

**Accessibility of Fitness and Recreation Facilities  
for Persons with Disabilities in a Metropolitan City**

BY

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THESIS

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This thesis is dedicated to my family and friends. Thank you for your love and support.  
Without your help, this would not have been possible.

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## **LIST OF ABBREVIATIONS**

ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AIMFREE	Accessibility Instruments Measuring Fitness and Recreation Environments

## SUMMARY

A study of the overall accessibility of fitness facilities in the greater Chicago area was conducted using the Fisher exact test and distribution analysis of data collected from a variety of fitness providers. Specifically, “accessibility” in this study referred to the ease of access each facility provided to individuals with disabilities that limit physical mobility. In all, three types of fitness facilities were identified and compared, including YMCA, franchises, and independently owned businesses. Each of the three types of fitness facilities was represented equally by five locations, for a total sample size of 15 locations. A validated and reliable measurement guide of accessibility was used to evaluate the conditions of the following features of each facility: 1) swimming pool, 2) professional behavior of staff, 3) policies, 4) equipment, 5) elevator, 6) information, 7) bathroom, 8) professional support and staff training, 9) locker room, 10) telephone, 11) entrance areas, 12) hot tubs/saunas, 13) water fountain, 14) parking lot, 15) fitness program, and 16) physical assessment.

Results from the study were mixed and provide insight into the fitness and accessibility literature. In contrast to other studies, a majority of all facilities in the study were scored to be compliant with accessibility standards. However in accordance with previous research, analyses of the measurement data between three facility types supports the conclusion that franchise facilities were more accessible than independently-owned facilities. All facilities that participated in the present study have considerable deficiencies in accessibility and, therefore, room for improvement.

## I. INTRODUCTION

### A. Background

The U.S. Department of Health and Human Services (2000) *Healthy People* 2010 report states that regular physical activity is important for maintaining a healthy lifestyle for people with and without disabilities. Unfortunately, 56% of adults with disabilities do not engage in any leisure-time physical activity compared to 36% among adults without a disability. People with disabilities are considered a high-risk group for developing secondary conditions; are more likely to have a lower limit for the onset of functional limitations associated with the aging process; and have significantly more health complications (Rimmer, 2004). The lack of physical activity among people with disabilities can undermine their ability to care for themselves, work, recreate or engage in community events (Nary, 2000).

The benefits of physical activity for people with disabilities include greater confidence in accomplishing more physically demanding tasks and improving their ability to overcome physical barriers in their environment (Martin-Ginis & Hicks, 2007). Unfortunately, opportunities for people with disabilities to engage in physical activity are often limited due to lack of accessible indoor and outdoor recreation and fitness facilities (Cardinal & Spaziani, 2003). Many facilities have physical or structural barriers that make it difficult or impossible for people with disabilities to use some or all areas of the facility (Rimmer, Riley, Wang, & Rauworth, 2005). Such examples include lack of accessible exercise equipment; narrow paths of travel that make it difficult for wheelchair users to get around equipment; no lift to assist people in and out of the pool; group exercise classes that are at too high a tempo for someone with less dexterity or skill to maintain the pace; and locker rooms that do not have private changing areas or

or wide benches for people who use wheelchairs to dress and undress (Rimmer, 2005a).

Some facilities request that people with disabilities hire a personal trainer as a way to make a facility more accessible (Ellin, 2006). Hiring a personal trainer is not a viable option for many people with disabilities due to financial constraints. In one instance, a woman who lost her vision was told by five different facilities that she would need to hire a personal trainer to assist her in using the facility. Like many other people with disabilities, this individual could not afford a personal trainer and was therefore unable to exercise except for an occasional walk with her husband.

When the Americans with Disabilities Act (ADA) was passed by Congress and signed into law in 1990, the goal was to make society more accessible to people with disabilities (Americans with Disabilities Act, 1991). Under Title III of the ADA, fitness facilities are categorized as “places of public accommodation” (Bennett, 1999, p. 1). Even though these facilities are covered under the ADA, it is likely that many facilities are not in compliance with ADA regulations (Rimmer, 2004). Part of the reason for this is that the term in the ADA, “reasonable accommodation,” is interpreted in different ways by owners of fitness facilities. For example, the ADA states that a two-floor physical fitness facility does not require an elevator provided there is some exercise equipment on the first floor that a person with a disability can use to provide similar opportunities as non-disabled members who have access to the second floor (Bennett, 1999). It is unknown how many fitness facilities comply with this requirement.

There have been only a few studies conducted on the accessibility of fitness centers, and no studies have examined differences in accessibility based on the size of

the facility (i.e., larger vs. smaller facilities) or type of ownership (i.e., commercial vs. private). More research is needed to better understand the level of accessibility based on these different types of characteristics to guide future efforts for improving access to these facilities by people with disabilities. The purpose of this study was to examine the accessibility of fitness facilities in Chicago and surrounding areas to advance our understanding of the types of facilities that are more or less accommodating to people with disabilities. Specifically, this study utilized a comprehensive measure of accessibility for individuals with mobility issues to compare independent, franchise, and YMCA fitness facilities. Results from this study measure the extent to which each identified type of exercise facility adheres to accessibility standards.

B. **Review of the Literature**

Figoni, McClain, Bell, Degnan, Norbury, and Rettele (1998) conducted a study to determine the wheelchair accessibility of 34 fitness centers in the Kansas City metropolitan area. A 74-item compliance checklist, ADA Accessibility Stick (with dimensions required for accessibility labeled on it in order to accurately measure heights and widths such as step heights and doorway widths), and a tape measure were used to collect data by three different investigators. The compliance checklist was based on quantitative wheelchair accessibility criteria stated in the ADA accessibility guidelines for buildings and facilities. In each facility the checklist was used to assess the following areas: parking, ramps, exterior entrances/doors, paths of travel, elevators, female restrooms and locker rooms, telephones, drinking fountains, space around exercise equipment, and customer service desk. Restrooms were found to be the most inaccessible areas of the facility while public doors/entrances were found to be the most

accessible. No facility was 100% compliant under Title III of the ADA. The investigators concluded that although accommodations and modifications had been made, there were still a great number of physical barriers that are limiting wheelchair users from accessing fitness facilities in the Kansas City metropolitan area.

Nary, Froehlich, and White (2000) replicated the study by Figoni et al. (1998) in the Kansas City Metropolitan area and examined the accessibility of fitness facilities using an ADA accessibility measuring device, adapted digital fish scale, steel tape measure, and a checklist based on the Americans with Disabilities Act Accessibility Guidelines (ADAAG). The checklist was modified from Figoni et al. (1998). The focus of the study was to obtain information on the level of compliance with Title III of the ADA in a medium-sized city with a population of approximately 120,000. The survey was designed to address accessibility for persons with mobility impairments. Eight facilities were evaluated using an 83-item wheelchair-accessibility checklist that covered ten areas of the facility including parking, ramps, exterior entrances and doors, path of travel, elevators, restroom/locker rooms, telephones, drinking fountains, and accessibility to, between, and around exercise equipment and customer service desks. The investigators reported that only 38% of facilities with available parking were 100% compliant with ADAAG, and the remainder had an insufficient number of designated parking spaces. Those that had a sufficient number of dedicated parking spaces did not have ramps or access to ramps, while those that did have ramps were no longer than 6 feet in length and did not include handrails. Just one facility (13%) had sufficient space throughout the interior infrastructure while two others (25%) maintained the minimum of 36 inches of free-space surrounding exercise equipment, although none had elevators.

In addition, none of the facilities' locker rooms were accessible, just over one third of the facilities surveyed had accessible public telephones, and only about half of the facilities had compliant restroom and drinking fountain accommodations. None of the eight facilities assessed were 100% wheelchair accessible based on the checklist.

Cardinal and Spaziani (2003) evaluated the degree of ADA compliance in 50 facilities in Western Oregon using direct observation and physical measurements with an ADA Checklist that assessed the same ten domains conducted in previous research by Figoni et al. (1998) and Nary et al. (2000). Their research is directly comparable with the study performed by Figoni et al. in the following areas: 1) exterior and door entranceways, 2) telephone accessibility, 3) accessibility to and around exercise equipment, and 4) accessibility to and around the customer service desk. Cardinal and Spaziani (2003) determined that in assessing exterior entrance doors, there was a 90% compliance rate compared to 70% in the Figoni et al. (1998) study. In the area of telephone accessibility, Cardinal and Spaziani (2003) identified a compliance rate of 88% while Figoni et al. (1998) reported a rate of 74%. Cardinal and Spaziani (2003) found an 8% compliance rate in accessibility to and around exercise equipment and a 37% rate assigned to accessibility to and around the customer service desk compared to Figoni et al. (1998) findings of 16% and 21%, respectively.

Both the Cardinal and Spaziani (2003) and Figoni et al. (1998) studies revealed that exterior entrance doors and telephones were most accessible while customer service desks and free space surrounding exercise equipment were least accessible. Results from Cardinal and Spaziani (2003) and Nary et al. (2000) indicate that wheelchair users would have difficulty navigating through and around many fitness

facilities. Entrances and doorways were among the most accessible feature with restroom and locker rooms among the least accessible (Nary et al., 2000). However, it is important to note that Cardinal and Spaziani (2003) identified three limitations to their findings: 1) the data could be positively skewed since 19.4% of facilities could not be evaluated due to owner operator refusal; 2) only one evaluator conducted the study and the potential for evaluator bias could not be controlled; and 3) while the physical environment was assessed, the social environment was not and therefore the potential for social barriers may exist.

Rimmer, Riley, Wang, Rauworth, and Jurkowski (2004) conducted a study using focus groups in ten regions across the United States to examine various environmental and personal barriers among persons with disabilities in relation to physical activity. Four to six persons were in each of the four focus groups. The four focus groups were: 1) people with disabilities, 2) architects, 3) fitness/recreation professionals, and 4) city planners and park district managers. The groups discussed four different accessibility venues: 1) fitness centers, 2) swimming pools, 3) parks, and 4) trails. The study's findings revealed that there were many barriers including: 1) barriers and facilitators related to the built and natural environment, 2) economic issues, 3) emotional and psychological barriers, 4) equipment barriers, 5) barriers related to the use and interpretation of guidelines, codes, regulations, and laws, 6) information-related barriers, 7) professional knowledge, education, and training issues, 8) perceptions and attitudes of persons who are not disabled, including professionals, 9) policies and procedures both at the facility and community level, and 10) availability of resources. The researchers concluded that there is a need for developing a tool that measures personal

and environmental factors that affect access and use in fitness and recreation facilities (Rimmer et al., 2004).

Rimmer, Riley, Wang, and Rauworth (2004) developed an assessment tool to measure the accessibility of fitness and recreation facilities for persons with mobility disabilities. This survey instrument was divided into 16 different subscales: 1) swimming pool, 2) professional behavior, 3) policies, 4) equipment, 5) elevator, 6) information, 7) bathroom, 8) professional support and training, 9) locker room, 10) telephone, 11) entrance areas, 12) hot tubs/saunas, 13) water fountain, 14) parking lot, 15) fitness program, and 16) physical assessment. "Gold-trained raters" who were fitness professionals were trained to use the Accessibility Instruments Measuring Fitness and Recreation Environments (AIMFREE) tool and assessed the accessibility of 35 physical fitness facilities in nine different regions across the United States. Of the 35 different facilities that were assessed, 19 were in urban areas and 16 were in suburban areas. The study's findings confirmed that the AIMFREE instrument is a valid and reliable tool for assessing the accessibility of fitness and recreation facilities.

Rimmer et al. (2005) examined health club facility accessibility for individuals with mobility disabilities and vision impairments. Using the AIMFREE instrument that was developed in a previous study (Rimmer, Riley, Wang, & Rauworth, 2004), they evaluated environmental barriers in 35 health clubs and fitness facilities throughout the country. The study used a Rasch analysis model to evaluate the data. Rasch analysis was used for several reasons: the scores are easy to compute; they are based on observed criteria; and the facility's level of accessibility can be directly compared with the scale's items and their estimated level of difficulty. Using the Rasch model allowed

the researchers to “observe the relationship between facility accessibility and the probability of the facility possessing various accessibility features” (Bennett, 1999, p. 2024). The study indicated that “all facilities had a low to moderate level of accessibility” (Bennett, 1999, p. 2027) concerning the built environment, equipment, policies, and staff.

The researchers concluded that their findings were consistent with the studies conducted in Western Oregon by Cardinal and Spaziani (2003) and by Figoni et al. (1998) in Kansas City. Moreover, although two thirds of the facilities observed had staff members that were perceived to take an interest in providing “good ideas” to patrons with disabilities, the majority of health club owners and managers lacked a meaningful understanding of their respective facility’s level of ADAAG compliance.

Rimmer et al. (2005) noted that there are three areas to be considered when addressing accessibility issues of fitness and recreational facilities: physical environment, discrimination, and social attitudes. The physical environment affects ease of access for persons with disabilities and therefore facilitates or impedes the individual’s desire to engage in physical activities. Often through poor architectural design, the built (physical) environment leads to physical access barriers whereas discrimination and poor social attitudes are commonly found in organizational policies and practices that do not consider the unique needs of people with disabilities. Although the U.S. Government has passed laws that accommodate people with disabilities, many local and state parks, fitness centers, health clubs, spas, gymnasiums, playgrounds, pools, trails, and sports fields are inaccessible to children and adults with mobility disabilities. Rimmer et al. (2005) also noted that the lack of visibility of persons with

disabilities in commercial and print media limits opportunities for people with disabilities to envision themselves using the facility. In addition, he noted the need for private health organizations and policy makers to collectively create and implement physical activity programs that would specifically target people with disabilities.

In a separate paper, Rimmer (2005b) stated that people with physical disabilities experience further mobility complications as a result of the aging process: “Tasks that might have been easily accomplished in younger adulthood, such as transferring from a wheelchair to an automobile, ascending a ramp, or walking with braces, can become major obstacles for individuals aging with a physical disability and often require greater assistance from friends, family members, and personal care assistants” (p. 41). Moreover, the importance of recognizing activity limitations of middle and older adults with physical impairments has not been satisfactorily addressed and that part of the loss in function observed in many older adults with disabilities may be related to sedentary behavior and a reduction in physical fitness. However, this shortcoming can be addressed by ensuring that people with disabilities have the opportunity to access physical fitness and recreational environments at an earlier stage in life in order to make it part of their daily routine.

### C. **Significance of the Study**

This study provides important information on the accessibility of public and private fitness facilities related to people with mobility disabilities. The intent is to provide owners and operators of fitness facilities with a better understanding and interpretation of accessibility with respect to this underserved population. This greater awareness can lead to potential changes in the future that will improve accessibility of

fitness facilities for people with mobility disabilities. This, in turn, will allow people with disabilities the opportunity to independently improve their own health and quality of life.

1. **Specific aims**

The specific aim of this study was to examine the accessibility of fitness facilities for persons with mobility disabilities in the Chicago metropolitan area. A secondary aim was to compare facility accessibility by type of facility (franchise vs. independent vs. YMCA). Facilities that were able and willing to make changes based on the results of this study were given literature detailing suggestions for improving the accessibility of their locations as an incentive for participating in this study.

2. **Hypotheses**

The first research hypothesis is that all facilities, franchise and independently (privately) owned, will have low accessibility scores (less than 50% compliance) using the AIMFREE instrument. The second research hypothesis is that franchise fitness facilities will have higher accessibility scores on the AIMFREE than privately owned, independent fitness facilities.

D. **Summary**

The lack of accessible fitness and recreation facilities for people with disabilities provides a clear indication that facilities need to understand how to make their facilities more accessible and engaging to people with disabilities. The studies conducted in Kansas (Figoni et al., 1998) and Western Oregon (Cardinal & Spaziani, 2003) concluded that there were no fitness or recreation facilities that were 100% accessible for people with mobility disabilities (i.e., wheelchair users) based on the ADAAG guidelines. However, most of the research that has been conducted on fitness and

recreation facility accessibility has addressed only the built environment. This study went one step further by using a valid and reliable assessment tool to measure not only accessibility of the built environment, but also access to programs, equipment, information, and other areas that are not typically assessed from an ADA-derived checklist. It is imperative that fitness and recreation facilities have a higher level of accessibility so that people with mobility disabilities are provided greater opportunities to improve their health. To date, there has never been a systematic evaluation of fitness facilities in the Chicago metropolitan area, nor has there been a comprehensive evaluation of public and private facilities using a valid and reliable instrument.

## II. METHODOLOGY

### A. **Study Design and Participants**

#### 1. **Participants**

Facilities were identified through the Chicago Yellow Pages and internet. Owners/managers were contacted and asked to participate in the study. Out of a total of 29 facilities contacted, 15 facilities agreed to participate and a total of 15 fitness and recreation facilities were assessed. Each of the facilities fell into three categories: 1) YMCAs (n=5), 2) franchise businesses (n=5), and 3) independent businesses (n=5). For the purposes of this study, “franchise” was defined as any corporation or business owning more than one facility either locally or nationally. “Independent” was defined as a privately owned single facility.

#### 2. **Instrument**

The focus of the study was to examine the accessibility of fitness and recreation facilities in Chicago using a validated and reliable instrument called AIMFREE. Data were collected using the Professional (vs. Consumer) version of the AIMFREE fitness facility manual. This instrument includes the following sections: 1) swimming pool, 2) professional behavior, 3) policies, 4) equipment, 5) elevator, 6) information, 7) bathroom, 8) professional support and training, 9) locker room, 10) telephone, 11) entrance areas, 12) hot tubs/saunas, 13) water fountain, 14) parking lot, 15) fitness program, and 16) physical assessment. The AIMFREE tool requires that a tape measure and Smart Tool (Beneficial Designs, Minden, NV) be used to take direct measurements of widths of doorways and slopes of ramps and other inclines. A Smart Tool is a digital instrument that uses an automated level that computes percent grade or

incline. Collection of data to meet the targeted sample size took approximately four months. Upon completion of data collection and analysis, each facility that participated in the study was provided with a list of low-cost, simple recommendations in areas that were found to have low accessibility.

### 3. **Procedures**

All facilities were initially contacted by telephone to ascertain interest in participating in the study. Those locations that were willing to participate were then scheduled for an in person meeting at the facility. Once on site, the contacts at each facility were briefed as to the nature and intentions of the study, as well as a description of confidentiality. Each contact then signed a consent form detailing the terms of participation in the study. A copy of this form can be found in the appendix. After these introductions, the contacts provided a short guided tour of the facility and left the coder to complete the AIMFREE instrument alone.

Nearly all data were collected from a walk-through of the facility. This required a measurement of certain items in areas and rooms of the facility including placement of specific equipment. To measure those areas designated in the AIMFREE instrument, the Smart Tool and a measuring tape were used. All data were recorded on a paper copy of the AIMFREE instrument by the same coder.

Certain sections of the AIMFREE tool required an interview with the facility contact. Of the 15 facilities included in the study, seven facility staff (one from each facility) agreed to be interviewed. The five designated YMCA locations completed interviews with a Manager (one of these locations involved an interview with a Program

Director), and two of the five franchise facilities allowed an interview with the Operations Manager.

Data collection began in February 2009 and all 15 sites were completed by June 2009. All assessments were completed in one visit that took approximately 1.5 hours at the smaller facilities and up to 4 hours at the larger facilities. All data were collected during the evening hours (weekdays) or on weekends.

#### 4. **Data analysis**

Data were analyzed using the scoring system established for the AIMFREE fitness manual (1=accessible, 2=not accessible, 3=n/a or not applicable). The AIMFREE tool gives each section of the facility (i.e., area of the facility) a score from 0-100. A score of 100 indicates the highest level of accessibility while a score closer to 0 indicates very low accessibility. However, results for this study were derived from an analysis of the data from each item, utilizing the individual score responses of 1, 2, or 3 as described above, rather than utilizing the 1-100 sectional scores. As presented in the representative data tables and analysis throughout this study, distribution scores from individual items were evaluated based on scoring responses using numerical evaluations of accessible, not accessible, or not applicable (1, 2, and 3). Responses with more positive, or accessible scores (means closer to 1) are more preferable than means nearing 2, or not accessible, as this indicates that more items in the section were evaluated as being inaccessible according to AIMFREE criteria. Scores of 3, or not applicable may not be negative or positive, as they may simply indicate that an area was not present to be assessed. These items are indicated in the analysis of the second hypotheses to develop insights into the differences of facility types, though responses of

“N/A” were removed for assessing the first hypothesis. For example, some items dealt with juice bar measurements. If there was no juice bar available, it would be impossible to determine if it was accessible or not.

Based on this scoring criterion, the researchers identified low scoring areas and developed recommendations for the owners/managers of these facilities. For Hypothesis 1, that all facilities, franchise, and independently (privately) owned, will have low accessibility scores (less than 50% compliance) using the AIMFREE instrument, descriptive statistics were used to determine the level of compliance for each section of the facility and presented as a percentage (a score of overall compliance of more than 50% constituted a rating as “compliant”). The score was derived by dividing the number of items that were accessible by the total number of items in that section of the instrument to obtain the percent compliance for each facility. This was an indicator if the section being measured was more accessible than not. While this does not necessarily indicate complete accessibility, as some items may have responded as being inaccessible in areas, the overall evaluation is more accessible than inaccessible. Frequency counts of those items related to accessibility compliance were totaled and revealed that more than 50% of all facilities were rated as compliant (Mode=1), as measured by responses of 1 for positive (accessible) compliant responses “Yes” and a score of 2 for noncompliant (inaccessible) facility characteristics “No.”

For Hypothesis 2, which predicted that franchise fitness facilities would have higher accessibility scores on the AIMFREE measure than privately owned, independent fitness facilities, the Fisher exact probability test was used to determine if

there were differences between facility types in their accessibility, lack of accessibility, or non-applicability based on the evaluation standards.

5. **Scoring**

Scoring was calculated using the same system as described for Hypothesis 1. All levels of analysis used a .05 level of significance.

### III. RESULTS

Fifteen facilities were examined including five independent facilities, five franchise facilities and five YMCAs. Each location that agreed to participate in the study was given the AIMFREE tool and measurement materials to evaluate their facility's accessibility. Within the AIMFREE tool, there are 16 sections, each concerning an area or characteristic of the exercise facility as it may contribute to accessibility by those with mobility limitations. The purpose of the study, as well as the security and confidence of the data collected, was described to the participants. After the surveys had been completed, all of the results were kept secure by the facilitator, who was the principle investigator who assessed the site using the AIMFREE tool. After the assessment was completed, participating locations were provided with literature outlining potential strategies for improving accessibility throughout their facility.

Data collected from the participating sites were analyzed using the scoring method provided in the AIMFREE fitness manual. These results were analyzed with descriptive statistics and cross-tabulations of facility type by accessibility rating to test the study hypotheses. It should be noted that in some data provided here, response means should be viewed in light of possible effects of their corresponding standard deviations. For example, a mean nearing 2, or inaccessible, may not necessarily indicate that most facilities were inaccessible. If the standard deviation of such an item is large, it is likely that some facilities responded with "N/A," which would slant the overall mean to appear higher than the most frequent responses would actually provide.

A. **Facility Score**

Results from the data analysis are presented in this section and organized by their respective section in the AIMFREE tool. The independent variable, facility type, included three levels: YMCAs, independent facilities, and franchise facilities. The dependent variable was the appropriate accessibility specification for each item assessed in AIMFREE.

B. **Section A: Access Routes and Entrance Areas**

1. **Pedestrian ramps**

Table I provides the results on the two AIMFREE items related to ramps. There were only two accessible facilities, both franchise operators. The majority of facilities (8 of 10) responded exclusively with “N/A.” Differences were not statistically significant on the Fisher exact test ( $p=.089$ ). It should be noted, however, that this response is not always negative; “N/A” may indicate that there is no need for a ramp because of facility design (e.g., single floor facility) that does not demand such a feature for accessibility.

There were similar differences on the second item related to ramps between facility types according to the Fisher exact test ( $p=.089$ ). Analysis revealed that while independent and YMCA locations had responses of “N/A,” franchise facilities were almost split between meeting the ramp compliance measured by AIMFREE by having pedestrian ramps made of non-slip material, though most did not have the ramp measures necessary for the study (Table I).

**TABLE I**

DO ACCESS ROUTES INCLUDE RAMPS?			
Item	Yes	No	N/A
A21c: Handrails on Long Ramps			
Franchise	2	0	1
Independent	0	0	5
YMCA	0	0	2
A21d: Ramps Made of Non-Slip Material			
Franchise	2		1
Independent	0		5
YMCA	0		2

## 2. **Entrance areas**

Table II shows the distribution scores for the one item related to entrance areas (i.e., existence of an appropriately sized juice bar which includes a portion that is three feet high or less and a clear width of three feet). There was a significant difference (Fisher exact test  $p=.011$ ) between facilities. Analysis revealed that YMCA and independent locations responded “N/A” (again, a response of “N/A” is not necessarily negative as it may indicate that the location did not have such a feature to score). Franchise facilities mainly indicated that if the location had a juice bar, the counter at the bar did not have a portion that was three feet high or less with a clear width of at least three feet.

**TABLE II**

A31: MEASUREMENTS FOR JUICE BAR COUNTERS			
Facility	Yes	No	N/A
Franchise	2	2	1
Independent	0	0	5
YMCA	0	0	5

C. **Section B: Equipment**

One item was analyzed to determine whether a significant difference was shown between facility types and the existence of clear space adjacent to exercise machines, which required a clear space of at least 2 feet, 6 inches wide and 4 feet long. Differences between facility types on this item approached but did not achieve significance (item B2,  $p=.066$ ). Although the independent and YMCA facilities responded primarily “No” to having the appropriate considerations of clear space per type of exercise equipment, franchise facilities did have a majority of positive responses as shown in Table III.

**TABLE III**

B2: CLEAR SPACE MEASUREMENTS FOR EACH TYPE OF EXERCISE EQUIPMENT

Facility	Yes	No	N/A
Franchise	4	1	0
Independent	2	3	0
YMCA	0	5	5

1. **Cardio Equipment**

In the AIMFREE equipment section under cardio equipment, one item was reviewed to determine whether a significant difference was shown between facility types regarding the existence of audible cues provided by the exercise equipment. The analysis was not significant for this AIMFREE item (B17f, Fisher exact test  $p=.066$ ). Analysis revealed that while independent locations showed some variance in responses, they were more likely to not have audible cues on their equipment. YMCA and franchise locations all had audible cues on their exercise equipment. Distribution scores for this item are provided in Table IV.

**TABLE IV**

B17F: DOES EXERCISE EQUIPMENT PROVIDE AUDIBLE CUES?			
Facility	Yes	No	N/A
Franchise	5	0	0
Independent	2	3	0
YMCA	5	0	0

D. **Section C: Information**

Under Section C, Information, three items, C1a, C2, and C15, were examined. The first item was analyzed to determine whether a significant difference was shown between facility types and the existence of visual cues throughout the facility to alert patrons to their current orientation, as well as other areas in the building. Analysis was not significant for this AIMFREE item (C1a, Fisher exact test  $p=.066$ ). Analysis revealed that while franchise and YMCA facilities showed some variance in responses, they were more likely to have the necessary visual cues compared to independent locations, which had no variance in responses and none had the visual cues. Distribution for this item is provided in Table V.

**TABLE V**

C1A: VISUAL CUES AVAILABLE TO ORIENT INDIVIDUALS TO THEIR CURRENT LOCATION IN THE BUILDING AND TO VARIOUS SECTIONS OF THE FACILITY

Facility	Yes	No	N/A
Franchise	2	3	0
Independent	0	5	0
YMCA	4	1	0

The second item under Information was not significant, and examined the existence of information posted on marquees or bulletin boards available in alternative formats (C2, Fisher exact test  $p=.066$ ). Subsequent analyses revealed that none of the locations had posted marquees or bulletin boards.

The third item under Information related to the availability of reading material in alternative formats yielded interesting feedback as well. The analysis was not significant for AIMFREE question C15 (Fisher exact test  $p=.068$ ), although there were relatively large differences in the means between independent and franchise facilities whereby more YMCA facilities had more literature in alternative formats. Distributions for these items are provided in Table VI.

**TABLE VI**

C2: ARE BROCHURES AND OTHER LITERATURE PERTAINING TO THE  
FACILITY READILY AVAILABLE?

Facility	Yes	No	N/A
Franchise	0	5	0
Independent	0	2	3
YMCA	0	5	0

---

C15: Are reading materials provided in alternative formats?

Franchise	2	3	0
Independent	1	4	0
YMCA	5	0	0

E. **Section D: Locker Rooms and Shower**

1. **Locker rooms**

Under the domain of Locker Rooms, there were a total of six items. The first item examined the existence of doors leading to the locker room. There were significant differences between facilities (Fisher exact test  $p=.003$ ). Independent facilities showed some variance in response, but overall did not have doors leading to the locker room as indicated by a response of “No” or “N/A.” Franchise locations all indicated that they did not have doors leading to the locker rooms, while all YMCA facilities had doors. The distribution of responses for this item is shown in Table VII.

**TABLE VII**

D2: ARE THERE DOORS LEADING TO THE LOCKER ROOM?			
Facility	Yes	No	N/A
Franchise	0	5	0
Independent	1	3	05
YMCA	5	0	05

The next set of items related to locker room accessibility can be found in Table VIII. The second item under locker rooms was existence of automatically opening doors. There was not a significant difference between facilities (D2a, Fisher exact test  $p=.107$ ). Analysis revealed that no franchise locations responded positively to this item, and the majority of independent and YMCA facilities responded either that they did not have automatically opening doors leading to the locker room or “N/A.”

The third item assessed the existence of doors that could be opened through the use of a pushbutton. There was also not a significant difference between facilities (D2b, Fisher exact test  $p=.107$ ). Analysis revealed that while franchise locations failed to respond to this item, independent and YMCA locations overall did not have a pushbutton available for the automatic doors.

The fourth item, existence of doors that had a clear width greater than 2 feet, 8 inches, was not significantly different between facilities (D2c, Fisher exact test  $p=.107$ ). Analysis revealed that franchise locations did not respond to this item. However, independent facilities showed some variance but overall did not have a clear width greater than 2 feet, 8 inches. YMCA locations all responded positively to this item.

The fifth item, existence of doors with a threshold that is  $\frac{1}{2}$  inch high or less, was not significant (D2d, Fisher exact test  $p=.107$ ).

The sixth item, existence of a clear path leading from the locker room entrance to the lockers that is at least 3 feet wide, was not significant (D3, Fisher exact test  $p=.051$ ). Analysis revealed that while franchise and YMCA locations had a clear path leading from the locker room to the lockers with the appropriate width, independent facilities were most likely to not have this clear path.

TABLE VIII

LOCKER ROOM ACCESSIBILITY			
Item	Yes	No	N/A
<b>D2: Existence of Locker Room Doors</b>			
Franchise	0	5	0
Independent	1	3	0
YMCA	5	0	0
<b>D2a: Existence of Automatic Doors</b>			
Franchise	0	0	0
Independent	0	1	2
YMCA	0	5	0
<b>D2b: Existence of Pushbuttons</b>			
Franchise	0	0	0
Independent	0	1	2
YMCA	0	5	0
<b>D2c: Existence of Acceptable Door Width</b>			
Franchise	0	0	0
Independent	1	0	2
YMCA	5	0	0
<b>D3: Existence of Clear Path to Lockers</b>			
Franchise	5	0	0
Independent	1	3	0
YMCA	4	1	0

## 2. **Showers**

There was a significant difference between facilities on item D23I, existence of a shower with a fold-out seat or free shower bench (D23I, Fisher exact test  $p=.045$ ). Analysis revealed that franchise and YMCA facilities were more likely to have a

fold-out seat or shower bench available, although YMCA locations had some variance in responses. Independent facilities all responded negatively to this item. Distributions are shown in Table IX.

**TABLE IX**

D23L: IS A FOLD SEAT OR FREE SHOWER BENCH AVAILABLE?			
Item	Yes	No	N/A
Franchise	5	0	0
Independent	0	2	0
YMCA	4	1	0

F. **Section G: Bathrooms**

There was a significant difference between facility types on the existence of a pushbutton door entrance to enter the bathroom (G2, Fisher exact test  $p=.006$ ).

Analysis revealed that none of the locations had a push button door entrance but franchise facilities responded “N/A,” while independent and YMCA facilities responded “No” with the exception of one YMCA facilities that responded “N/A.” Distributions are shown in Table X.

**TABLE X**

G2: IS A PUSHBUTTON AVAILABLE TO OPEN THE ENTRANCE DOORS TO THE BATHROOM?

Facility	Yes	No	N/A
Franchise	0	0	5
Independent	0	5	0
YMCA		4	1

On the second item, existence of bathroom doors that open automatically, there was a significant difference between types of facilities (G3, Fisher exact test  $p=.006$ ). Analysis revealed that none of the facilities had doors that opened automatically. However, franchise facilities responded “N/A” while independent and most YMCA facilities responded “No.” Distributions appear in Table XI.

**TABLE XI**

G3: DO THE BATHROOM DOORS OPEN AUTOMATICALLY?

Facility	Yes	No	N/A
Franchise	0	0	5
Independent	0	5	0
YMCA	0	4	1

Table XII provides the results on several bathroom accessibility items. On the first item, existence of bathroom doors that have a clear width greater than 2 feet, 8 inches, there was a significant difference between facilities (G4, Fisher exact test  $p=.018$ ). Analysis revealed that none of the facilities had the necessary clearance for bathroom doors but franchise facilities responded “N/A” more often to this item than the other two types of facilities.

The second bathroom item assessed the existence of grab bars installed within the accessible stall(s) that are 1½ inches from the stall wall to which they are mounted. There was not a significant difference between facilities (G15c, Fisher exact test  $p=.089$ ). Analysis revealed that franchise and YMCA facilities all had appropriately measured grab bars on the wall while independent facilities had some variance and overall responded negatively to this item.

The third item, existence of sidewall grab bars between 40 and 42 inches long, was significant (G15d, Fisher exact test  $p=.012$ ). Analysis revealed that franchise and YMCA locations all had appropriately long sidewall grab bars, while franchise locations were unlikely to have this item.

The fourth item, existence of stalls measured by a distance from the back of the stall to the far end of sidewall grab bars as 12 inches or less with sidewall grab bars between 40 and 42 inches long, did not show significance between facility types (G15e, Fisher exact test  $p=.109$ ). Analysis revealed that none of the locations had correctly spaced sidewall grab bars. Franchise facilities did have some variance in responses, indicating that some locations responded “N/A” to this item.

The fifth item, existence of stalls measured by a distance from the back of the stall to the far end of sidewall grab bars as 12 inches or less with sidewall grab bars between 40 and 42 inches long, was not significantly different between facility types (G15f, Fisher exact test  $p=.109$ ). Analysis revealed that all franchise and YMCA facilities had correctly mounted grab bars, but overall scores for independent locations indicated that they were more likely to not have this structure. Distribution findings for these five bathroom items appear in Table XII.

TABLE XII

DISTRIBUTION DATA FOR ITEMS REGARDING BATHROOMS				
Item	Yes	No	N/A	
<b>G4: Clear Width of Doors</b>				
Franchise	1	1	3	
Independent	5	0	0	
YMCA	2	3	0	
<b>G15c: Correct Distance of Stall Grab Bars to Wall</b>				
Franchise	5	0	0	
Independent	1	0	2	
YMCA	2	0	0	
<b>G15d: Correct Length of Stall Grab Bars</b>				
Franchise	5	0	0	
Independent	0	1	2	
YMCA	3	0	0	
<b>G15e: Correct Distance from Back of Stall to Grab Bar</b>				
Franchise	0	5	0	
Independent	0	1	2	
YMCA	0	3	0	
<b>G15f: Height of Grab Bars to Floor</b>				
Franchise	5	0	0	
Independent	1	0	2	
YMCA	3	0	0	

G. **Section J: Policies**

Under the Policy section of AIMFREE, there was not a significant difference between facility types (J25, Fisher exact test  $p=.333$ ) for the item that related to whether or not the facility provided information to consumers if their facility was not accessible.

Analysis revealed that no independent facilities responded to this item; franchise locations all responded “N/A,” while most YMCA facilities responded positively. Table XIII shows the distributions for this item.

**TABLE XIII**

J25: IF YOUR FACILITY IS NOT ACCESSIBLE FOR A PARTICULAR CONSUMER, IS INFORMATION READILY AVAILABLE CONCERNING THE LOCATION OF ACCESSIBLE FACILITIES IN THE VICINITY?

Item	Yes	No	N/A
Franchise	0	0	1
Independent	0	0	0
YMCA	4	1	0

H. **Section M: Parking**

Two items were assessed under Parking. There was a significant difference for the AIMFREE item related to accessible parking (M1, Fisher exact test  $p=.015$ ).

Analysis revealed that both YMCA and franchise locations did have their own parking lot, structure, and area for accessible parking while no independent locations had accessible parking.

There were also differences between facilities for the second item, availability of spaces for lift-equipped vans to have a clear width of 16 feet (M1d, Fisher exact test  $p=.143$ ). Analysis revealed that no independent facilities responded to this item, while

most franchise facilities did not have the appropriate clearance for lift-equipped vans. All YMCA locations had this item. Distribution data on both items appear in Table XIV.

**TABLE XIV**

DOES THE FACILITY HAVE ITS OWN PARKING LOT, STRUCTURE, OR AREA?			
Item	Yes	No	N/A
M1: Existence of Dedicated Parking			
Franchise	3	2	0
Independent	0	5	0
YMCA	4	0	0

Table XV is a summary table of scoring for all facilities across items. Within the table, scores for all items within each area of accessibility were averaged to summarize the general distribution of facility scores on each item of the AIMFREE tool. The AIMFREE tool included three response options, each scored with a numerical value. A recorded value of 1 was accessible, a score of 2 inaccessible, and a score of 3 not applicable. The mean scores are intended to represent the general response tendency: low averages reflect accessibility, mid-point scores represent inaccessibility, and high scores represent lack of applicability. The standard deviations illustrate the degree of variability within the sample on the item.

As demonstrated by the descriptive data below in Table XV, there were differences in response mode between types the facilities. Overall, YMCA facilities

returned slightly more positive scores regarding accessibility than franchise facilities, and both of these types of facilities scored considerably better than independent facilities. Response rates from the YMCA locations were slightly better than the franchise facilities. In general, these findings, across the three types of facilities, had similar accessibility issues compared to previous research.

TABLE XV

SUMMARY OF ITEM SCORES ORGANIZED BY FACILITY TYPE			
Section	Mean	Standard Deviation	Sample Size
<b>A: Access Route and Entrance Areas</b>			
Franchise	1.59	.66	5
Independent	1.80	.51	5
YMCA	1.69	.67	5
<b>B: Equipment</b>			
Franchise	1.66	.42	5
Independent	1.77	.23	5
YMCA	1.69	.24	5
<b>C: Information</b>			
Franchise	1.76	.29	5
Independent	2.04	.58	5
YMCA	1.70	.38	5
<b>D: Locker Rooms and Shower</b>			
Franchise	1.41	.36	5
Independent	1.54	.47	5
YMCA	1.58	.53	5
<b>E: Hot Tubs and Whirlpools*</b>			
Franchise	1.57	.26	5
YMCA	1.64	.00	1
<b>F: Elevators*</b>			
Franchise	1.33	.23	4
YMCA	1.24	.18	2
<b>G: Bathrooms</b>			
Franchise	1.33	.37	5
Independent	1.65	.61	5
YMCA	1.40	.36	5
<b>I: Professional Support and Training*</b>			
Franchise	1.15	.00	1
YMCA	1.36	.41	5
<b>J: Policies*</b>			
Franchise	1.43	.00	1
YMCA	1.53	.59	5
<b>K: Programs*</b>			
Franchise	1.20	.00	1
YMCA	1.54	.73	5
<b>L: Swimming Pool*</b>			
Franchise	1.68	.41	5
YMCA	1.68	.24	2
<b>M: Parking*</b>			
Franchise	1.43	.51	4
YMCA	1.13	.10	4

**TABLE XV** (continued)

SUMMARY OF ITEM SCORES ORGANIZED BY FACILITY TYPE			
Section	Mean	Standard Deviation	Sample Size
<b>N: Telephone*</b>			
Franchise	2.36	.83	2
YMCA	1.69	.00	1
<b>O: Water Fountains</b>			
Franchise	1.40	.39	5
Independent	1.66	.48	5
YMCA	1.50	.34	5
<b>Total</b>			
Franchise	1.52	.36	5
Independent	1.74	.48	5
YMCA	1.50	.34	5

\* Indicates a section in which independent facilities responded with 3 and not applicable.

Franchise facilities were rated as having higher overall accessibility scores, with more locations responding positively to prompts regarding accessibility (Mode=1) than independent locations (Mode=2). Compliance scores by facility type are provided in Table XVI below.

**TABLE XVI**

COMPLIANCE RATE BY FACILITY TYPE

Percentage of Compliance (%)			
	Franchise (n=5)	Independent (n=5)	YMCA (n=5)
Range	38.4%-60.1%	25.9% -89.8%	40.0% -68.7%
Average	58.30%	36.60%	51.60%

Overall, the findings were consistent with previous research, whereas all locations presented some level of barriers to accessibility.

Significant differences in accessibility were measured by the AIMFREE instrument between facilities. These discrepancies illuminate areas where certain facility types may be doing well, or which are opportunities for improvement. Specifically, in Section A: Access Routes and Entrance Areas, there was one item that resulted in significant differences between facility types. For item, A31, (If the facility has a snack or juice bar, does the counter at the bar have a portion that is 3 feet high or less and a clear width of at least 3 feet?) more independent and franchise facilities reported having appropriately sized (height was wheelchair accessible) juice bars compared to YMCA

facilities. Further, in Section D: Locker Rooms and Showers, the AIMFREE found that there were two items with significant differences between facility type pertaining to locker room doors (D2) and the existence of seats in the shower area (D23I). More YMCA facilities had doors leading to the locker room, and generally had scores indicating the most accessible qualities compared to independent and franchise locations. In Section G: Bathrooms, four items were found to be significant between facilities. These included topics regarding: whether there was a pushbutton available to open doors to the bathrooms (G2), if the bathroom doors opened automatically (G3), whether bathroom doors had a clear width greater than 2 feet, 8 inches (G4), and the presence of grab bars which were ADA compliant (G15d). The AIMFREE found that more YMCA facilities reported having doors opened by pushbuttons than independent locations, and there were more facilities with automatically opening bathroom doors. YMCAs and franchise facilities had the most accessible responses regarding grab bars, followed by independent facilities. Finally, in Section M. Parking, there were two items that were found to be significant. Differences regarding whether the facility had its own parking lot, structure, or area (M1), and if spaces for lift-equipped vans have clear widths of 16 feet (M1d) were different between facilities. For item M1, YMCA locations scored much better than franchise facilities, both of these types of facilities had higher accessibility scores compared to independent locations. Item M1d, returned similar results, indicating desirable scores for YMCAs and less desirable scores for franchise facilities; for this item, independent facilities returned no data.

#### **IV. DISCUSSION**

Previous research, beginning with Figoni et al. (1998), has demonstrated that most fitness facilities fail to reach total compliance with Title III of the ADA that requires public facilities to be accessible to people with disabilities. The earliest cited literature used an ADA checklist on a small number of exercise facilities in the Kansas City metropolitan area and found that no facility was 100% ADA compliant. The researchers concluded that additional efforts were necessary to make these locations more accessible to individuals with mobility limitations. A follow up study in this same region found similar results (Nary et al., 2000).

Supported by the progression of research emphasis and techniques presented in the relevant literature, this study applied the AIMFREE tool in its measurements of the participating locations in the Chicago and surrounding area and included three types of exercise facilities – independent, franchise and YMCAs. The present study supports previous findings that most fitness facilities have limited accessibility. However, there were differences between types of facilities.

The evolution of research on exercise facilities regarding levels of accessibility for people with mobility limitations and ADA compliance has led to the identification of three major barriers: physical environment, discrimination, and social issues. These can all work together or separately to limit the ability of people with mobility limitations to make full use of such facilities (Rimmer et al., 2005). This, in combination with the noted importance of physical activity and promoting self-confidence among people with mobility limitations, was the motivation behind this research study. There is a growing need to learn more about the characteristics of an exercise facility and what limitations

(i.e., barriers) exist that prevent people with mobility disabilities from using these facilities.

Findings from this study (Rimmer et al., 2005) should be used to further improve the accessible of fitness facilities for impaired individuals and go beyond the basic requirements. To this end, the study also utilized criteria beyond those provided by the ADA checklist, which makes it unique compared to most of the previous research with the exception of the work conducted by Rimmer and colleagues. For example, measuring space around exercise equipment or assessing accessibility of information was not examine in the research by Figoni et al. (1998), Nary et al. (2000), and Cardinal and Spaziani (2003). As presented by the relevant literature, the major barriers facing people with mobility limitations can be categorized as a) physical or built conditions, b) discrimination, and c) social issues. Most of the research has focused on the problematic nature of the physical or built environment with substantially less research on other areas of accessibility.

The first research hypothesis proposed that all facilities, franchise, YMCA, and independently (privately) owned, would have low accessibility scores (less than 50% compliance). This hypothesis was not supported since all facilities had greater than 50% compliance. The findings suggest that the barriers to patrons with mobility limitations (built or physical characteristics, discrimination, and social discouragement) may have seen some improvement in the last few years since similar studies were published 10 to 15 years ago. However, a facility that achieves greater than 50% compliance doesn't necessarily mean it is fully compliant since many aspects of the facility (i.e., exercise equipment) may still be inaccessible.

Alternatively, it may be that these facilities have maintained more accessible conditions for some time, unrelated to literature prompting such action. This, specifically, is possible considering the limitations experienced during the development of the current study for collecting participant locations. It could be that those facilities that would have scored more closely in line with the first hypothesis declined to participate because they were aware of negative results the study could potentially generate. If this is the case, then the results of this study may not be representative of the larger Chicago metropolitan area.

Despite these limitations, the current study did not support the first hypothesis. This has positive implications for today's patrons with mobility limitations and holds promise that perhaps facilities will reach higher accessibility standards in the future. Ideally, a facility should be closer to being 100% compliant. Specifically, areas deficient in accessibility according to the findings of this study included exercise equipment, space around exercise equipment, and locker room access. With more education for fitness professionals and managers on accessibility, it is possible that facility managers will grow to understand the importance of providing people with disabilities access to these facilities and venues.

The second research hypothesis predicted that commercial fitness facilities would have higher accessibility scores on the AIMFREE measure than privately owned, independent fitness facilities. This hypothesis was supported as both YMCA and franchise facilities had higher accessibility scores compared to independent facilities. Federal regulations require public facilities with more than a certain number of employees to be ADA-compliant. Given the size of the franchise facilities surveyed in

this study, it is likely that many, if not all, were receiving some federal funding and/or had more than 50 employees and had to be in compliance with the federal law to maintain and obtain more funding. Privately-owned, independent facilities usually do not meet the same requirements for federal funding and therefore may not be as aware of the ADA guidelines and the need to make their facilities more accessible or may not be required to do so if they are a certain size. Although many of the participant sites did not provide full data with answers for every item in the AIMFREE instrument, the information that was collected illustrates key elements regarding the accessibility of these locations.

This study has several limitations. First, more than 50% of the facilities contacted refused to participate in the study. Those facilities that did participate may have only done so because they felt they had an adequate level of accessibility. This may have skewed the findings towards facilities with higher rates of accessibility.

Second, the sample size (n=15) was very small and may not be representative of other similar types of facilities. Several facilities were reluctant to have one of their employees complete the AIMFREE survey. While some locations were uncomfortable with any level of participation, a few facilities agreed to participate but did not want to have a member of their staff interviewed (a subcomponent of the survey). Also, the restricted times that were made available to survey the facility were not conducive to the study examiner's availability. Some facilities restricted data collection times to those hours that were not peak-use periods for their members. In several situations, the study examiner was not able to accommodate these requests and these facilities were

therefore not surveyed. The small sample size in this study, and voluntary nature of the facilities agreeing to participate, limits the generalizability of these findings.

And third, even though a facility may be more than 50% compliant, it doesn't necessarily mean that the facility has good accessibility. One or two items on the AIMFREE could impose significant barriers to participation, as facilities could feel threatened by the level of specificity required by the measure. Therefore, in the future, it is important to set higher rates of accessibility for all facilities, closer to 80% or 90% compliance on all AIMFREE items.

To reduce the limitations in sample size, future research should include several steps to allow for larger sample sizes and more refined data collection procedures. Specifically, a more exhaustive target area would assist with the collection of a greater sample size and a wider range of facility types. Additional information concerning the nature of the study, how the data will be used, and how each facility's anonymity will be maintained may increase participation levels. More trust and understanding concerning the importance of the study may lead to a greater number of facilities volunteering to participate in this type of research. It is also recommended that future studies employ a larger number of examiners. This effort would increase the response rate in terms of not having to eliminate facilities that wanted to be surveyed at times that were unavailable to one examiner.

The results of this study found that franchise facilities were more accessible than privately-owned independent facilities. While franchise facilities seem to have greater awareness of how to make a facility accessible, greater efforts must be made to achieve accessibility ratings that are closer to 100% compliance. Therefore, all facilities have

room for improvement and should aim to be more accessible to diverse populations, including people with mobility limitations. Despite the growing body of literature on the importance of physical activity for people with disabilities, limited accessibility to fitness and recreation facilities will continue to make it more difficult for people with disabilities to use these facilities compared to their non-disabled counterparts until there is a more unified effort at promoting accessibility standards for these facilities. In the future, it may be helpful for fitness managers to be provided with literature or consultation on how to make their facility more accessible to people with disabilities.

## APPENDICIES

## **APPENDIX A**

### **Consent Form**

#### **University of Illinois at Chicago Consent for Participation in Research Accessibility of Fitness and Recreation Facilities for Persons with Disabilities in a Metropolitan City**

##### **Consent Form to Evaluate a Fitness or Recreation Facility**

My name is Anat Laiser and I am a graduate student at the University of Illinois at Chicago. I am doing a masters thesis about the accessibility of fitness and recreation facilities for people with mobility limitations. I would like to assess your facility. You have been asked to participate in a research interview because you have been identified as a fitness or recreation facility staff member within a large metropolitan area. We ask that you read this form and ask any questions you may have before agreeing to be in the research.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Illinois at Chicago.

##### **Why is this research being done?**

This research is being conducted because many fitness and recreation facilities are often not accessible to people with mobility limitations. This study will identify the areas of strength and the areas of weakness related to the accessibility of fitness or recreation facilities.

##### **What is the purpose of this research?**

This study will provide important information on the accessibility of public and private fitness facilities related to people with mobility limitations. Owners and operators of fitness facilities will have a better understanding and interpretation of accessibility with respect to this underserved population.

##### **What procedures are involved?**

If you agree to the research, I would ask that you allow me (Anat Laiser) to assess your facility's accessibility for people with mobility limitations using an accessibility instrument that was developed at the University of Illinois at Chicago called AIMFREE. There is one section on the survey where you will also be asked to provide information about your staff, their training and how they interact with people with disabilities.

## **APPENDIX A (continued)**

### **What about privacy and confidentiality?**

The only people who will know that you are a research subject are myself (Anat Laiser) and my graduate advisor, Dr. James Rimmer. No information about you, or provided by you during the research, will be disclosed to others.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law.

### **Who should I contact if I have questions?**

The researcher conducting this study is Anat Laiser. You may ask any questions you have now. If you have questions later, you may contact me at (847) 769-5019 or my advisor, Dr. James Rimmer at (312) 413-9651.

### **What are my rights as a research subject?**

If you feel you have not been treated according to the descriptions in this form, or you have any questions about your rights as a research subject, you may call the Office for the Protection of Research Subjects (OPRS) as 312-996-1711 (local) or 1-866-789-6215 (toll-free) or e-mail OPRS at [uicirb@uic.edu](mailto:uicirb@uic.edu).

I have read (or someone has read to me) the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I agree to participate in this research. I have been given a copy of this form.

### **Signature of Fitness Facility Manager**

Signature

Date

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Printed Name

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**APPENDIX A** (continued)

Signature of Masters Student (Anat Laiser)

Date

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Printed Name

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## APPENDIX B

### UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)  
Office of the Vice Chancellor for Research (MC 672)  
203 Administrative Office Building  
1737 West Polk Street  
Chicago, Illinois 60612-7227

#### Exemption Granted

February 21, 2012

Anat Laiser, BA  
Disability and Human Development  
607 Wrightwood  
#309  
Chicago, IL 60614  
Phone: (847) 769-5019

**RE: Research Protocol # 2012-0141**  
**“Accessibility of Fitness and Recreation Facilities for Persons with Disabilities in a Metropolitan City (previously exempt research protocol #2008-1092)”**

**Sponsors: None**

Dear Anat Laiser:

Your Claim of Exemption was reviewed on February 21, 2012 and it was determined that your research protocol meets the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)]. You may now begin your research.

**Exemption Period: February 21, 2012 – February 20, 2015**  
**Performance Site(s):** UIC  
**Subject Population:** Adult (18+ years) subjects only  
**Number of Subjects:** 50

**The specific exemption category under 45 CFR 46.101(b) is:**

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

**APPENDIX B (continued)**

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

1. Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.
2. Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.
3. Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).
4. Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:
  - a. The researchers affiliation; UIC, JBVMAC or other institutions,
  - b. The purpose of the research,
  - c. The extent of the subject's involvement and an explanation of the procedures to be followed,
  - d. Whether the information being collected will be used for any purposes other than the proposed research,
  - e. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
  - f. Description of any reasonable foreseeable risks,
  - g. Description of anticipated benefit,
  - h. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
  - i. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).

**APPENDIX B** (continued)

- j. A statement that the UIC IRB/OPRS or JBVMAC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→Use your research protocol number (listed above) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, B.S., C.I.P.  
Assistant Director, IRB # 2  
Office for the Protection of Research Subjects

cc: Tamar Heller, Disability and Human Development, M/C 626  
Glenn T. Fujiura, Disability and Human Development, M/C 626

## APPENDIX C

### AIMFREE Sample Section

#### **Section K: Programs (Group Activities)**

##### **Direct interviewing of staff is suggested for Section K**

	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. When a person enrolls in a program, is the person asked if he or she requires any accommodations?	1	2	3
2. Are registrants with disabilities contacted prior to the start of the program to discuss any accommodations or adaptations that are necessary for their participation?	1	2	3
3. Are programs that allow persons with disabilities to participate provided in your facility?	1	2	3
4. If your facility offers programs specifically for persons with disabilities, are they similar in content to programs offered to persons who do not have disabilities?	1	2	3
5. Do exercise classes and programs (e.g., aerobic classes) include activities that can be performed from a seated position?	1	2	3
6. Are chairs available in exercise classes?	1	2	3
7. Are rails available to hold onto during standing exercises?	1	2	3
8. Can individuals with disabilities participate in fitness/recreation programs at their own pace?	1	2	3
9. Does your facility provide enough time for persons with disabilities to prepare (i.e., use locker room, shower) prior to the start of a program?	1	2	3

## APPENDIX C (continued)

**Section K: Programs (Group Activities)**

	Yes	No	N/A
10. After a fitness or recreation program has been completed, are participants with disabilities asked to evaluate the program with respect to its accessibility?	1	2	3

11. Using the scale below, how do you feel about the overall accessibility of the facility's policies? Check the appropriate number:

Not at all accessible ←————→ Completely accessible						
1	2	3	4	5	6	7

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# ANAT M. LAISER

## EDUCATION

**UNIVERSITY OF ILLINOIS AT CHICAGO**; Chicago, IL Present

- Currently pursuing a Master of Science in Rehabilitation Technology
- Expected graduation: August 2012

**NORTHEASTERN ILLINOIS UNIVERSITY**; Chicago, IL 1998- 2001

- B.A. Special Education
- Speech Communication and Performing Arts minor

## QUALIFICATIONS

- State of Illinois Teacher Certification Type 3 and Type 9 with Special Education Endorsement
- LBSI Learning Disabilities and Social Emotional Disorders

## RELATED EXPERIENCE

**ALCOTT HIGH SCHOOL**; Chicago, IL- Special Education Teacher 2011-present

- Lead teacher in Cluster Program

**DARWIN ELEMENTARY**; Chicago, IL- Special Education Teacher 2003-2011

- Develop and implement curriculum for a diverse population
- Conduct intensive, multi-level reading and math instruction, including Wilson Program
- Actively utilizes data to identify deficiencies when planning lessons
- PBIS team representative
- Incorporates technology (Promethium Board) into daily lessons
- Taught after school 7<sup>th</sup> grade ISAT prep and homework classes
- Organized and planned fundraising events

**REHAB INSTITUTE OF CHICAGO (RIC)**; Chicago, IL Intern/Volunteer 2003-2004

- Create personalized communication pages
- Observe AAC and EADL evaluations

**ANIXTER CENTER SCHOOL**; Chicago, IL- Special Education Teacher 2002-2003

- Lead teacher in Autism E/BD classroom full time
- Develop educational and vocational programming
- Assist at community based job sites