

**The Competencies of Fitness Professionals:
View From the Disability Community**

BY

Stephanie A. Steiner
B.S., Indiana University, 2011

THESIS

Submitted as partial fulfillment of the requirements
for the degree of Master of Science in Disability and Human Development
in the Graduate College of the
University of Illinois at Chicago, 2014

Chicago, Illinois

Defense Committee:

Glenn T. Fujiura, Chair and Advisor
Kuei-Fang Hsieh
Karrie Hamstra-Wright, Kinesiology and Nutrition

ACKNOWLEDGEMENTS

I would first like to acknowledge my mother, Colleen Steiner, without whom I would not have gone through this Master's program or developed a passion for integrating my profession (fitness professional) with serving people with disabilities. Secondly, I am thankful for AJ Rosenberg for his love and encouragement in pushing me to create the best work possible during the long process of this thesis, all while tolerating and keeping me sane through the journey.

Dr. Glenn Fujiura, the chair of my defense committee and my advisor, deserves all my gratitude for mentoring me through this thesis and helping me create what I wanted to achieve. I would also like to thank the other members of my committee, Dr. Kelly Hsieh and Dr. Karrie Hamstra-Wright, for their ideas and contributions to this thesis allowing it to reach its full potential. Also, Maitha Abogado has ceaselessly helped me with formatting, which proved to be significantly more difficult than ever expected, and I thank her for her time and assistance.

Lastly, thank you to all the participants (fitness professionals and people with disabilities) who participated in this thesis. I would not have been able to complete this without your participation and I am so grateful for your support.

TABLE OF CONTENTS

<u>CHAPTER</u>	<u>PAGE</u>
I. INTRODUCTION	1
A. Background.....	2
B. Statement of the Problem and Study Purpose.....	2
C. Study Implications.....	3
II. RELATED LITERATURE	
A. Recommended Physical Activity Guidelines	5
B. Disability and Physical Activity	6
1. Activity status of persons with disability	6
2. Barriers to physical activity.....	8
C. The Role of the Fitness Professional	9
1. Fitness Professionals and Disability.....	9
2. Disability Certification	10
D. Study Problem: The Importance of Consumer Perspective	12
III. METHODS.....	13
A. Overview.....	13
B. Sample.....	13
C. Design.....	14
D. Procedure	16
E. Final Surveys	16
F. Analysis	17
IV. RESULTS.....	19
V. DISCUSSION	30
A. Limitations.....	32
B. Implications and Next Steps	33
APPENDICES	35
Appendix A	36
Appendix B	40
Appendix C	44
Appendix D	48
Appendix E	50
Appendix F.....	53
CITED LITERATURE	57
VITA	60

LIST OF TABLES

<u>TABLE</u>	<u>PAGE</u>
I. ACSM/NCHPAD CERTIFIED INCLUSIVE FITNESS TRAINER COMPETENY AREAS	15
II. SAMPLE CHARACTERISTICS: PEOPLE WITH DISABILITIES	19
III. SAMPLE CHARACTERISTICS: FITNESS PROFESSIONALS	20
IV. EDUCATION, CERTIFICATION, AND PERSONAL TRAINING AFFECTS	23
V. PROPORTIONS OF “EXTREMELY IMPORTANT” RESPONSES	25
VI. RESPONSES OF TRAINERS TO “WHAT ACTIONS DO YOU BELIEVE PEOPLE WITH DISABILITIES FIND OFF-PUTTING IN FITNESS PROFESSIONALS?”	26
VII. RESPONSES OF PEOPLE WITH DISABILITIES TO “WHAT ACTIONS DO YOU BELIEVE PEOPLE WITH DISABILITIES FIND OFF-PUTTING IN FITNESS PROFESSIONALS?”	27
VIII. MAJOR THEMES IN RESPONSE TO, “WHAT ACTIONS DO YOU BELIEVE ARE OFF-PUTTING IN FITNESS PROFESSIONALS?”	28
IX. MAJOR THEMES IN RESPONSE TO, “WHAT DRAWS YOU TO PERSONAL TRAINING?”	29

LIST OF FIGURES

<u>FIGURE</u>		<u>PAGE</u>
1.	“Do you bet you’d be healthier/feel better if you participated in activity with a personal trainer?”	21
2.	“Do you think if you had a knowledgeable, competent personal trainer at your disposal you would be more likely to/feel more comfortable exercising?”	22
3.	“Do you prefer trainers who can travel to your home?”	24

SUMMARY

Research has found that one of the many barriers to physical activity for people with disabilities is the knowledge of fitness professionals. It has been acknowledged that people with disabilities often feel that fitness professionals are not capable of assisting them for a variety of reasons. Through a mixed methods approach incorporating both quantitative and qualitative elements, this pilot study attempts to further understand what competencies in fitness professionals are most important to people with disabilities. Furthermore, it surveys across type of disability. Responses from people with disabilities are compared to what fitness professionals believe is important to people with disabilities to see if there is a dissimilar conclusion. Though statistically significant results were largely absent from the data, a larger sample size may prove to show statistically significant differences. More research should be done in this field to further validate findings.

I. INTRODUCTION

A. **Background**

Our nation is fairly sedentary with most people choosing not to partake in physical activity despite the many health benefits it offers. Healthy People 2010 reports that just 16% of adults in 1997 age 18 or older participated in moderate physical activity, at least 5 days per week, for at least 30 minutes per day, while only 12% of people with disabilities were as physically active (Van der Ploeg, Van der Beek, Van der Woude, & Van Mechelen, 2004). The reason for this low percentage of participation among those with a disability is due to barriers that hinder individuals from participating. In order to increase this percentage of people participating in physical activity, these barriers must be analyzed and eliminated through health promotion initiatives.

A major health priority for people with and without disabilities is to promote optimal health across the lifespan (Rimmer, Chen, & Hsieh, 2011). Though there are many barriers that people with disabilities identify as hindering their participation in physical activity, one understudied barrier is the lack of knowledge and education among fitness professionals (Rimmer, Wang, & Smith, 2008). Because research on physical activity and disability is fairly new and a health promotion emphasis in physical activity for people with disabilities has only recently begun to surface, the standards that are set for fitness professionals need to be evaluated in terms of their relevance for the disability population. Furthermore, the perspectives of people with disabilities must be incorporated into the evaluation of these standards to ensure their relevance to the target population.

Utilizing the perspective of this population may help facilitate activity by bridging the gap between people with disabilities and fitness professionals through a better understanding of how to best serve this population.

B. **Statement of Problem and Study Purpose**

Research has found that a critical barrier for people with disabilities attempting to become physically active is the lacking knowledge of fitness professionals. These professionals often have difficulties when working with this population. The present study is an exploratory survey identifying those characteristics of competency that people with disabilities value most in fitness professionals. The survey developed based on expert opinion and the input of people with disabilities.

Sedentary lifestyles are often associated with a higher risk of numerous chronic diseases, such as coronary artery disease, diabetes mellitus, and colon cancer, while physically active lifestyles yield a lower risk for morbidity and disease (Van der Ploeg, Van der Beek, Van der Woude, & Van Mechelen, 2004). Data from a 2005 Center for Disease Control and Prevention review article reveals that approximately twice as many adults with a disability are physically inactive (25.6%) compared to adults without a disability (12.8%) (CDC, 2007). Furthermore, youth with disabilities are significantly less physically active and more obese than their non-disabled peers. Several experts anticipate more health complications in adulthood for this population (Rimmer & Rowland, 2008).

These statistics suggest how prominent barriers to physical activity for this population are and the importance of removing them. A study conducted in Sweden surveyed people with physical disabilities to identify factors that were found important to

exercise participation. Eighty-one percent of the sample-rated, “instructors with knowledge about adapted exercise” as important (Junker & Carlberg, 2011, p. 22). The survey indicates the potential importance of fitness professionals being competent in their field and understanding how to effectively and safely work with people with disabilities in order to facilitate physical activity.

The purpose of this study is to identify and analyze those competencies in fitness professionals people with disabilities find most important. In addition, the study compares the perspectives on competencies of fitness professionals to people with disabilities. Thirdly, the responses of people with disabilities are compared to standards that are currently in place for specialized disability fitness professionals in order to evaluate whether the standards are appropriately set, or need modification. The ultimate goal of this line of research is to eliminate barriers to exercise associated with lack of knowledge among fitness professionals.

C. **Study Implications**

Research on physical activity and disability is beginning to expand after years of disinterest. Understanding this population’s needs for physical activity is emerging as a national health concern. The body of research on disability and physical activity is growing and researchers have begun to identify important themes in regards to this population and exercise. One of the more consistent findings is the need to diminish the knowledge gap in disability and exercise among fitness professionals, while raising greater awareness about disability in the industry (Rimmer, 2012). For example, in the 2007 report, *The Future of Disability in America*, the Institute for Medicine highlighted the need for health care and rehabilitation professionals to understand the onset,

progression, and severity of secondary conditions with the goal of prescribing more clearly defined and articulated interventions and management protocols to reduce or prevent their occurrence (Field & Jette, 2007). Several previous studies have indicated the need to “bridge the gap”. Block (2009) stated “Our challenge for the future is to bridge the gaps between the evidence and daily practice; filling holes of knowledge and methodically implementing new knowledge gained” (p. 24).

In an effort to help “bridge the gap”, more research must be conducted to understand specifically what fitness professionals need to improve upon to better facilitate the participation in physical activity by people with disabilities. Ginis and Hicks (2007) noted, “As an additional step towards maximizing relevance and applicability, we recommend consumer involvement in the development of guides and guidelines” (p. S143). The perspective of the person with a disability is an important component and should be part of the development of better accommodations for people with disabilities and pertaining to physical activity.

Because of the need to “bridge the gap” of knowledge in fitness professionals who work with people with disabilities with the consumer perspective accommodations, this study attempts to better understand what competencies in fitness professionals people with disabilities value most.

II. RELATED LITERATURE

In the following sections, literature related to the importance of physical activity, the relationship of disability to activity, and the role of the fitness professional is reviewed. Additionally, the barriers of physical activity to people with disabilities and the importance of consumer perspective are covered as well.

A. **Recommended Physical Activity Guidelines**

The American College of Sports Medicine recommends that adults perform moderate-intensity physical activity (40%-<60% VO_2R) at least 5 days per week, for at least 30 minutes per day, or at least 3 days per week of vigorous intensity ($\geq 60\%$ VO_2R) aerobic exercise done for at least 20-25 minutes (Thompson, Gordon, & Pescatello, 2010). The 2008 Physical Activity Guidelines for Americans recommend that adults with chronic medical conditions and disabilities should attempt to meet the same physical activity guidelines as those for healthy adults, if they are able (Physical Activity Guidelines Advisory Committee, 2008). A lack of physical activity, or sedentary lifestyle, is a serious public health concern for all people, but people with disabilities are at much greater risk of the serious health problems associated with physical inactivity (Rimmer & Marques, 2012). The prevailing pattern of little physical activity and poor adherence to rehabilitation in people with disabilities raises concern that various health conditions such as obesity and heart disease will become major problems later in adulthood (Rimmer, 2006). The steep decline in health stemming from disability and limited physical activity and high amounts of sedentary behavior are coupled with fewer opportunities for household or work-related activity, leisure activity, fitness and sports, and general movement across the day. This pattern has been referred to as disability

associated low energy expenditure deconditioning syndrome (DALEEDS) (Rimmer, 2012).

B. **Disability and Physical Activity**

Unfortunately, people with disabilities face many challenges when attempting to engage in physical activity. These challenges make it difficult for them to adapt physical activity into their lifestyle. Research on disability and physical activity has increased in recent years; however, there is still much that is unknown. The number of people with disabilities participating in physical activity needs to increase in order to decrease health risks and secondary conditions. As Rimmer (2006) explained, “The consistently low pattern of physical activity and poor compliance to rehabilitations reported among people with disabilities raises growing concern that various health conditions such as obesity and heart disease will become major problems in later adulthood and will increase the risk of premature loss of physical independence and limit participation in community activities.” (p. 1087) Health conditions, as well as environmental and personal barriers may reduce a person’s ability to engage in physical activity, so these barriers must readily be addressed and removed to further facilitate exercise in this population (Rimmer, 2006). One critical step in doing this is equipping fitness professionals with the tools, knowledge, and demeanor they must embrace to best serve this population, while facilitating physical activity to improve people with disabilities’ health and well-being.

1. **Activity status of persons with disability**

According to health statistics, the United States population can be characterized as having a sedentary lifestyle. People with disabilities are, on average,

even less active than the general population. While 49.4% of adults without disabilities in the United States meet the national physical activity guidelines, a considerably smaller percentage of adults with disabilities (37.7%) meet these same recommendations; furthermore, 12.8% of adults without a disability are reported to be physically inactive, compared with 25.6% of adults with disabilities (Rimmer, Wolfe, Sinclair, & Armour 2005). Rimmer and colleagues (2008) emphasize the implications of this disparity: "Inadequate amounts of exercise can accelerate a person's functional decline and limit his or her ability to work, recreate, and engage in community events" (p. 315). Lack of activity poses a major problem to people with disabilities who wish to have a high quality of life. Furthermore, the recommended amount of physical activity for youths is 60 minutes a day, most days of the week, yet youths with disabilities commonly fail to reach this recommendation and are significantly less physically active and more obese than non-disabled peers. Several experts anticipate this behavior will initiate more health complications in adulthood (Rimmer & Rowland, 2008).

People with physical disabilities often experience secondary diseases such as coronary heart disease, diabetes, and obesity (Junker & Carlberg, 2011). Recent research has revealed the negative health effects associated with extended sitting including cardiometabolic and inflammatory risk biomarkers such as increased waist circumference, body mass index, glucose, and triglycerides (Healy et al., 2008). Being physically active yields several health benefits that an individual with a disability can especially benefit from including reducing the risk for secondary health conditions and positively influencing all levels of functioning (Van der Ploeg et al., 2004). Regular physical activity decreases the risk of cardiovascular disease mortality and coronary

artery disease, as well as prevents, or delays, the development of high blood pressure and helps maintain normal muscle strength, joint structure, and joint function (Durstine et al., 2000).

2. **Barriers to physical activity**

Engaging in a new health behavior, such as physical activity, is impeded by barriers encountered by individuals attempting to participate in the activity (Rimmer, Hsieh, Graham, Gerber, & Gray-Stanley, 2010). This may be one of the main reasons increasing participation in physical activity among people with disabilities is a major challenge for health care professionals (Rimmer et al., 2010). Rimmer et al. (2010) reports that barriers for adults with physical disabilities have a significant influence on physical activity participation and addressing them is a necessary step in increasing their physical activity participation. Using the Barriers To Physical Activity and Disability Survey (B-PADS), Rimmer, Wang, and Smith (2008) found that African-American females who experience stroke listed “cost of the program”, “lack of transportation”, “not aware of fitness center in the area”, and “don’t feel the trainer in facility is able to help” as major environmental barriers to physical activity (p. 318). In a study of factors facilitating physical activity participation in people with physical disabilities, Junker and Carlberg found that among people in the study who were not currently physical active, 51% of people wanted to try exercise and 81% expressed they need support in doing so. Thus it appears that an important barrier for this population can be addressed and confronted by creating more facilitators to aid people with disabilities in participating in physical activity. The fact that lack of knowledge in fitness professionals working with people with disabilities is a barrier, and that those having appropriate knowledge can be

a major facilitator, indicates the importance of focusing on the ability of these professional working with people with disabilities.

C. **The Role of the Fitness Professional**

The personal training industry has grown extensively over the past several decades across the nation (Santana, Dawes, Antonio, & Kalman, 2007). Fitness professionals are encouragers of well-being, especially physical well-being, and promote healthy behaviors, while servicing clients with safe and effective programs to improve quality of life. In the past, because of low or no standards for certification, many instructors had highly variable competency in the profession and many consumers were at risk for injury (Parks, 1990). In response, many universities, colleges and other institutions were granted accreditation for meeting an acceptable level of educational quality in health/wellness curriculums. Certification standards were set for individuals assuming the role of a fitness professional to ensure competence in the profession (Summerfield, 1991).

1. **Fitness professionals and disability**

Research has identified one of the main barriers people with disabilities face when attempting to be physically active is the lack of knowledge in fitness professionals about how to appropriately work with people with disabilities. Consumers and fitness professionals themselves have identified a lack of knowledge regarding physical activity programs and opportunities available to people with disabilities in their communities as a major issue. While some fitness facilities are ill-equipped and provide little, or no access to people with disabilities, accessible facilities do exist (Ginis & Hicks, 2007). Furthermore, the perception of fitness facilities as unfriendly environments,

including negative attitudes toward people with disabilities from users and staff, must be addressed and shifted to one of welcoming facilities to anyone attempting to become physically active or maintaining their current levels (Rimmer, 2004). Rimmer, Chen, McCubbin, Drum, and Peterson (2010) used the B-PADS (Barriers to Physical Activity and Disability Survey) questionnaire to analyze what types of barriers individuals with disability encounter related to exercise participation. His results showed that 36% of respondents felt the trainer in the facility would not be able to help and a different study he investigated revealed “not knowing how to exercise” as a main barrier (Rimmer et al., 2008). These issues could be readily addressed with the assistance of competent fitness professionals available to assist individuals by meeting their needs.

Most rehabilitation centers provide little, or minimal, after-care to ensure the maintenance of former patients being physically active after the rehabilitation period (Van der Ploeg et al., 2004). This could be partly addressed with the assistance of a knowledgeable fitness professional. Developing exercise prescriptions for individuals with chronic health conditions or disabilities requires more advanced knowledge, education and training than most personal trainers possess; however, the majority of personal trainers can pursue additional training, education, experience and an advanced clinical certification (Roberts, 2010).

2. **Disability certification**

A few specialized certifications have been developed attempting to address the lack of knowledge of fitness professionals by certifying individuals who demonstrate education and competency in working with people with disabilities. A certification provided by the American College of Sports Medicine is the Certified

Inclusive Fitness Trainer (CIFT), is an entry-level certification that includes sensitivity training, information on promoting disability-friendly exercise settings, and general exercise safety guidelines (Rimmer, 2012). CIFT certification has only recently become available and most fitness professionals and people with disabilities are likely unfamiliar with it. Before widespread adoption, its components should be validated by people with disabilities in order to validate the competencies covered within the certification.

Currently, the ACSM-CIFT (American College of Sports Medicine Certified Inclusive Fitness Trainer) exam may be considered the most credible certification available for those specializing in working with the disability population. The ACSM-CIFT certification standards list the following as disability related competencies: knowledge of impairment or disability the individual possesses, utilization of safe, effective, and adapted methods of exercise training, provision of services with an understanding of current ADA policy specific to recreation facilities (U.S. Access Board Guidelines), and use of appropriate language and communication with the individual (ACSM Certification, 2008). Because research on physical activity and disability is fairly new and a health promotion emphasis in physical activity for people with disabilities has just recently began to merge, the standards these exams have set should be evaluated to ensure the demonstrated competencies are in fact important in working with this population and adequately address the need to reduce perceived barriers. In order to do this, the perspectives of people with disabilities must be incorporated and used to evaluate these standards to ensure validity among those who the certification is intended to serve. Evaluation of preferred trainer competencies by people with

disabilities will greatly benefit the field to understand what may be missing, what should be added, or affirm that the current standards are relevant to this population.

D. **Study Problem: The Importance of Consumer Perspective**

When evaluating health promotion programs for people with disabilities, the input of the people with disabilities is crucial for better understanding of what are valued, unimportant, or disliked features (Drum, Krahn, & Bersani, 2009). Furthermore, evaluations should be collected across types of impairments (paraplegics, quadriplegics, multiple sclerosis, cerebral palsy, etc.) in order for researchers to identify any variations in preference of features among disability groups. People with disabilities working with trainers with high-competency may benefit greatly from assistance with a fitness professional because the client is more likely to have a safe and beneficial experience. For people with a disability the influence of health professionals may be more important than in the general population (Van der Ploeg et al., 2004). Qualified trainers can transform an intimidating activity into a welcoming training experience the individual looks forward to each week. If trainers are able to incorporate competencies that people with disabilities deem important, they will be better equipped to increase this population's physical activity levels and thus, quality of life.

III. METHODS

A. Overview

The study involved two phases: the development of a survey using an expert Delphi procedure and the pilot testing of the survey to a cross section of disability and fitness related professionals. The Delphi survey is a preliminary survey given to a small sample of participants to elicit feedback and suggestions for edits on the pilot survey. Both qualitative and quantitative methods were employed. The survey was constructed using the standards for the ACSM-CIFT certification and other relevant literature identifying barriers and facilitators to physical activity. Two surveys, one for persons with a disability and one for fitness professionals, were developed. Analysis focused on the comparison of people with disabilities to fitness professionals on common items, and comparison of responses across type of disability.

B. Sample

A total of twenty-five participants were recruited for the study consisting of 14 people with disabilities and 11 fitness professionals. Gender of the participants was not reported. None of the recruited participants declined. Five participants comprised the expert Delphi group survey (4 people with disabilities, 1 fitness professional), while 20 participants (10 trainers, 10 people with disabilities) composed the pilot survey sample. The inclusion criteria for people with disabilities consisted of: (1) age 18 years or older and (2) self-reporting a physical disability. The inclusion criteria for fitness professionals consisted of: (1) age 18 years or older and (2) self-reported being a personal trainer with a fitness certification. Exclusion criteria for both groups included participants who were not able to access the internet to give consent, or respond to

questionnaire because of cognitive disabilities. Recruitment was conducted via email to the investigator's academic department listservs, a physiology research lab, and certified fitness professionals. Assent was obtained by the participant replying to the recruitment email, which indicated their consent to participate in the study.

C. **Design**

The study design was mixed methods approach incorporating both quantitative and qualitative elements. The intent of the survey was to understand what competencies in fitness professionals are most important to people with disabilities. Initially, a Delphi questionnaire consisting of 15 items covering health behaviors, experience, facilitators and barriers to working with trainers, and qualities in fitness professionals based on the ACSM-CIFT certification material were distributed to four people with disabilities and one trainer to receive feedback on the survey design and components. The original 15 items are shown in Appendix A. The process for developing the survey involved incorporating preliminary health promotion and disability research with current specialty fitness certification guidelines and included the following categories: physical activity behavior and experience, barriers and facilitators, personal trainers' characteristics, "what if" questions, and feedback.

After the Delphi survey was completed, a new finalized survey was constructed based on feedback from the Delphi group participants. Feedback from the Delphi participants required only minor changes to the final surveys, which contained very similar questions to the Delphi questionnaire concerning demographics, people with disabilities' physical activity behavior and experience, barriers and facilitators, personal trainers' characteristics, and "what if you had a trainer" questions. The most major edit

of the final survey was that it was split into two separate surveys; therefore, the final survey consisted of two surveys for each group perspective: (1) for people with disabilities and (2) for fitness professionals. The final survey for people with disabilities is shown in Appendix B, while the final survey for fitness professionals is shown in Appendix C.

Table I shows guidelines and competency areas by percentage that are used on the ACSM/NCHPAD certification exam (ACSM, 2008). Some of these competency areas can be found on the pilot surveys that were distributed. These percentages can be analyzed to be deemed appropriate or suggest alteration based on findings from the pilot survey.

TABLE I

ACSM/NCHPAD CERTIFIED INCLUSIVE FITNESS TRAINER COMPETENCY AREAS

- Exercise Prescription and Programming (20%)
 - Exercise Physiology and Related Exercise Science (18%)
 - Health Appraisal, Fitness and Clinical Exercise Testing (15%)
 - Safety, Injury Prevention, and Emergency Procedures (11%)
 - Clinical and Medical Considerations (11%)
 - Human Behavior and Counseling (10%)
 - Disabilities Awareness (10%)
 - Americans with Disabilities Act (ADA) and Facility Design (5%)
-

* Percentages are approximate.

D. **Procedure**

Once consent was received, the Delphi group, consisting of 5 participants (4 people with disabilities and 1 fitness professional), was sent an email with a link to the questionnaire administered via Qualtrics. Qualtrics is software that enables users to do online data collection and analysis for research (<http://www.qualtrics.com/about/>).

A recruitment email (Appendix D) was sent out to potential participants to participate in the Delphi survey. By clicking the link to the survey in the recruitment email, five interested participants completed it indicating their wish and assent to participate in the study. This included one fitness professional and four people with disabilities. The Delphi survey was delivered on May 20, 2013 with all responses received by May 27, 2013. The final revised surveys were sent out to the pilot survey respondents (10 people with disabilities and 10 fitness professionals) at the beginning of August with all surveys completed by the end of August. All surveys were completed and submitted via Qualtrics. Once participants clicked on the link to the survey within the recruitment email (indicating their consent to participate), they were automatically taken to the survey uploaded on Qualtrics. Once submitted, their responses were automatically saved as data and displayed among other participants' responses. In contrast to the Delphi survey, it took approximately a month to retrieve all surveys from the recruited participants. Prompting participants to complete the survey was necessary.

E. **Final Surveys**

Based on the feedback from the Delphi participants, the survey was edited into two surveys – one for people with disabilities and one for fitness professionals – that encompassed the same questions, except each was worded appropriately for its

audience. The categories remained the same as the Delphi survey with the exception of adding a “demographic” section. The only difference between the two surveys is that the people with disabilities were asked to answer the questions as themselves (a person with a disability), while the fitness professionals were asked to answer the surveys as they believe a person with a disability would answer. This approach was implemented to see if there was a difference between what people with disabilities find important in fitness professionals and what fitness professionals think people with disabilities deem important in fitness professionals. The revised survey items are summarized in Appendix B and C with edits from the Delphi survey emphasized in italics.

F. **Analysis**

Qualtrics has a program that can convert the data over to an SPSS file for analysis. This was completed and the principal investigator audited and edited the data in SPSS to ensure responses were entered correctly. After the last survey was submitted and responses were entered into SPSS, analysis began. The responses of fitness professionals were compared to those made by people with disabilities were analyzed with chi-square testes using SPSS Version 19. Secondly, responses were compared across type of impairment. All impairments were considered, but due to sample size the different conditions were collapsed into neurological versus other. Participants diagnosed with multiple sclerosis and cerebral palsy were reclassified as “neurological” and “other” consisted of incomplete paraplegia, spinal muscular atrophy, and “hand/feet malformation”. Statistically significant differences and differences that approaches statistical significance are highlighted below. A qualitative analysis was

employed to inductively identify important categories in the narrative data, and patterns and relationships in the responses, through a process of discovery. Using progressive focus techniques, open-ended questions were themed according to response by finding common responses, or key words, and grouping similar responses together (Schutt, 2012). This was completed a few times to define solidified categories in seeking out what the respondents were describing. Themes were then compared between people with disabilities and fitness professionals.

IV. RESULTS

Table II and III display the sample characteristics of participants within people with disabilities and fitness professionals.

TABLE II
SAMPLE CHARACTERISTICS: PEOPLE WITH DISABILITIES

Participant	Type of Impairment	Duration in Years
1	Multiple Sclerosis	13
2	Multiple Sclerosis	32
3	Multiple Sclerosis	5
4	Incomplete Paraplegic	11
5	“Hand/Feet Malformation”	Since birth
6	Multiple Sclerosis	27
7	Spinal Muscular Atrophy	Since birth
8	Cerebral Palsy	Since birth
9	Spinal Muscular Atrophy	45
10	Did Not Respond	N/A

TABLE III
SAMPLE CHARACTERISTICS: FITNESS PROFESSIONALS

Participant	Type of Certification	Years Experience
1	ACE ¹ , AFAA ² , YogaFit	4
2	ACE	4
3	NSCA-CSCS ³	1
4	NSCA-CSCS	3
5	ACE	2
6	NSCA-CSCS, PTA Global, ACE	3
7	ACSM-HFS ⁴ , ACE, The Pilates Certified Mat Instructor	10
8	ACE, AFAA	4
9	ACSM-HFS, ACE Group Exercise	>2
10	ACSM-CES ⁵	3

¹ACE = American Council on Exercise

²AFAA = Aerobics and Fitness Association of America

³CSCS = National Strength and Conditioning Association Certified Strength and Conditioning Specialist

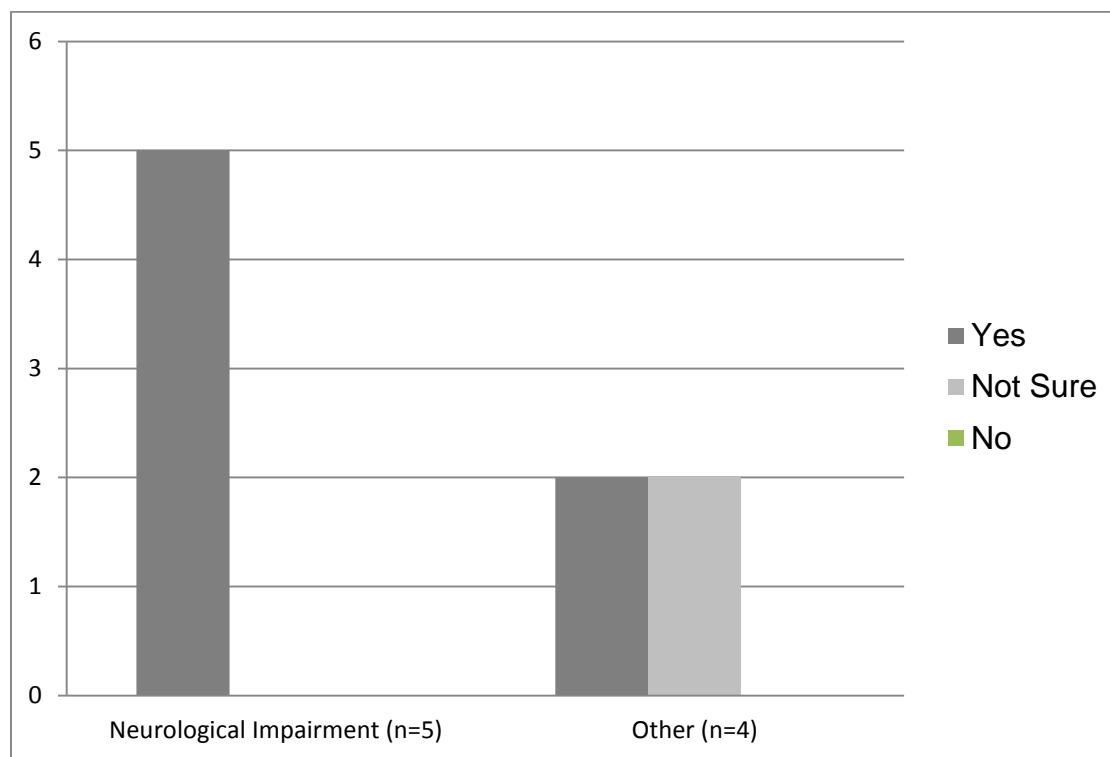
⁴ACSM-HFS = American College of Sports Medicine Health Fitness Specialist

⁵ACSM-CES= American College of Sports Medicine Clinical Exercise Specialist

Figure 1 represents responses between the two groups to the question, “Do you bet you’d be healthier/feel better if you participated in activity with a personal trainer?”

There were clear differences among those with a neurological impairment though the comparison across groups did not achieve statistical significance, most likely because of the small sample size ($\chi^2 = 3.214$, $df=1$, $p=.073$).

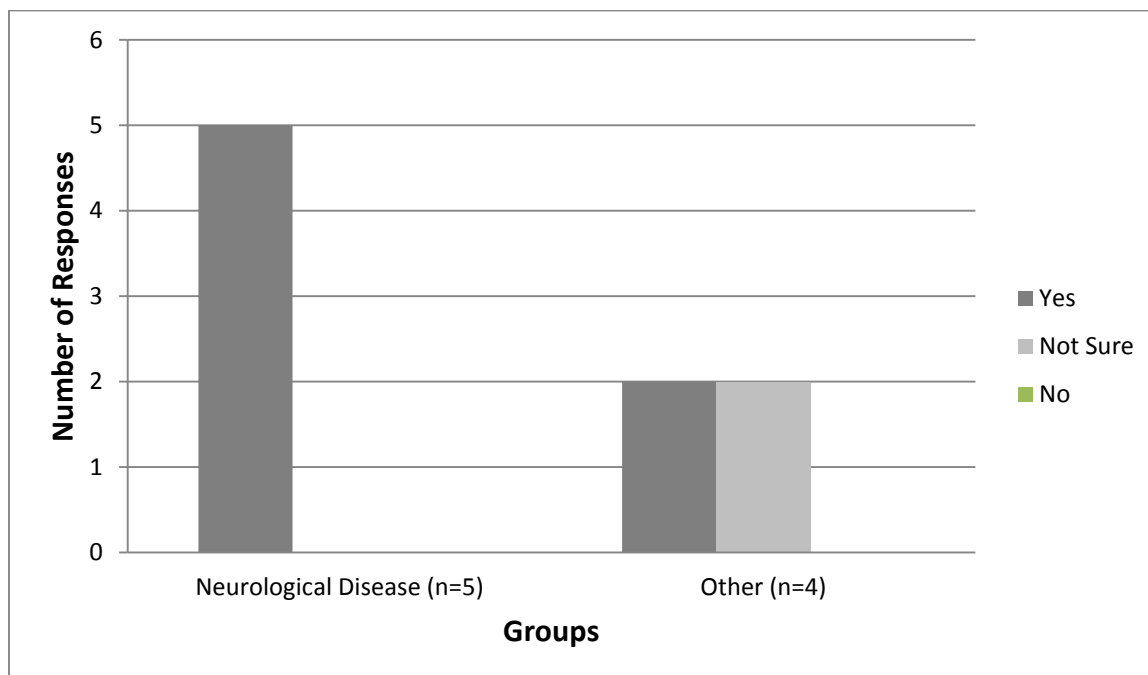
Figure 1. “Do you bet you’d be healthier/feel better if you participated in activity with a personal trainer?”



*One respondent did not indicate her disability; therefore, n=9.

Figure 2 shows respondents answer the question “Do you think if you had a knowledgeable, competent personal trainer at your disposal you would be more likely to/feel more comfortable exercising?” The pattern of responses was identical to the first question and again, this did not reach statistical significance as Figure 2 shows ($\chi^2=3.214$, $df=1$, $p=.073$).

Figure 2. “Do you think if you had a knowledgeable, competent personal trainer at your disposal you would be more likely to/feel more comfortable exercising?”



*One respondent did not indicate her disability; therefore, n=9.

Table IV summarizes the comparison of people with disabilities and personal trainers on the questions regarding certifications, education, and whether people with disabilities would feel more comfortable/feel better exercising with a personal trainer. No significant differences were found. Trainers unanimously answered “yes” to questions regarding preferences of education and certifications.

TABLE IV
EDUCATION, CERTIFICATION, AND PERSONAL TRAINING AFFECTS

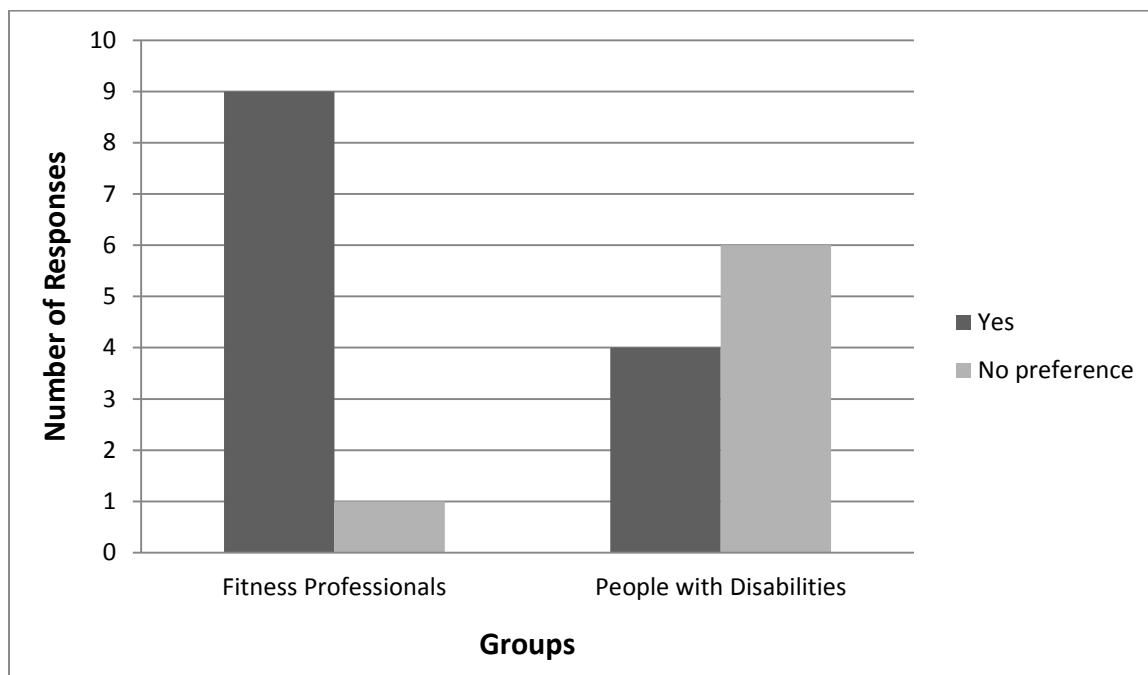
Question	*PWD (% Yes) (n=10)	Trainers (% Yes) (n=10)
Does education level of the personal trainer matter?	80%	100%
Are fitness certifications important?	80%	100%
Do you think if you had a knowledgeable, competent personal trainer at your disposal you would be more likely to/feel more comfortable exercising?	80%	90%
Do you bet you'd be healthier/feel better if you participated in activity with a personal trainer?	80%	89%

*people with disabilities

The following charts summarize items for which there were notable differences between people with disabilities and trainers, though only one of two achieved statistical significance at the 0.05 alpha level. Again, this is largely due to the lack of power due to small sample size.

As shown in Figure 4, people with disabilities were far less likely to prefer trainers to be able to travel to their home than fitness professionals thought they would. This is the only question that was statistically significant ($\chi^2=5.495$, $df=1$, $p=.019$).

Figure 3. “Do you prefer trainers who can travel to your home?”



With respect to scale questions of importance there were no significant difference between fitness professionals and people with disabilities. A major reason for this was the lack of variability in responses. Note for example that one out of the five questions was unanimously ($n=10$) answered “extremely important” by all people with disabilities.

TABLE V
PROPORTIONS OF “EXTREMELY IMPORTANT” RESPONSES

Question	People With Disabilities (n=10)	Fitness Professionals (n=10)
How important is cost to people with disabilities?	50%	30%
Is the trainers’ attitude toward disability important? For example, uses respectful, person-first language?	90%	90%
Is accessibility and awareness of the U.S. Access Board Guidelines for facility design important?	60%	50%
How important is it for them (trainers) to have knowledge about adaptive exercise techniques?	90%	70%
How important is it for them (trainers) to provide motivational techniques to begin or continue encouraging healthy lifestyles?	80%	80%
How important is it for them to encompass a demeanor you enjoy being around?	100%	90%

For the open ended items, the original responses are shown in Table V and VI.

TABLE VI
RESPONSES OF TRAINERS TO “WHAT ACTIONS DO YOU BELIEVE PEOPLE WITH DISABILITIES FIND OFF-PUTTING IN FITNESS PROFESSIONALS?”

Participant	Response
1	Lack of knowledge and understanding about the individual’s condition and limitations
2	Maybe that fitness professionals might not have experience/understand working with a population other than able bodies people or that they might discriminate
3	Anything that does not make them feel comfortable. I would also imagine if the fitness professional focused on the individuals disability that would be quite off-putting
4	Their lack of experience and certifications
5	They may find them intimidating or feel that they are not at the right level to be able to work with a fitness professional. They could see them training another member who is a lot more advanced and automatically feel that they would not fit in
6	The personal trainers who think everyone can do the same thing or are loud and yell at their clients as a form of motivation. They also may be a little intimidated by our profession.
7	Talking slowly and loud to them, lack of eye contact, lack of education/understanding of their disability
8	Fitness professionals who are not knowledgeable and unable to modify exercises or come up with creative options
9	Not being practical, intimidation, expecting too much, their perfect bodies
10	Not being specifically trained to that person’s disability. Also having incorrect assumptions about what the person can/cannot do because of the disability (mis-information). Not being encompassing towards those with disabilities or advertising specific traits the trainer might have that would allow them to gear their training sessions toward that disability.

TABLE VII
**RESPONSES OF PEOPLE WITH DISABILITIES TO “WHAT ACTIONS DO YOU
 BELIEVE PEOPLE WITH DISABILITIES FIND OFF-PUTTING IN FITNESS
 PROFESSIONALS?”**

Participant	Response
1	Uber Macho
2	Nothing comes to mind unless there was a personality clash. My respect and admiration for trainers/professionals I way up there!
3	Someone who comes off too – strong as though they know it al, and the trainee knows nothing...
4	I haven't experienced any offputting situations with fitness professionals, my only challenge come from the budget that I have to keep on a monthly basis which causes me to stay away from dealing with fitness professionals
5	When they talk to other persons or run off to do something else when I'm trying to do and understand an exercise or not explaining how to work the equipment fully.
6	When the fitness professionals feel uncomfortable with disability or bodies with unusual conditions and shapes, their comments can either be condescending or insincere (like appraisals that seem to be redundant or fake). When the fitness professionals make comments about what a “perfect” body looks like and what exercises that one must take to achieve such outcome, I would feel like to roll my eyes.
7	None
8	I don't know because I have limited experience with fitness professionals.
9	When they try to “fix” my disability
10	Demanding activity be traditional. Lack of adaptation & creative thinking

In subsequent reviews, these were reduced to nine major themes that emerged between the disabilities and trainers groups. When describing what actions are off-putting in fitness professionals, people with disabilities focused on how they were treated or the trainer's demeanor, while trainers focused more on lack of knowledge/experience/certifications. Regarding what actions draw people with disabilities to personal training, responses between the two groups were more similar focusing on maintaining health and adaptive exercise guidance. Table VII and VIII summarize these findings.

TABLE VIII
MAJOR THEMES IN RESPONSE TO, "WHAT ACTIONS DO YOU BELIEVE ARE
OFF-PUTTING IN FITNESS PROFESSIONALS?"

Theme #	Themes	N of Respondents
People with Disabilities		
1	Personality clash or condescending attitude	6
2	Nothing	1
3	I don't know because of limited experience	1
4	Too expensive	1
4	Knowledge of adaptive exercise	1
Fitness Professionals		
1	Lack of knowledge/experience/certifications	6
2	Intimidation of profession	3
3	Uncomfortable environment	1

TABLE IX
MAJOR THEMES IN RESPONSE TO, “WHAT DRAWS YOU TO PERSONAL TRAINING?”

Theme Number	Themes	N of Respondents
People with Disabilities		
1	Maintain abilities/gain strength	4
2	Adaptive training programs	3
3	Motivation to push oneself	2
4	Did not know it was available	1
Fitness Professionals		
1	Adaptive guidance	3
2	Being stronger/maintaining health	2
3	Comfortable environment/personality	2
4	Peer success as motivation	2
5	Support network	1

V. DISCUSSION

Though statistically significant differences were largely absent from the results, there were some notable differences between groups. These were found across different impairment types as well as between people with disabilities and fitness professionals. The absence of significant findings was likely more an artifact of small sample size than lack of true differences.

With regard to comparing important attributes, the groups were very similar. Somewhat surprisingly, the value of trainers traveling to the home of the person with a disability had the two groups responding in unanticipated directions. Most people with disabilities did not have a preference, while most trainers believed people with disabilities would prefer a trainer that may travel to their home. This is significant because it may suggest that people with disabilities value participation over convenience and are not opposed to traveling elsewhere to see a fitness professional. Though transportation has been identified as a barrier in the past, perhaps, people with disabilities are now better able to use transportation to seek physical activity (Rimmer et al., 2010).

In the opened-ended questions, differences were also evident between fitness professionals and people with disabilities, especially in terms of the negative characteristics of fitness professionals. Most of the people with disabilities (60%) cited fitness professionals' personalities or condescending attitudes, while fitness professionals (60%) clearly focused more on the trainers' lack of knowledge, education, certification or understanding of the disability. When asked, "What draws you to personal training?" both groups answered similarly, mostly focusing on adaptive training

guidance and maintaining abilities or gaining strength. Two fitness professionals did mention something regarding a comfortable environment and/or personality while responding to this question, yet these responses still demonstrate how people with disabilities appear to clearly prioritize the trainer's personality or demeanor over knowledge of adaptive exercise, while fitness professionals believe people with disabilities would find knowledge of adaptive exercise, experience, or certifications of more importance.

Furthermore, responses to the questions about the importance of education, demeanor, and fitness certifications also reflect this finding. The only scaled ranking question unanimously answered "extremely important" by people with disabilities was, "How important is it for them to encompass a demeanor you enjoy being around?", while fitness professional unanimously answered "yes" to the yes/no questions, "Are fitness certifications important to people with disabilities?" and "Do you believe education level of the personal trainer matter to people with disabilities?" Perhaps new standards and current certifications need to incorporate attitudinal competencies covering appropriate demeanor in addition to the competencies of knowledge based ones that already exist to ensure this need deemed "extremely important" by people with disabilities is met.

Thus, this pilot study suggests that people with disabilities prefer certain competencies in fitness professionals and that those preferences may vary from what fitness professionals believe people with disabilities find as the most important competencies. Notably, people with disabilities appear to value the demeanor or personality of fitness professionals more than knowledge of adaptive exercise,

certification, or education as fitness professionals indicated. Nevertheless, both of these competencies however, were seen as relevant and important in this study.

When examining differences across disabilities, the importance of working with a competent trainer, was more pronounced among those with a neurological impairment versus other disabilities. Literature has shown that following an abbreviated stay in outpatient rehabilitation, individuals with neurologic disability have few, if any, options to continue their physical recovery after discharge, which increases their risk for functional decline and secondary conditions. Fitness professionals in community based fitness facilities have potential to assist therapists in extending the recovery process to prevent this decline. Recently, a “*therapist-to-trainer*” theoretical model has been developed by Rimmer, which illustrates the process of facilitation for this transition and can be employed to enable people with neurological disability to remain, or start, being physically active and avoid their risk for functional decline and secondary conditions (Rimmer & Henley, 2013). If models like this are followed, people with neurological impairments could be more likely to work with a competent trainer and lead a healthier lifestyle post rehabilitation.

A. **Limitations**

There were several limitations in this study. The small sample size dramatically limits the power of statistical testing which decreases the opportunity to detect significant results even when large differences are apparent. Second, the sample likely did not adequately represent the perspectives of persons with disabilities and fitness professionals. The participants were a convenience sample and was less diverse in terms of disability type, income, and education had a more purposive or random

sampling method been used. Third, the survey may not have covered all the most relevant questions regarding competencies of fitness professionals. Perhaps a group of fitness professionals all having the same certification would have made a difference in the results.

B. **Implications and Next Steps**

Additional research is needed on differences across types of disability. The finding of differences between those with neurological versus other impairments indicate that all disabilities may not be the same in terms of perceived importance of trainer characteristics. Exploring this finding could lead to a better understanding of how to make physical activity with a fitness professional more appealing to people with disabilities, thus, increasing the overall percentage of participation in physical activity for this population.

The results of this pilot study is suggestive for fitness professionals and for development of competencies in this field of research. Modest differences emerged between what people with disabilities see as important competencies for fitness professionals versus what fitness professionals believe they thought were the most important competencies. These results strongly suggest the importance of demeanor and attitude when working with people with disabilities. Certifications should strongly consider these characteristics a priority when certifying fitness professionals. Research will be needed to further explore the impact of such competencies. As previous literature has illustrated, it is natural for people to feel insecure in an unfamiliar environment, so it becomes imperative for the fitness professional to offer valuable guidance by supporting clients' goals and guiding them through routines that allow them

to develop confidence in their exercise choices and trust in their trainer (Defeat Gym Intimidation, 2011). This all falls under the realm of demeanor. More research should be done with a larger sample size and more in-depth questions to validate and further understand this finding.

APPENDICES

APPENDIX A

Dephi Group Questionnaire:

The following items represent an initial draft of a questionnaire regarding what competencies in fitness professionals are most important to people with disabilities.

These initial items were based on multiple scholarly articles and current specialty fitness certification guidelines.

Please review the questions below. At the end of this form, please indicate your reactions to the survey items, the wording used, format, and whether you think items should be added or possibly taken out to better capture information related to the competencies in personal trainers that people with physical disabilities value most.

Physical Activity Behavior and Experience

1. What is your current physical activity level like?
A. Sedentary B. Sometimes active C. Active at least 30 min. per day, 5-7 days/week

2. What is your experience with personal training, if any?
A. Have never tried B. Tried, but didn't continue C. Would like to try, but haven't

D. Currently working with one

2a. What is your explanation for your answer? For example, if you're working with one, why are you working with one, or if you tried, but discontinued, why?

Barriers and Facilitators

3. What actions are offputting in fitness professionals?

APPENDIX A (CONTINUED)

4. What draws you to personal training?

Personal Trainers' Characteristics

5. Does education level of the personal trainer matter?

A. Yes B. No

5a. If yes, what type of degree is preferred?

A. Associate's B. Bachelor's C. Master's D. Ph.D

6. Are fitness certifications important?

A. Yes B. No

6a. If yes, do you prefer one of the following?

A. American Council on Exercise (ACE) Personal Trainer

B. American College of Sports Medicine (ACSM) Personal Trainer

C. NASM (National Academy of Sports Medicine) Personal Trainer

D. National Strength and Conditioning Association (NSCA) Personal Trainer

E. ACSM Health Fitness Specialist

F. ACSM Certified Inclusive Fitness Trainer

G. ACE Advanced Health and Fitness Specialist

H. No preference

I. Other: _____

7. Do you prefer trainers who can travel to your home?

A. Yes B. No C. No preference

APPENDIX A (CONTINUED)

8. How important is cost to you?

A. Extremely important B. Important C. Somewhat important D. Not important

9. Is the trainers' attitude toward disability important? For example, uses respectful, person-first language ?

A. Extremely important B. Important C. Somewhat important D. Not important

10. Is accessibility and awareness of the U.S. Access Board Guidelines for facility design important?

A. Extremely important B. Important C. Somewhat important D. Not important

11. How important is it for them to have knowledge about adaptive exercise techniques?

A. Extremely important B. Important C. Somewhat important D. Not important

12. How important is it for them to provide motivational techniques to begin or continue encouraging healthy lifestyles?

A. Extremely important B. Important C. Somewhat important D. Not important

13. How important is it for them to encompass a demeanor you enjoy being around?

A. Extremely important B. Important C. Somewhat important D. Not important

What if?

14. Do you think if you had a knowledgeable, competent personal trainer at your disposal you would be more likely/feel more comfortable exercising?

A. Yes B. No C. Not sure

APPENDIX A (CONTINUED)

15. Do you bet you'd be healthier/feel better if you participated in activity with a personal trainer?

A. Yes B. No C. Not sure

Feedback on survey:

APPENDIX B

The following items represent a questionnaire regarding what competencies in fitness professionals are most important to people with disabilities. Identification of the topics represented by these items are based on preliminary health promotion and disabilities research, specialty fitness certification guidelines, and feedback from a Delphi survey. Please review the questions below. Thank you!

Demographics

1. What is your disability and/or diagnosis?

2. How long have you experienced this?

Physical Activity Behavior and Experience

7. What is your current physical activity level like?

B. Sedentary B. Sometimes active C. Active at least 30 min. per day, 5-7 days/week

8. What is your experience with personal training, if any?

A. Have never tried B. Tried, but didn't continue C. Would like to try, but haven't

D. Currently working with one

2a. What is your explanation for your answer? For example, if you're working with one, why are you working with one, or if you tried, but discontinued, why?

Barriers and Facilitators

9. What actions are offputting in fitness professionals?

APPENDIX B (CONTINUED)

10. What draws you to personal training?

Personal Trainers' Characteristics

11. Does education level of the personal trainer matter?

B. Yes B. No

5a. If yes, what type of degree is preferred?

B. Associate's

B. Bachelor's

C. Master's

D. Ph.D

12. Are fitness certifications important?

B. Yes B. No

6a. If yes, do you prefer one of the following?

B. American Council on Exercise (ACE) Personal Trainer

B. American College of Sports Medicine (ACSM) Personal Trainer

C. NASM (National Academy of Sports Medicine) Personal Trainer

D. National Strength and Conditioning Association (NSCA) Personal Trainer

E. ACSM Health Fitness Specialist

F. ACSM Certified Inclusive Fitness Trainer

G. ACE Advanced Health and Fitness Specialist

H. No preference

I. Other: _____

7. Do you prefer trainers who can travel to your home?

A. Yes B. No C. No preference

APPENDIX B (CONTINUED)

8. How important is cost to you?

A. Extremely important B. Important C. Somewhat important D. Not important

9. Is the trainers' attitude toward disability important? For example, uses respectful, person-first language ?

A. Extremely important B. Important C. Somewhat important D. Not important

10. Is accessibility and awareness of the U.S. Access Board Guidelines for facility design important?

A. Extremely important B. Important C. Somewhat important D. Not important

E. I do not know what these guidelines are

11. How important is it for them to have knowledge about adaptive exercise techniques?

A. Extremely important B. Important C. Somewhat important D. Not important

12. How important is it for them to provide motivational techniques to begin or continue encouraging healthy lifestyles?

A. Extremely important B. Important C. Somewhat important D. Not important

13. How important is it for them to encompass a demeanor you enjoy being around?

A. Extremely important B. Important C. Somewhat important D. Not important

What if?

14. Do you think if you had a knowledgeable, competent personal trainer at your disposal you would be more likely/feel more comfortable exercising?

A. Yes B. No C. Not sure

APPENDIX B (CONTINUED)

15. Do you bet you'd be healthier/feel better if you participated in activity with a personal trainer?

A. Yes B. No C. Not sure

APPENDIX C

The following items represent a questionnaire regarding what fitness professionals think people with disabilities believe are the most important competencies in fitness professionals. Identification of the topics represented by these items are based on preliminary health promotion and disabilities research, specialty fitness certification guidelines, and feedback from a Delphi survey. Please review the questions below. Thank you!

Demographics

13. As a personal trainer, what certifications do you have?

14. How long have you been a certified personal trainer?

People with Disabilities Physical Activity Behavior and Experience

15. What do you believe would be the physical activity level of a person with a disability?

C. Sedentary B. Sometimes active C. Active at least 30 min. per day, 5-7 days/week

16. What do you believe is the experience of a person with a disability with personal training, if any?

A. Have never tried B. Tried, but didn't continue C. Would like to try, but haven't

D. Currently working with one

2a. What is your explanation for your answer?

Barriers and Facilitators

17. What actions do you believe people with disabilities find offputting in fitness professionals?

APPENDIX C (CONTINUED)

18. What actions do you believe draw people with disabilities to personal training?

Personal Trainers' Characteristics

19. Do you believe education level of the personal trainer matters to people with disabilities?

C. Yes B. No

5a. If yes, what type of degree is preferred?

C. Associate's B. Bachelor's C. Master's D. Ph.D

20. Are fitness certifications important to people with disabilities?

C. Yes B. No

6a. If yes, do you think they prefer one of the following?

C. American Council on Exercise (ACE) Personal Trainer

B. American College of Sports Medicine (ACSM) Personal Trainer

C. NASM (National Academy of Sports Medicine) Personal Trainer

D. National Strength and Conditioning Association (NSCA) Personal Trainer

E. ACSM Health Fitness Specialist

F. ACSM Certified Inclusive Fitness Trainer

G. ACE Advanced Health and Fitness Specialist

H. No preference

I. Other: _____

7. Do you believe people with disabilities prefer trainers who can travel to his/her home?

A. Yes B. No C. No preference

APPENDIX C (CONTINUED)

8. How important do you believe cost is to people with disabilities?

A. Extremely important B. Important C. Somewhat important D. Not important

9. Is the trainers' attitude toward disability important? For example, uses respectful, person-first language?

A. Extremely important B. Important C. Somewhat important D. Not important

10. Is accessibility and awareness of the U.S. Access Board Guidelines for facility design important to a person with a disability?

A. Extremely important B. Important C. Somewhat important D. Not important

E. I do not know what these guidelines are

11. How important is it to people with disabilities for them to have knowledge about adaptive exercise techniques?

A. Extremely important B. Important C. Somewhat important D. Not important

12. How important is it to people with disabilities for trainers to provide motivational techniques to begin or continue encouraging healthy lifestyles?

A. Extremely important B. Important C. Somewhat important D. Not important

13. How important is it to people with disabilities for trainers to encompass a demeanor they enjoy being around?

A. Extremely important B. Important C. Somewhat important D. Not important

What if?

14. Do you think if a person with a disability had a knowledgeable, competent personal trainer at your disposal he/she would be more likely/feel more comfortable exercising?

APPENDIX C (CONTINUED)

A. Yes B. No C. Not sure

15. Do you bet a person with a disability would be healthier/feel better if you participated in activity with a personal trainer?

A. Yes B. No C. Not sure

APPENDIX D

Hello,

You are being asked to participate in a research study titled, "The Competencies of Fitness Professionals: View From the Disability Community". This project is being completed by Stephanie Steiner at the University of Illinois at Chicago (UIC) in partial fulfillment of the requirements for the MS degree. The purpose of this research study is to better understand what competencies of fitness professionals are most important to people with disabilities. You are eligible to participate if: (1) you are 18 or older and (2) you have a physical disability or (3) you are fitness professional. Study procedures are described below:

At this time, you are being asked to complete a very brief survey regarding your beliefs about what traits of fitness professionals are important to people with disabilities. The survey includes 15 questions and will take about 15 minutes to complete. If you agree to participate, the survey link will be sent to you via email, and you will be asked to complete the survey.

Participation in this study is voluntary. There is a potential risk of loss of confidentiality; however, the computer and access to email in which responses will be sent are protected by a password to minimize this risk. The study is designed to understand what specific traits in personal trainers people with disabilities value most. My intent is to use this data to help inform development of guidelines for personal trainers in working with people with physical disabilities. If you decide to participate, you have the right to withdraw your consent at any point to discontinue participation. If results of the research are published or discussed in conferences, no information will be included that would reveal your identity.

The people who will know that you are a research subject are the principal investigator, Stephanie Steiner, and her faculty sponsor, Glenn Fujiura. If you have any questions about the research study please contact Stephanie at 574-354-1390 or sstein8@uic.edu, or Glenn Fujiura at 312-413-9777 or gfujiura@uic.edu. If you have questions regarding your rights as a research subject, contact the Office for the Protection of Research Subjects (OPRS) at 1-866-789-6215 or uicirb@uic.edu.

If you would like to participate in this study, please reply to this email at sstein8@uic.edu indicating you would like to participate. Please understand that completion of the survey indicates your consent to participate in the study.

Thank you,

--

Stephanie Steiner, BS
Graduate Research Assistant
Department of Disability and Human Development (MC 626)
University of Illinois at Chicago

APPENDIX D (CONTINUED)

1640 W. Roosevelt Rd, Room 713

Chicago, IL 60608-6904

Phone: (312) 355-5905

APPENDIX E

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

May 6, 2013

Stephanie Steiner, BS
Disability and Human Development
1640 W. Roosevelt Road
Disability and Human Development, M/C 626
Chicago, IL 60612
Phone: (312) 355-5905

RE: Research Protocol # 2013-0433
"The Competencies of Fitness Professionals: View From the Disability Community"

Dear Ms. Steiner:

Your Initial Review application was reviewed on May 6, 2013 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 at UIC. Please note the following about your approved research:

<u>Exemption Period:</u>	May 6, 2013 – May 6, 2016
<u>Performance Site:</u>	UIC
<u>Subject Enrollment:</u>	25

Please Note: This approval is for Part 1 of the protocol only. An amendment will be required prior to implementation of Part 2, at which time the finalized survey and recruitment/consent materials for survey respondents should be submitted for review.

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 E (CONTINUED)

Page 2 of 3

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).
 - 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 (#2013-0433) on any documents or correspondence with the IRB concerning your research protocol.

APPENDIX E (CONTINUED)

Page 3 of 3

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 413-3202 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,



Teresa D. Johnston, B.S., C.I.P.
Assistant Director
Office for the Protection of Research Subjects

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

APPENDIX F

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

UIC Amendment #1

July 26, 2013

Stephanie Steiner, BS

Disability and Human Development

1640 W. Roosevelt Road

Disability and Human Development, M/C 626

Chicago, IL 60612

Phone: (312) 355-5905

RE: Research Protocol # 2013-0433
“The Competencies of Fitness Professionals: View From the Disability Community”

Dear Ms. Steiner:

The Amendment to your exempt research was reviewed on July 26, 2013 and it was determined that your amended research continues to meet the criteria for exemption. You may now implement the amendment.

APPENDIX F (CONTINUED)

Summary: UIC Amendment #1, dated June 27, 2013 (initially received June 28, 2013), involves the submission of the finalized surveys as developed during the Delphi Process in order to initiate the second phase of the study. This submission also includes recruitment and consent materials relevant to administration of the finalized surveys.

Exemption Period: July 26, 2013 – July 26, 2016

Amendment Approval Date: July 26, 2013

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.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
06/28/2013	Amendment	Exempt	07/12/2013	Modifications Required
07/19/2013	Response to Modifications	Exempt	07/26/2013	Approved

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.

APPENDIX F (CONTINUED)

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).
 - 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 (2013-0433) 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 the OPRS office at (312) 996-1711 or me at (312) 355-2908. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

APPENDIX F (CONTINUED)

Charles W. Hoehne

IRB Coordinator

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

CITED LITERATURE

- ACSM Certification. (2008). ACSM/NCPAD certified inclusive fitness trainer. Retrieved April 1, 2014 from <http://certification.acsm.org/cift-domains>
- Block, P. (2009). Commentaries. *International Journal of Therapy & Rehabilitation*, 16(1), 24-24.
- CDC. (2007). Physical activity among adults with a disability, MMWR, 56:1024
- Defeat Gym Intimidation. (2011). *American Fitness*, 29(3), 10.
- Drum, C.E., Krahn, G. L., Bersani, H. A. (Eds.). (2009). *Disability and public health*. Washington, DC: American Public Health Association.
- Durstine, J. L., Painter, P., Franklin, B. A., Morgan, D., Pitetti, K. H., & Roberts, S. O. (2000). Physical activity for the chronically ill and disabled. *Sports Medicine*, 30(3), 207-219. doi: 10.2165/00007256-200030030-00005
- Field, M. J., & Jette, A. M. (2007) Secondary conditions and aging with disability. (pp. 136-161). In Committee on Disability in America, *The future of disability in America*, Washington, DC: National Academy Press.
- Ginis Martin, K. A., & Hicks, A. L. (2007). Considerations for the development of a physical activity guide for Canadians with physical disabilities. *Applied Physiology, Nutrition & Metabolism*, 32, S135-S147. doi: 10.1139/H07-108
- Healy, G. N., Dunstan, D. W., Salmon, J., Cerin, E., Shaw, J. E., & Owen, N. (2008). Breaks in sedentary time: Beneficial associations with metabolic risk. *Diabetes Care*, 31(4), 661–666.
- Junker, L., & Carlberg, E. B. (2011). Factors that affect exercise participation among people with physical disabilities. *Advances in Physiotherapy*, 13(1), 18-25. doi: 10.3109/14038196.2011.556752
- Parks, J. B. (1990). Directory of fitness certifications. *Journal of Physical Education, Recreation and Dance*, 61 (1), 71-75.
- Physical Activity Guidelines Advisory Committee. (2008). Physical activity guidelines advisory committee report, 2008. Washington, DC: US Department of Health and Human Services, 2008, A1-H14
- Qualtrics. (2014) Who We Are. Retrieved April 1, 2014, from <http://www.qualtrics.com/about/>

- Rimmer, J. (2006). Use of the ICF in identifying factors that impact participation in physical activity/rehabilitation among people with disabilities. *Disability & Rehabilitation*, 28(17), 1087-1095. doi: 10.1080/09638280500493860
- Rimmer, J. (2012). Getting beyond the plateau: Bridging the gap between rehabilitation and community-based exercise. *PM R*, 4(11), 857-861. doi: 10.1016/j.pmrj.2012.08.008
- Rimmer, J., Chen, M. D., & Hsieh, K. (2011). A conceptual model for identifying, preventing, and managing secondary conditions in people with disabilities. *Physical Therapy*, 91(12), 1728-1739. doi: 10.2522/ptj.20100410
- Rimmer, J., Chen, M. D., McCubbin, J. A., Drum, C., & Peterson, J. (2010). Exercise intervention research on persons with disabilities: what we know and where we need to go. *Am J Phys Med Rehabil*, 89(3), 249-263. doi: 10.1097/PHM.0b013e3181c9fa9d
- Rimmer, J., & Henley, K. Y. (2013). Bridling the crossroad between inpatient/outpatient rehabilitation and lifelong community-based fitness for people with neurologic disability. *Journal of Neural Physical Therapy*, 37(2), 72-77. doi: 10.1097/NPT.0b013e318291bbf6
- Rimmer, J., & Rowland, J. L. (2008). Physical activity for youth with disabilities: A critical need in an underserved population. *Developmental Neurorehabilitation*, 11(2), 141-148. doi: 10.1080/17518420701688649
- Rimmer, J., Hsieh, K., Graham, B. C., Gerber, B. S., & Gray-Stanley, J. A. (2010). Barrier removal in increasing physical activity levels in obese African American women with disabilities. *Journal of Women's Health* (15409996), 19(10), 1869-1876. doi: 10.1089/jwh.2010.1941
- Rimmer, J., & Marques, A. C. (2012). Physical activity for people with disabilities. *Lancet*, 380(9838), 193-195. doi: 10.1016/S0140-6736(12)61028-9
- Rimmer, J., Schiller, W., & Chen, M. D. (2012). Effects of disability-associated low energy expenditure deconditioning syndrome. *Exercise and Sport Sciences Reviews*, 40(1), 22-29. doi: 10.1097/JES.0b013e31823b8b82
- Rimmer, J., Wang, E., & Smith, D. (2008). Barriers associated with exercise and community access for individuals with stroke. *Journal of Rehabilitation Research & Development*, 45(2), 315-322.
- Rimmer, J., Wolfe, L., Sinclair, L., & Armour, B. (2005). Physical activity among adults with a disability. *MMWR* 2007, 56:1021-1024.

- Roberts, S. (2010). The new frontier for personal trainers. *American Fitness*, 28(2), 24-30.
- Santana, J. C., Dawes, J., Antonio, J., & Kalman, D. S. (2007). The role of the fitness professional in providing sports/exercise nutrition advice. *Strength & Conditioning Journal*, 29 (3), 69-71.
- Schutt, R. K. (2012). *Investigating the social world: the process and practice of research*. Thousand Oaks, CA: Sage Publications.
- Summerfield, L. M. (1991). *Credentialing in the health, leisure, and movement professionals*. (Trends and Issue Paper No. 5). Washington,DC: ERIC Clearinghouse on Teacher Education.
- Thompson, W. R., Gordon, N. F., & Pescatello, L. S. (2010). *ACSM's guidelines for exercise testing and prescription*. Philadelphia, PA: Lippincott Williams & Wilkins.
- Van der Ploeg, H. P., Van der Beek, A. J., Van der Woude, L. H. V., & Van Mechelen, W. (2004). Physical activity for people with a disability: A conceptual model. *Sports Medicine*, 34(10), 639-649.

VITA

NAME: Stephanie A. Steiner

EDUCATION: B.S., Kinesiology, Indiana University, Bloomington, Indiana, 2011

M.S., Disability and Human Development, University of Illinois-Chicago,
Chicago, Illinois, 2014

TEACHING: Indiana University Physical Activity Instructor Program, Group Exercise,
2011

Indiana University, Department of Kinesiology, Foundations of Fitness
and Wellness, P105, 2010 - 2011

**PROFESSIONAL
CERTIFICATIONS:** American College of Sport Medicine Health Fitness Specialist, since 2012

American Council on Exercise, Personal Trainer, since 2009

American Council of Exercise, Group Exercise Instructor 2009