities the residents were pursuing and changes in the amount of planned activity (i.e., minutes per week and days per week).

We also used the Omron HJ 720ITC pedometer to assess walking behavior. Data indicate that pedometers are an accurate and reliable measure for assessing walking activity in adults with intellectual disability (Stanish et al., 2006; Stanish, 2004; Temple & Stanish, 2009). According to Temple and Stanish (2009), three days

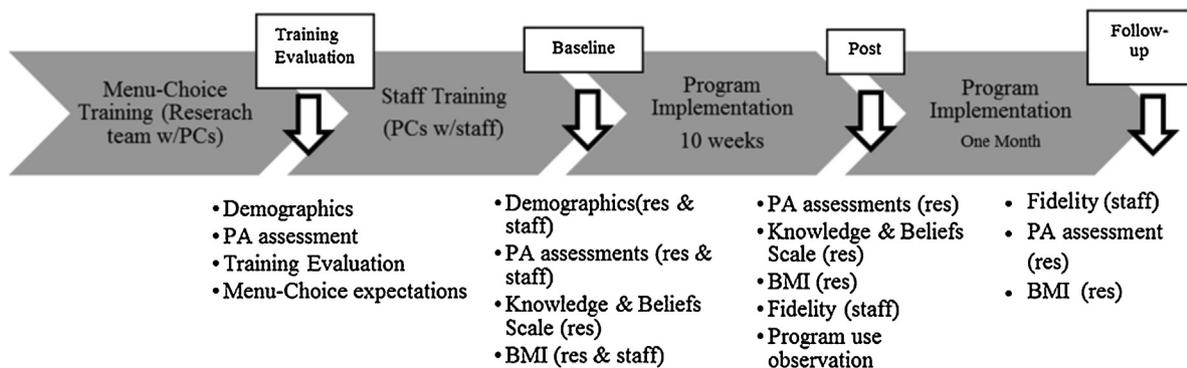


Fig. 1. Menu-Choice implementation and evaluation. Notes: PC = Program Coordinator, res = resident, PA = physical activity, BMI = Body Mass Index.

of monitoring time for those with intellectual disability is sufficient to understanding habitual physical activity. For this study, the participants were encouraged to wear the device for one week to ensure three days of valid data from the pedometer. The research team described how to wear the pedometer to both the residents and the staff. Residents were to wear the pedometer when they woke in the morning until they went to bed at night. The pedometer was blocked with tape to reduce reactivity.

Furthermore, we assessed the physical activity levels of the program coordinators and staff through the *Behavioral Risk Factor Surveillance System* global physical activity questions (CDC, 2012).

### 3.3.2. Physical activity knowledge

Residents with mild to moderate IDD (i.e., residents who could verbally communicate with the researcher) were asked about their attitudes and beliefs about physical activity. The *Attitudes and Beliefs about Exercise questionnaire* was selected from the *Health Matters: Exercise and Nutrition Education Curriculum for People with Developmental Disabilities* (Marks, Sisirak, & Heller, 2010). This measure was one of the assessments used to determine the effectiveness of the *Health Matters* health promotion program. The measure was sensitive enough to detect increases in attitude and beliefs in the effectiveness trials of the *Health Matters* curriculum (Heller, Hsieh, & Rimmer, 2004).

### 3.3.3. Body mass index

Resident body weight and height was self-reported by staff. The staff's height and weight information was also self-reported to evaluate their body mass index

## 3.4. Analysis

Descriptive analyses of results were conducted using means and frequencies to display study findings. STATA version 11 was used.

## 4. Results

### 4.1. Participants

The current study included five group home sites from a group home agency in the Northwest. Table 2 shows the characteristics of

the participating stakeholders including program coordinators, staff, and residents.

### 4.2. Menu-Choice training

Eighty-six percent (n = 12) of program coordinators agreed and 14% (n = 2) strongly agreed that they knew enough to help staff use Menu-Choice following the training. The lectures, activities, and discussions met the learning needs of 93% (n = 13) of the attendees. The program coordinators expected the following components to be used most frequently – Resident's Visual Activity Calendar, weekly activity schedules, and activity modules. The program materials that were least expected to be used were the step by step guide and physical activity education section.

From the training evaluation, participants learned the most about the general structure of Menu-Choice, how to implement the program, finding ways to motivate residents, making physical activity fun, and physical activities for different types of disabilities in the group home setting. Participants wanted to learn more about setting realistic goals, increasing activity goals, individualized exercise options for severe disability, and nutrition. Feedback for improvement included more hands on activities and practice using materials, more specialized materials for specific disabilities, enhancing choice variety, and including education for residents. General feedback was positive, where program coordinators stated that the materials were very easy to use and the training was good, interesting, and fun.

### 4.3. Fidelity of Menu-Choice

The fidelity scores of the basic Menu-Choice components are included in Table 3. Although fidelity scores indicate low use of program materials, results stratified by group home site had approximately 1–2 staff implementing the program at least sporadically across the basic components. Of the 12 Menu-Choice components, the most regularly used materials of the program included activity schedules and staff and resident activity champions. Least used were goal evaluation sheets and the physical activity knowledge section.

At the one month follow up, only group home site A was using program materials. Two staff from site A were 'sporadically' using

**Table 2**  
Participant Characteristics.

	PCs (n = 14)	Staff (n = 22)	Residents (n = 18)
Age, mean SD	39.1 (14.0)	38.7 (15.1)	59.4 (7.5)
Sex, n%			
Male	3 (23%)	4 (18%)	5 (28%)
Female	10 (77%)	18 (82%)	13 (72%)
Years worked in GH, mean (range)		4.9 (0.08–13.25)	
Race, n%			
White, Non-Hispanic	14 (100%)	14 (64%)	18 (100%)
Asian/Pacific Islander	0	5 (23%)	0
Indigenous/Aboriginal	0	1 (5%)	0
Hispanic	0	1 (9%)	0
Ambulatory, n%			
Non ambulatory			6 (33%)
Walker/cane			1 (11%)
Walk			10 (56%)
Body mass index			
Normal weight 18.5–24.9		4 (21%)	9 (56%)
Overweight > 25		15 (79%)	7 (44%)
Physical activity steps, mean SD			2375 (740)
Physical activity per week, n%			
0–2 days	10 (71%)	13 (59%)	
3–4 days	3 (21%)	3 (14%)	
>5 days	1 (7%)	6 (27%)	

Notes: GH = group home, PC = program coordinator.

**Table 3**  
Fidelity scores across basic Menu-Choice components.

% (N)	Step by Step Guide	SAN Sheets	Activity Modules	Weekly Activity Schedule	Visual Activity Calendar
		Program Coordinator Expectation of Use <sup>a</sup>			
Did not use	0	0	0	0	0
Sporadically used	54%(7)	50%(7)	21%(3)	21%(3)	14%(2)
Consistency used	46%(6)	50%(7)	79%(11)	79%(11)	86%(12)
		Group Home A Program Use <sup>b</sup>			
Did not use	80%(4)	100%(5)	60%(3)	60%(3)	60%(3)
Sporadically used	20%(1)	0	20%(1)	0	0
Consistency used	0	0	20%(1)	40%(2)	40%(2)
		Group Home B Program Use <sup>b</sup>			
Did not use	50%(1)	50%(1)	100%(2)	50%(1)	50%(1)
Sporadically used	50%(1)	50%(1)	0	50%(1)	50%(1)
Consistency used	0	0	0	0	0
		Group Home C Program Use <sup>b</sup>			
Did not use	0	0	0	0	0
Sporadically used	50%(2)	100%(2)	100%(2)	50%(2)	50%(2)
Consistency used	0	0	0	0	0
		Group Home D Program Use <sup>b</sup>			
Did not use	71%(5)	67%(4)	57%(4)	57%(4)	57%(4)
Sporadically used	14%(1)	17%(1)	29%(2)	14%(1)	14%(1)
Consistency used	14%(1)	17%(1)	14%(1)	29%(2)	29%(2)
		Group Home E Program Use <sup>b</sup>			
Did not use	50%(2)	50%(2)	50%(2)	50%(2)	75%(2)
Sporadically used	25%(1)	25%(1)	50%(2)	25%(1)	25%(1)
Consistency used	25%(1)	25%(1)	0	25%(1)	0

<sup>a</sup> Expected program use measured at program training.

<sup>b</sup> Program use at 10 week post evaluation.

resident choice activities, activity schedules, and visual calendars. One staff from site A was also 'sporadically' using activity modules and program evaluation sheets. The other four group home sites reported they were no longer using the program.

#### 4.4. Program material evaluation

Twelve of the eighteen residents had their medical approval (i.e., PAR-Q) by week 2. Sixteen of 18 resident SAN sheets were completed with six partially completed (e.g. basic information, no picture, skipped questions) and 10 thoroughly completed. The baseline activity sheets were one of the of least used program materials with only five residents having them at least partially completed. The four residents from group home A had goal evaluation sheets partially filled out (i.e., flowchart not completed but notes on progress were included), no other group home site completed these sheets. Eight residents had activity calendars in their rooms, while 10 residents were shown calendars by staff. Group home E had a calendar in the living area for group activities. Residents did not have checked off activity nor goal achievement post its. All of the group home sites, except group home B, had documents included in the specified documentation section in the binder. See Table 4 for program material completion by group home site.

#### 4.5. Health outcomes

##### 4.5.1. Physical activity

Each week the program was implemented an activity sheet should have been completed for each resident. An average of four weekly activity sheets were completed per resident (M 4, SD 2.13, range 1–8). Due to medical approval delays and lack of implementation, the completed activity sheets varied for residents. Fourteen residents' activity was scheduled for the morning and four residents had the majority of their activity scheduled in the evening. Days of scheduled physical activity did not substantial change from pre to post (pre M 2.30 SD 1.36; post M 2.58 SD 1.00).

Due to the lack of available information regarding minutes and intensity of activity, we were unable to determine changes in scheduled activity based on recommended activity guidelines.

Aerobic, motor, strength, and flexibility components were examined within the weekly sheets. There was an overall lack of strength activity planned with only three residents having at least one strength activity planned per week. Flexibility, although strongly encouraged for persons who were non-ambulatory with more severe limitations, was only included in two residents activity schedules. Motor activity was included in the program to replace aerobic activity for persons with severe limitations. Examples of motor activities and post it pictures were provided for staff and residents. Based on resident descriptions in SAN sheets, seven residents were described as having severe limitations. Six of these seven residents had at least one type of motor activity included in their weekly goals. Aerobic activity was the most common type of activity included in the activity sheets.

The variety of activities scheduled was minimal. Group home A had "follow me" and ball pushes for motor, punches for aerobic, and arm lifts for strength and flexibility. Group home B only included walking for aerobic. Group home C listed walking and dancing for aerobic, holding a toy and hitting a balloon for motor, and arm/leg lifts for strength. Group home D included walking, biking, dancing, and jumping jacks for aerobic with flexibility and strength activities. Group home E had walking, dancing, and biking for aerobic with no flexibility or strength activities.

Pedometer data was difficult to obtain from the residents during the pilot study. Of the eligible 10 ambulatory residents, six residents had sufficient pedometer data for use at baseline. Sufficient data included an average of eight or more hours of wear time for three days across the week assessment period (Temple & Stanish, 2009). The mean steps for baseline was 2375 steps (SD 740), with less than 5000 steps per day being considered a sedentary lifestyle (Tudor-Locke & Bassett, 2004). The residents wore the pedometer for an average of 11 h (SD 0.76).

Although strongly encouraged by the research team, only four residents wore the pedometer for post assessment. Of these four

**Table 4**  
Program material completion and health outcomes by group home site.

Group Home	PAR-Q	SANs	Baseline Activity Sheet	Goal Evaluation Sheet	Activity Calendar	Doc Section	PA Steps	PA Knowledge <sup>a</sup>	BMI
A (n=4 res)	3 by week 2 1 by week 5	2 partial 2 thorough	3 partial 1 thorough	4 partial	Location: office With: 1-2 post its; no markings	4 included	Pre (n=1)=1914 Post (n=1)=501 N/A (n=1) <sup>b</sup>	Pre (n=1)=9 Post (n=1)=11 N/A (n=3) <sup>b</sup>	Pre (n=4)=25.2 Post (n=4)=25.4
B (n=5 res)	3 missing 1 by week 3	2 missing 3 partial	5 missing	5 missing	Location: office With: post its; step goals	5 missing	Pre (n=4)=1571 Post: - N/A (n=1) <sup>b</sup>	Pre (n=4)=7.3 Post (n=4)=7.3 N/A (n=1) <sup>b</sup>	Pre (n=5)=26.3 Post (n=4)=25.6
C (n=5 res)	5 by week 2	5 thorough	5 missing	5 missing	Location: res room With: post its; no markings	5 included	N/A <sup>b</sup>	N/A <sup>b</sup>	Pre (n=3)=25.1 Post (n=3)=24.78 N/A (n=2) <sup>b</sup>
D (n=1 res)	1 by week 2	1 partial	1 thoroughly	1 missing	Location: office With: Post its; minutes of activity	1 included	Pre: -	Pre: -	Pre (n=1)=29.8 Post (n=1)=29.2
E (n=3 res)	3 by week 1	3 thorough	3 missing	3 missing	Location: res room & living space With: Post-its; no markings	3 included	Pre (n=3)=3600 Post(n=1)=3800	Pre (n=2)=9.5 Post (n=2)=9 N/A (n=1) <sup>b</sup>	Pre (n=3)=24.5 Post (n=3)=23.5

Notes: Res = residents; PAR-Q = Physical activity readiness questionnaire; SANs = Special Activity Needs sheet; Doc = Documentation; PA = Physical activity; BMI = Body mass index.

<sup>a</sup> PA Knowledge out of 12 possible points.

<sup>b</sup> Not applicable due to severe disability.

residents, only two had valid data with a mean of 2150 steps (SD 1649). Both residents wore the pedometer an average of eight hours across the assessment period. At follow up, staff reported that residents would not wear the pedometers. Due to lack of data, we cannot accurately assess whether pedometer steps changed across the pilot study. The data available indicates that residents likely did not change their physical activity behavior from pre to post pilot study. Table 4 displays physical activity steps by group home site.

From the Behavioral Risk Factor Surveillance System global activity questions, 67% of program coordinators and 53% of staff implementing the program were pursuing less than two days of activity across the week. Only 8% and 32% of program coordinators and staff were doing activity more than five days a week.

#### 4.5.2. Physical activity knowledge

Resident's knowledge about physical activity did not change from baseline to post intervention. Seven residents were able to verbally communicate with the researchers and completed the assessment. Out of a possible score of 12, residents' mean score for physical activity knowledge for baseline assessment was 8.14 SD 1.21. Post assessment results were not substantially different (M=8.57 SD 2.23). Knowledge results by group home site is displayed in Table 4.

#### 4.5.3. Body weight

Resident body weight did not substantially change from baseline, post, to follow up. Baseline body mass index was M 25.67 SD 4.40, post BMI was M 25.23 SD 4.53, and follow up BMI was 23.67 SD 7.79. Table 4 displays BMI from pre and post assessment across the group home sites. Moreover, seventy-nine percent of the staff implementing the program were either overweight or obese according to body mass index.

### 5. Discussion

This formative review of the program indicated that staff and residents need additional supports in order to implement the program more sufficiently. Although the use of theoretical frameworks and community based approach were utilized, the prohibitive barriers faced by adults living in the group home setting may have influenced the application of theory (Bodde & Seo, 2009). This study did not evaluate the barriers for implementation; however, the lack of program use and previous literature would allude to contributing organizational and attitudinal barriers (Bodde & Seo, 2009; Frey et al., 2005; Messent et al., 1999; Robertson et al., 2000).

Program coordinators expectation of the use of program materials was fairly different compared to actual use described by staff. The majority of the program coordinators expected that the staff would use the basic Menu-Choice components consistently, except for the step by step guide which was expected to be used sporadically. None of the program coordinators expected that the program materials would never be used. Moreover, the visual activity calendar was the most expected to be used across program coordinators, where the weekly activity sheets were used most often by the staff. This difference is critical as the visual calendar demonstrates expectation of more resident involvement where the weekly schedules are recorded goals by staff. This indicates that the program coordinators either did not demonstrate their expectations for use or staff were unable to implement the program due to barriers. Additional qualitative information is needed to explore supervisor support and barriers for program implementation.

The overall intent of the program was to intervene at an environmental level. According to the literature, the lack of policies

for physical activity in residential and day programs is a barrier to physical activity (Bodde & Seo, 2009; Messent et al., 1999; Temple, 2007). We did not ask for policy level change; however, we obtained agency level support prior to implementing the program. Although agency managers were on board with the program, there was minimal adherence to making the program a priority. The transferability of the program to the staff did not indicate that the program was a priority to implement within the other tasks of the group home environment. It is evident that policy level change in the group home setting is needed to promote active lifestyles (Messant et al., 1999; Temple, 2007). In fact, Messent et al. (1999) describe that there must be a “mandatory commitment and appropriate resources” available to facilitate service providers in offering physical activity opportunities for adults with intellectual disabilities. Upon program refinement, eliciting policy change could be a next step in implementing Menu-Choice in the group home setting. Specifically, group home agencies should consider including physical activity education in staff induction training, mandate the use of health promotion programs to encourage resident activity, and allocate resources to help staff and residents pursue physical activity.

The lack of responsiveness from weekly progress calls alluded to a lack of program buy-in from program coordinators and staff. One group home site referred all the progress calls to their program coordinator. Program coordinators were extremely difficult to get a hold of and most did not return phone calls. Weekly progress calls were short without questions or comments across the group home sites. Moreover, neither staff nor program coordinators utilized the consultation hours to ask questions. Unfortunately, the lack of health promotion buy in has been documented in the literature for this population and likely the reason for non-responsiveness in the current study (Humphries, Traci, & Seekins, 2008; Marks, Sisirak, Heller, & Wagner, 2010). More insight is needed as to why these consultation hours were not utilized to validate our assumptions.

It is important to note that staff and program coordinators, which themselves had high BMI and low activity levels, may not have found value in implementing an activity program. Perhaps, personal inactivity provided an additional level of insufficient buy-in to implement the program. Moreover, role modeling is key for successful resident participation in activity. Lennox (2002) suggests that staff need to be active role models to demonstrate to the individuals they care for that physical activity is important (Lennox, 2002). Heller, Ying, Rimmer, & Marks, 2002 also suggest that if caregivers believe that physical activity will benefit the persons they care for, then the individual is more likely to be active. This study further demonstrated that staff that had poor health and lacked interest in physical activity were more likely to not provide support and guidance for activity (Heller et al., 2002). Knowing that individuals who work within group home settings have varying attitudes towards health and wellness, this program should be diffused as an environmental change through superior direction. Program refinement will include gaining policy level support to gain staff buy in to implement the program to avoid personal health promoting behaviors. Another change to the program could include having staff create personal physical activity goals within the program. By incorporating dual participation in the program, staff may be more willing to participate and encourage the resident to obtain their goals.

Furthermore, the program was not implemented as it was intended as resident involvement was not maximized. Site A selected residents that they thought would participate, while others that could use the program were excluded. According to the staff, the residents that were excluded were asking why they could not participate. Beyond excluding residents, the fidelity survey showed that only four staff consistently used the resident

visual calendars and resident choice materials. The placement of the calendars also provides insight into residents' involvement as only half of the residents had their calendars in their room or space. As, the program was intended to be an interaction between staff and residents to create activity goals, residents' lack of involvement could have resulted in a disinterest in the program and ultimately limited activity. Self-determined physical activity was determined in our preliminary community engagement study as an important component for an activity program (submitted for publication). Moreover, Heller, Fisher, Marks, and Hsieh, (2014) describe in their article on *Interventions to promote health: Crossing networks of intellectual and developmental disabilities and aging*, how self-determination within health and wellness interventions is critical to improve health of adults with intellectual disabilities (Heller et al., 2014). Lennox et al. (2004) also expressed that active participation in their own health results in overall improved health outcomes for this population (Lennox et al., 2004).

Other examples of inappropriate uses of the program included the lack of one on one implementation, residents not using their visual calendars to mark off activity, not referring to SAN sheets to create activity goals, and overall lack of strength and flexibility included in goals. Menu-Choice training will be revised to ensure that program coordinators are periodically checking program use to ensure proper implementation.

One critical barrier to acknowledge in this study was the staff burden to implement the program. Specifically, at each group home site there was 1–2 staff that either knew the participants well enough to implement the program, complete doctor approvals, san sheets, etc. The program materials were designed for a staff to work with 1–2 residents for implementation. From the weekly progress calls, we realized that there was few staff that consistently worked within the group home sites. This is not surprising as our preliminary study and other literature have documented staff turnover and limited staff as a barrier (Bodde & Seo, 2009; Messent et al. 1999; Temple & Walkley, 2007). For this reason, a few sites only had two staff who consented to participate with implementation. Other staff working within the sites were ‘floaters’ and did not know the residents well enough to implement the program. Thus, the program was not implemented when they were on shift. Additionally, staff and program coordinators described in our calls that they were short staff, so the program could not be implemented to its fullest. These barriers were identified in the preliminary study (submitted for publication), as a result, staff training for in-coming staff was strongly encouraged during the Menu-Choice training with program coordinators. However, staff implementing the program described that new staff were not trained on the materials, which caused inconsistency in program delivery.

The current study is not without limitations. The generalizability of findings to all group home agencies is limited. The current study only evaluates the implementation of Menu-Choice within one group home agency, so the findings are limited to the current sample. Moreover, we were unable to determine actual physical activity changes within the pilot study due to missing pedometer data. Similar protocols for collecting objective physical activity (e.g., pedometers and accelerometers) have been used successfully for persons with intellectual disabilities (Dixon-Ibarra et al., 2013; Peterson et al., 2008; Stanish et al., 2006; Temple, 2007; Temple, 2009). Therefore, future studies with Menu-Choice will need to emphasize the importance of staff assistance for activity assessments and overall implementation of the program materials.

## 6. Conclusions: lessons learned

Based on this preliminary evaluation, several lessons were learned. Health promotion programming in the group home setting is a challenge due to multiple stakeholders involved with implementation. Differing views on the value of physical activity for residents can change how and if a program is delivered. For instance, the results indicate that the majority of program coordinators and staff were overweight and physically inactive. Of the group home sites that used the program their program coordinator and/or staff delivering the program were physical active. To overcome staffs' differing personal views of physical activity, the program needs to be implemented from a top down approach. If physical activity programming is not a direct responsibility of their job, then personal attitudes could play a role in implementation. Next steps for implementation will include obtaining group home agency buy in and policy level change for physical activity programs.

The program training could be a critical component to program adoption. To address feedback, we will include more hands on activities using the program materials. We will also provide activities that will allow exploration of the activity options for residents and specifically persons with severe disabilities. More training on how to write a realistic goal and increase activity is also needed according to participant feedback.

Another lesson learned is, despite intention for program simplicity, staff with limited time need a program that is quicker and easier to implement. The program will be revised for to overcome barriers related staff turnover and shortages. We will reevaluate the unused materials and revise or exclude them to make them easier for use. Although program coordinators are to train staff on the program, an additional video outlining the major components of the program could help guide program coordinator training and ensure the staff receive similar training prior to implementing the program.

To conclude, there is a need to improve the health and wellness for those with intellectual disabilities (Krahn et al., 2006) due to continual rises in obesity and other preventable secondary conditions (Barnes et al., 2013; Haveman et al., 2010; Henderson et al., 2008). With the obvious challenges to include physical activity within the group home schedule, specially designed programs to meet the needs of both residents and staff are essential for successful promotion of activity. Health promotion researchers should target efforts towards this population and environment as there are evident health disparities in health outcomes and health promotion programming.

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