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# The Obesity Epidemic: Survey of Current Physical Therapy Trends in North Dakota

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THE OBESITY EPIDEMIC: SURVEY OF CURRENT PHYSICAL THERAPY  
TRENDS IN NORTH DAKOTA

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in partial fulfillment of the requirements  
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This Scholarly Project, submitted by Alexis Barten, Kristi Just, Lori Perry and Cassie Seal in partial fulfillment of the requirements for the Degree of Doctor of Physical Therapy from the University of North Dakota, has been read by the Advisor and Chairperson of Physical Therapy under whom the work has been done and is hereby approved.

  
(Graduate School Advisor)

  
(Chairperson, Physical Therapy)

PERMISSION

Title            The Obesity Epidemic: Survey of Current Physical Therapy  
Trends in North Dakota.

Department    Physical Therapy

Degree         Doctor of Physical Therapy

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December 15, 2006

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## ABSTRACT

**Background and Purpose.** Many different health professionals are involved in the prevention and treatment of obesity. The APTA believes that physical therapists should be in a leadership role among other health care providers in providing patient education and instruction regarding physical activity. The purpose of this study was to determine current practice trends among physical therapists in the state of North Dakota relating to patients who are overweight or obese. **Subjects and Methods.** Three hundred surveys were mailed to randomly selected physical therapists licensed in the State of North Dakota. The survey consisted of 23 questions concerning level of training, referral rates, comfort level in treating patients who are overweight or obese, and interventions provided to these patients. **Results.** Of the 300 surveys sent out, 136 (45.3%) were completed and returned for inclusion in this study. Those physical therapists who indicated they had advanced training did not have significantly higher comfort level in treating patients who are overweight or obese. Similarly there was no significant difference between advanced training and discussion or recording of weight status. Seventy-five percent of therapists surveyed had not received any referrals for weight management in the past year. Appearance, weight/height measurements, body mass index (BMI), and patient opinion were the most commonly used methods to assess

weight status. The most frequently used interventions included patient education, aerobic exercise, and strength training. **Discussion and Conclusion.** Physical therapists have appropriate education to identify at-risk patients and provide intervention to improve weight status, but are not currently active in promoting themselves as members of the weight management team. Additional training may be necessary in the areas of objective methods of assessing weight status and weight management programs for patients with other co-morbidities.

## CHAPTER I

### INTRODUCTION

Obesity is a health issue that has reached epidemic proportions worldwide affecting nearly 300 million people.<sup>1</sup> According to the American Obesity Association, in the United States alone, there are approximately 127 million adults who are overweight, 60 million are obese, and yet another 9 million are severely obese.<sup>2</sup> The Centers for Disease Control and Prevention (CDC) reported in 2005, that 65 percent of people age 20 and older were overweight; this incidence has increased more than 75 percent since 1991.<sup>3,4</sup> These startling statistics cannot be attributed solely to the adult population, children are also becoming increasingly overweight. The CDC reported that 16 percent of children and teens in the United States are overweight or obese.<sup>3,4</sup>

Many different health professions are involved in the prevention and treatment of obesity. Recently, the physical therapy profession has begun to make physical therapists aware of the role that they could provide in treating people who are overweight and obese. Many physical therapists have the ability to be involved in obesity prevention and promoting health and wellness by providing weight management services related to physical activity and patient education. According to an article by Deusinger et al., “the scope of physical therapist practice includes the obligation to educate consumers about risks to their health and functional independence.”<sup>1(p8)</sup> To provide quality care to those in need of weight management services, physical therapists need the knowledge and skills

necessary to treat people who are overweight and obese as well as to be competent in these abilities.

According to WebMD Medical News, America's 2005 obesity report card shows North Dakota receiving a "D" in overall efforts to control obesity, leaving a great deal of room for improvement. Grades in this report were awarded by the University of Baltimore's Obesity Initiative and were based on each state's most recent legislative session. The grading criteria included legislation introduced or passed on the 8 following items: 1) nutrition standards; 2) nutrition standards and vending machine usage; 3) body mass index measured in school; 4) recess and physical education; 5) obesity programs and education; 6) obesity research; 7) obesity treatment in health insurance and; 8) obesity commissions.<sup>5</sup> In addition, North Dakota is ranked 16<sup>th</sup> in the United States for the highest rate of adult obesity and 5<sup>th</sup> highest in the rate of adults who are overweight or obese.<sup>6</sup> As a whole, the United States has a high percentage of people who are overweight or obese and the percentage continues to grow annually.

#### Scope of Study

This study was designed to determine the comfort and knowledge level of physical therapists licensed in North Dakota in treating patients who are overweight or obese through a voluntarily completed, confidential survey. This study addressed the therapists' perceptions of their ability, knowledge, and comfort when treating people who are overweight and obese. The study also identified methods of measuring weight status, whether or not referrals are being made, and commonly used interventions in treating people who are overweight or obese.

## Problem Statement

The American Physical Therapy Association (APTA) has recognized obesity as a risk factor for “impairments in aerobic capacity, anthropometric characteristics and integumentary integrity and other impairments that can affect a person’s ability to function at work, in the community, or at leisure.”<sup>1(p 1)</sup> The APTA has stated that physical therapists should become a provider of choice in the treatment of people who are overweight or obese. This will require that physical therapists become increasingly aware of and proficient in treating this patient population.

The incidence of obesity is increasing at an alarming rate. In the 1960’s approximately 13.4% of adults were classified as obese; by the year 2000, this percentage had risen to 30.9% of adults.<sup>1</sup> In 2003, it was estimated that 65% of adults in the United States could be classified as overweight or obese. According to Healthy North Dakota, in North Dakota there was an 11% increase in the number of people who are obese between the years of 1990 and 2003. In this same time period, 63 percent of North Dakotans were overweight or obese.<sup>7</sup> Obesity creates an increased risk for many adverse health conditions. Obesity is a problem that must be dealt with in order to improve the health of these individuals. Physical activity is one of many options for treatment and prevention of obesity.

Therapeutic exercise is outlined in the Guide to Physical Therapist Practice as the primary intervention that physical therapists provide for individuals who are overweight or obese.<sup>8</sup> It can increase the ability of an individual to perform physical activity, activities of daily living, home management, work, community or leisure activities, and

increase physical function and endurance all of which have relevance to an individual who is obese.<sup>1</sup>

### Purpose of the Study

The purpose of this study was to determine current practice trends among physical therapists in the State of North Dakota relating to patients who are overweight or obese. The goal was to evaluate current practice trends and attitudes to identify if the need for further advocacy and promotion exists for physical therapists in treating obesity. The purpose was also to determine whether there is a need for further educational training to ensure physical therapists have the comfort and competency level necessary to be involved in treating obesity.

Through a detailed survey, the aim was to gain insight into the attitudes and knowledge level of physical therapists in regards to the treatment of individuals who are obese. In a similar survey of physicians and other health care providers, Galuska et al<sup>9</sup> found that only 42% of adults who are obese are advised to lose weight, while another survey by the Centers for Disease Control reported that in North Dakota 88.8% of adults surveyed had not received any medical advice regarding weight management.<sup>9,10</sup> Another survey of physicians found that those who had received further medical training in the treatment of obesity felt more comfortable and competent in addressing obesity and were also more likely to make sure their patients received appropriate assessment and intervention.<sup>11</sup> No similar research has been done for physical therapists. Gostic<sup>12</sup> concludes that in order to effectively deal with the obesity epidemic, health care professionals, including physical therapists, need to be more consistent in addressing the issue of obesity in patients.

## Significance of the Study

The significance of this study is the importance of addressing the issue of the role, education, and knowledge level of physical therapists licensed in the state of North Dakota when treating people who are overweight or obese. This study is important to the profession of physical therapy, as physical therapists will increasingly play a key role in prevention, wellness, and exercise program development for individuals who are overweight and obese. The need for advocacy and promotion of this preventative role may be an important step for physical therapists and those not aware that this is a part of the profession.

Physical therapists licensed in the State of North Dakota and the patients who are overweight and obese that they treat are the primary beneficiaries of this study. Patients will also benefit by receiving better screening for the presence of risk factors or diseases that are associated with excess weight. Physical therapists will also gain knowledge necessary to provide weight management services that are effective at improving health by increasing physical activity levels.

While the incidence of obesity is increasing, studies such as this are needed to distinguish if physical therapists and other health care professionals are aware of their role in the treatment of people who are overweight and obese. The results of this study are important to increase awareness of health care practitioners and the general public about what can be done to treat obesity and improve our nation's health.

## Research Questions

1. Does the type of practice setting impact whether or not physical therapists address weight management in patients who are obese? (ie. Are outpatient or private

practice PTs more likely to address weight than PTs who work in a hospital setting)

2. Is a physical therapist with advanced training in weight management more likely to record and/or discuss weight status?
3. Does advanced training have an effect on whether or not physical therapists discuss or record weight status with patients who are overweight or obese?
4. Do physical therapists have the proper skills, knowledge, and/or training in therapeutic exercise techniques to improve aerobic capacity, fitness, balance, physical function/capacity and to deal with functional limitations and/or disabilities as a result of obesity?
5. Are physical therapists in North Dakota receiving referrals to treat patients who are overweight and/or obese?
6. Are physical therapists in North Dakota assessing weight status in patients who are overweight or obese and if so, what methods are being used?
7. Does physical therapy educational level obtained (bachelors, masters, doctoral) affect perceived comfort or competency level in treating patients who are overweight or obese?
8. Do physical therapists report that they record weight status (BMI, waist circumference, or other) in patient's charts?
9. Do physical therapists feel comfortable addressing weight loss in patients who are overweight and/or obese?
10. What types of interventions are physical therapists utilizing for the purpose of weight management?



11. What factors affect a physical therapist's comfort level in treating patients who are overweight or obese?

#### Hypotheses and Alternative Hypotheses

1. The type of practice setting impacts whether or not physical therapists address weight management in patients who are obese. (ie. Outpatient or private practice PTs are more likely to address weight than PTs who work in a hospital setting.)
  - a. The type of practice setting does not impact whether or not physical therapists address weight management in patients who are obese.
2. A physical therapist with advanced training in weight management is not as likely to record and/or discuss weight status than a physical therapist without advanced training.
  - a. A physical therapist with advanced training in weight management is more likely to record and/or discuss weight status as a physical therapist without advanced training.
3. Advanced training does not have an effect on whether or not physical therapists discuss or record weight status with patients who are overweight or obese.
  - a. Advanced training has an effect on whether or not physical therapists discuss or record weight status with patients who are overweight or obese.
4. Physical therapists have the proper skills, knowledge, and/or training in therapeutic exercise techniques to improve aerobic capacity, fitness, balance, physical function/capacity and to deal with functional limitations and/or disabilities as a result of obesity.

- a. Physical therapists do not have the proper skills, knowledge, and/or training in therapeutic exercise techniques to improve aerobic capacity, fitness, balance, physical function/capacity and to deal with functional limitations and/or disabilities as a result of obesity.
5. Physical therapists in North Dakota are not receiving referrals for the purpose of weight loss in individuals who are overweight or obese.
  - a. Physical therapists in North Dakota are receiving referrals for the purpose of weight loss in individuals who are overweight or obese.
6. Physical therapists in North Dakota are not addressing weight with patients who are overweight or obese.
  - a. Physical therapists in North Dakota are addressing weight with patients who are overweight or obese.
7. Physical therapy degree level obtained (bachelors, masters, doctoral) affects perceived comfort or competency level in treating patients who are overweight or obese. (i.e. The higher the degree level, the greater the perceived comfort or competency level.)
  - a. Physical therapy degree level obtained does not affect perceived comfort or competency level in treating patients who are overweight or obese.
8. Physical therapists in North Dakota are not recording weight status in patient's charts.
  - a. Physical therapists in North Dakota are recording weight status in patient's charts.

9. Physical therapists in North Dakota are not comfortable in addressing weight loss with patients who are overweight or obese.
  - a. Physical therapists in North Dakota are comfortable in addressing weight loss with patients who are overweight or obese.
10. No interventions are currently being utilized by physical therapists for the purpose of weight management.
  - a. Interventions are currently being used by physical therapists for the purpose of weight management.
11. No interventions are currently being utilized by physical therapists for the purpose of weight management.
  - a. Interventions are currently being used by physical therapists for the purpose of weight management.

## CHAPTER II

### LITERATURE REVIEW

#### Obesity and Physical Therapy

Obesity has long been associated with physical impairments, co-morbidities, and functional limitations. Patients who are obese may have limitations in aspects of physical function including aerobic capacity, balance, coordination, flexibility, and strength. The disease has also been linked to various adverse health effects such as hypertension, type II diabetes, asthma, orthopedic problems, and impaired psychosocial behavior. A combination of these health effects can influence a person's ability to perform activities of daily living including limitations in work, self-care, and leisure. Physical therapists have intensive training in exercise prescription that takes into consideration the individual's previous level of activity, interests, time constraints, and physical impairments. The knowledge and training that physical therapists receive enables them to ensure that exercise prescription include not only modality, frequency, duration, and intensity, but also practical implementation solutions and available behavioral support systems for monitoring progress and providing feedback.<sup>13</sup>

The APTA's Vision 2020 states that "consumers will have direct access to physical therapists in all environments for patient/client management, prevention, and wellness services."<sup>14(p1)</sup> Components of wellness services may include nutrition, physical fitness, occupation, environment, access to healthcare, social relationships,

intellect, emotion, and spirituality. Physical therapists are capable of providing individualized exercise instruction that prevents injury and considers the presence of other health conditions. The primary role of physical therapists “is in response to the need for physical activity and exercise, with emphasis on weight loss being secondary.”<sup>1(p17)</sup>

Therapeutic exercise is outlined in the *Guide to Physical Therapist Practice* as a primary intervention provided by physical therapists.<sup>8</sup> Exercise in combination with diet is considered the most effective way to improve the health and weight status of patients who are overweight or obese.<sup>5,15-20</sup> Exercise also can increase the ability of an individual to perform physical activity, activities of daily living, home management, work, community or leisure activities, and increase physical function and endurance, all of which have relevance to an individual who is obese.<sup>1</sup> In addition, physical therapists are trained in the assessment of musculoskeletal impairments and their relationship to function and are therefore in an excellent position to provide supervised weight management services that not only treat the impairments associated with obesity, but also prevent future physical limitations as a result of complications of obesity. Services provided by physical therapists have a positive impact on an individual’s level of physical fitness including cardiovascular and pulmonary endurance, muscle strength, power, flexibility, relaxation, and body composition.<sup>14</sup>

According to an article by Deussinger et al<sup>1</sup>, “the scope of physical therapist practice includes the obligation to educate consumers about risks to their health and functional independence.”<sup>1(p8)</sup> For this reason, the APTA believes that physical therapists

should be in a leadership role among other health care providers in providing patient education and instruction regarding physical activity.<sup>1</sup> The training that physical therapists receive in exercise physiology and pathological disease processes make them qualified to treat patients who are obese.

The APTA recommends increased physical therapy involvement in the treatment of patients with obesity related impairments, functional limitations, and disabilities. Objectives set forth in October of 2005 by the APTA's Board of Directors to improve health and wellness services provided by physical therapists include: 1) enhance the ability of physical therapists to provide services that positively impact fitness, promote health and wellness, and foster risk reduction across the lifespan; 2) enhance the quality of physical therapy education in fitness, health promotion, wellness and risk reduction across the lifespan; 3) disseminate evidence to internal and external stakeholders about practice in fitness, health promotion, wellness and risk reduction across the lifespan and; 4) promote physical therapists as practitioners of choice for fitness, health promotion, wellness and risk reduction across the lifespan.<sup>21</sup>

#### Weight Management Training

Training in the rehabilitation of physical impairments and in exercise physiology does not necessarily correlate to competency in treating obese patients. A significant problem with the obesity epidemic is the lack of medical professionals trained in the identification and treatment of individuals who are overweight and obese.<sup>1,22,23</sup> In fact, a survey of physicians found that those who had received further medical training in the treatment of obesity felt more comfortable and competent in addressing obesity and were

also more likely to make sure their patients received appropriate assessment and intervention.<sup>11</sup>

Several studies have looked at physician practice patterns and patient preferences in terms of medical management of overweight and obesity. Galuska et al<sup>9</sup> surveyed physicians and other health care providers and found that only 42% of adults who are obese are advised to lose weight. Another survey found that 88.8% of North Dakota adults surveyed had not received any medical advice regarding weight management.<sup>10</sup> Physicians are more likely to present treatment options to patients who have shown signs of complications associated with obesity as opposed to those who do not.<sup>19</sup> While important that physicians are addressing these complications, early recognition and intervention is key to not only preventing excess weight gain, but also preventing further disease complications as a result of obesity.<sup>24</sup> Medical professionals need to be able to screen for patients who are overweight and obese and intervene before these complications arise.

One study found that the most common intervention used by physicians with patients who are overweight or obese was simply to ignore the topic.<sup>25</sup> However, when physicians do address the topic, the two most common methods used are to refer to a dietician or suggest an exercise program.<sup>11</sup> Although physicians are generally encouraged to recommend starting an exercise program to patients who are overweight or obese, the problem with suggesting an exercise program is that physicians report they do not have sufficient time or training to follow that advice with how to actually go about developing and ensuring adherence to an exercise program.<sup>26,27</sup> Exercise programming

for patients who are obese requires staff who are appropriately credentialed to prescribe exercise for special populations.<sup>12</sup>

Studies demonstrate that the current level of weight management is not working for most patients. The weight of America cannot literally and figuratively be dumped solely onto the shoulders of our nation's physicians. A committee consisting of the Maternal and Child Health Bureau, the Health Resources and Services Administration, and the Department of Health and Human Services recommend the following professionals as possible resources available to assist physicians in providing weight management services: trained nurses, nurse practitioners, nutritionists, psychologists, and social workers.<sup>28</sup> There is no mention of a physical therapist, exercise specialist, or other professionals specifically trained to provide exercise services as members of the healthcare team who can be valuable resources for physicians who treat obesity.

Exercise is considered a key component in the treatment of obesity. Health care providers who are expected to recommend or provide exercise instruction should be trained to identify barriers to physical activity and be prepared to develop exercise programs that address these barriers.<sup>13</sup> It is essential that health care providers increase their knowledge of obesity and related comorbidities and recognize it as a complex disorder that requires long-term follow-up and care.<sup>29</sup> Curbing the obesity epidemic should involve the collaborative effort of health care providers who are skilled and knowledgeable in the matters of weight management.

In order to provide quality care to those in need of weight management services, physical therapists need to be competent in the knowledge and skills necessary to treat



these patients. There is a lack of research related to the current practice trends of physical therapists in the treatment of obesity. Guidelines in the assessment, evaluation, and treatment of patients who are overweight or obese need to be established and the first step is to determine what is currently being done to treat this population.

#### Multidisciplinary Roles/Referrals

It has been shown that improving the quality of life in individuals identified as overweight or obese involves a myriad of treatment interventions that includes numerous health care professionals working together to combat the health consequences of obesity.<sup>22</sup> As physical therapists become more involved in the evaluation, identification, and treatment of obesity, they will need to work collaboratively with other health care professionals to promote the health of patients who are overweight or obese. This may include physicians, nurses, dieticians, exercise specialists, personal trainers, psychologists, and/or social workers. The one thing that seems to be clear is that no one profession is equipped with all of the training necessary to provide comprehensive evaluation and treatment of patients who are overweight or obese. A lot of the responsibility has been placed upon physicians, but they simply are not capable based on their knowledge of biomechanics to provide the scope of services necessary to counsel patients in a comprehensive weight loss program. In fact, lack of time has been cited as a major barrier of physicians providing adequate weight management services for their patients.<sup>11</sup>

A study done by Potter et al<sup>25</sup> surveyed patients of primary care providers and found that patients do want and expect more weight management help than what they are

currently receiving from their doctors. Patients who credited their doctors with helping them to lose weight reported that they had been referred to a weight loss program or another medical professional. Patient compliance to an exercise program can be a major obstacle and can be increased when members of the health care team work together. For instance, compliance can be increased in patients with joint pain or other limiting impairments by coordinating an appropriate pain management strategy.<sup>12</sup> Another way that physicians can facilitate this relationship is to provide the physical therapist or other members of the weight management team with detailed information regarding the patient's medical diagnosis and any special precautions related to his or her medical diagnosis and exercise prescription.<sup>30</sup> Joyce and Kuperstein<sup>30</sup> state that education and communication prompt primary care physicians to provide appropriate physical therapy referrals and encourage active patient participation in the treatment program.

#### Assessment of Weight Status

Clinical guidelines recommend the use of Body Mass Index (BMI) scores for identifying patients at risk for weight related complications.<sup>15</sup> BMI takes into account a person's height and weight and establishes a number that can be ranked as underweight, normal weight, overweight, or obese. In adults, a BMI of 25-29.9 kg/m<sup>2</sup> is considered overweight and a BMI greater than or equal to 30 kg/m<sup>2</sup> is considered obese. The National Center for Health Statistics reports that health risks begin to increase in individuals with a BMI greater than 27 kg/m<sup>2</sup>; however a BMI greater than 25 has been associated with morbidities or diseases such as hypertension, elevated cholesterol, type II diabetes, and coronary heart disease.<sup>15</sup> In addition to BMI, methods of assessment should

also include waist circumference, overall risk status, and patient motivation for losing weight. Increased relative risk is considered present in men who have a waist circumference greater than 40 inches and in women with a waist circumference of 35 inches or more. An in-depth medical assessment should be performed if complications are present, if there is a recent large change in BMI values (3-4 units), or for any patient whose BMI is greater than 30.<sup>1</sup> In all instances, a large change in BMI should be documented in the patient's chart with yearly follow-ups.<sup>28</sup> Contrary to published guidelines, a physician chart review found that only 21% of patients who are obese and 11% of patients who are overweight had a diagnosis of overweight or obesity documented in their medical chart.<sup>23</sup> This indicates that there is insufficient documentation currently for individuals who fall into these weight categories in physician charts.

Older adults and children should also receive more vigorous screening if risk factors are present. Physical inactivity is more common in the elderly population than in any other age group and contributes to a greater loss of independence.<sup>12</sup> Seniors who are overweight or obese, sedentary, and/or present with medical complications should undergo an evaluation that includes an assessment of medical history, medication review, and risk factors. Additional screening should be completed with seniors to ensure that any weight reduction program will reduce the likelihood of adverse effects on bone health or nutritional status.<sup>12</sup> A study by the National Institutes of Health (NIH) found that not only are children who are overweight or obese more susceptible to diseases previously characterized as adult onset, but children who are overweight are more likely

to suffer bone fractures and have joint and muscle pains.<sup>24</sup> NIH director, Elias A Zerhouni M.D., was quoted in an NIH news report as saying that "if overweight youth fail to attain normal weight, they will likely experience an even greater incidence of these problems when they reach later in life."<sup>24(p1)</sup>

According to the Center for Disease Control (CDC) only 30% of adults age 18 and over reported engaging in regular physical activity. Forty percent of adults are completely inactive and more than 50% of Americans do not engage in enough physical activity to derive health benefits.<sup>4,31-33</sup> Children are engaging in more activity than adults, but according to the CDC, 23% of children do not engage in any type of physical activity.<sup>4,33</sup> For this reason, Singh suggests that "screening for sedentariness take place at all major encounters with health care professionals, given its role as a potent risk factor for all-cause and cardiovascular mortality, obesity, hypertension, insulin resistance, cardiovascular disease, diabetes, stroke, colon cancer, depression, osteoporosis, recurrent falls, and disability."<sup>13 (p276)</sup>

### Clinical Application

Deussinger et al<sup>1</sup> noted that when evaluating patients who are overweight or obese, physical therapists should assess weight status using BMI charts and measurements of waist circumference. The current use of body mass index charts to determine weight status has long been criticized, because it does not adjust for people who are physically fit. Another study corrected for this by using triceps skinfold measurements.<sup>34</sup> Subjects had to have a triceps skinfold measurement that placed them in the 85<sup>th</sup> percentile in order to be classified as overweight.

Waist circumference is used as an assessment of overweight and obesity, because it is positively correlated with abdominal fat, which is an independent predictor of risk factors and morbidity.<sup>15</sup> A waist circumference greater than 102 cm (40 inches) in men and 88 cm (35 inches) in women puts an individual at an increased risk for development of obesity-related risk factors.

When evaluating a patient with risk factors, a detailed patient history should include questions related to weight chronology, current and past exercise history, and any co-morbidities.<sup>1</sup> Assessment should also include evaluating the patients' motivation and readiness to lose weight as well as their aerobic capacity, circulation, gait, locomotion, balance, muscle performance, pain, range of motion, and posture. Physical therapists should also be aware of high-risk transition periods such as puberty, transition into adulthood, and menopause when weight gain is more common.<sup>1</sup> Gostic<sup>12</sup> concludes that in order to effectively deal with the obesity epidemic, health care professionals including physical therapists need to be more consistent in addressing the issue of obesity in patients. Patients who are obese with no additional risk factors should be counseled and provided patient education on starting an independent exercise program as well as given sufficient follow-up to increase compliance.<sup>12</sup>

Lack of patient motivation to improve health and weight status has been noted as another significant barrier to addressing weight among patients.<sup>11</sup> Bish et al<sup>35</sup> showed that adults who had a routine physical exam the year before and received medical advice to lose weight, had a higher prevalence of trying to lose weight. This suggests that weight management recommendations should take place at all patient interactions and

that for compliance reasons, patient's effort to lose weight should be monitored on a regular basis.<sup>12</sup> Health professionals also have a role in counseling patients about safe and effective weight loss and weight maintenance programs. This includes community education efforts as well as individualized patient instruction.<sup>14</sup> Research shows that exercise instruction alone is not sufficient to maintain weight loss, but that treatment programs must be multidisciplinary in their approach and should include a supervised exercise component.<sup>26</sup>

### Intervention

A variety of different methods have been utilized throughout the years to attempt to control weight. Factors have been proposed that affect the outcome of the different methods employed to control weight. This study focused on the following methods and factors proposed to affect weight control: aerobic exercise, resistance training, other treatments, and goal setting/compliance.

#### *Aerobic Exercise*

To combat weight gain and the medical problems associated with it, researchers have found that a combination of diet and exercise is the most effective way to improve the health of patients and secondarily to help them lose weight.<sup>5,15,16-20</sup> In a study of 784 previously obese individuals who had successfully lost at least 66 pounds, it was found that a combination of diet and exercise was the most commonly used method to lose and maintain the weight loss.<sup>36</sup> In 1998, the National Heart, Lung and Blood Institute in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases released the first federal guidelines for the management of adults who are overweight or

obese.<sup>15</sup> The guidelines recommend a combination of diet and exercise for weight loss purposes and decreasing risk factors for diseases like hypertension, heart disease, and diabetes. Aerobic exercise is considered the most effective type of physical activity, because it contributes to modest weight loss, reduces abdominal fat, increases cardiorespiratory fitness, and helps to maintain weight loss.<sup>12,15</sup> Numerous studies support these recommendations.<sup>1,12,13,18,19,24,26,29,34,36-40</sup> Studies found that low calorie diets consisting of 1000-1200 calories per day reduced total body weight by an average of 8% over 3-12 months.<sup>29,38</sup> Another found that exercising at an intensity of 60-85% of maximal heart rate for 30-60 minutes, 3 to 7 days per week produced a 3 to 6 pound weight loss over a 1 year period.<sup>25</sup> Yet another study showed that the combination of diet and exercise heralded the best results with a 3.3-6.6 pound greater weight loss than produced by dieting alone.<sup>38</sup>

The nature of dietary therapy without exercise is not enough to maintain weight loss.<sup>26</sup> Non-exercisers tend to regain weight lost while exercise groups are better able to maintain their weight loss long term.<sup>24,26,36</sup> In addition to increasing energy expenditure, physical activity may prevent the loss of lean body mass and the decreased resting metabolic rate that is often observed in individuals who use dieting alone.<sup>12</sup> Schmitz et al<sup>17</sup> found that not only does physical activity decrease body weight, but that the effect is four to five times larger in overweight individuals compared to those who are of normal weight. In other studies, the combination of increasing physical activity along with behavior and dietary therapy has been shown to be the most effective at reducing weight and improving the health risks associated with obesity.<sup>12,15</sup>

Clinical guidelines suggest that a long term goal for all adults should be to accumulate at least 30 minutes of moderate intensity aerobic exercise per day.<sup>4, 15</sup> However, there seems to be some disagreement as to whether intensity or duration is the most important prescription variable when the goal is to produce weight loss. Slentz<sup>19</sup> performed a randomized controlled trial of 120 sedentary subjects and found that the control group gained weight while the exercise groups lost both weight and fat. Specifically, the exercise group that performed long duration and vigorous intensity exercise lost significantly more weight compared to the other exercise groups. Another study found that duration is more important than intensity in achieving weight loss and that a minimum of 150 minutes (30 minutes, 5 days per week) of exercise per week is necessary to produce weight loss.<sup>39</sup> Preliminary research suggests that a short intensity 10-15 minute bouts of exercise performed three to four times per day are as effective if not more effective than a single long bout of exercise performed for 45-60 minutes per day.<sup>15</sup> Hill<sup>16</sup> believes that weight gain can be prevented in 90% of the population simply by increasing energy expenditure by 50 kilocalories per day which is equivalent to a one mile walk. Increasing physical activity levels can produce modest weight loss (10% reduction), which may result in improvement in or prevention of hypertension, diabetes, and hyperlipidemia.<sup>29,38</sup>

While studies support the fact that reducing calories is the most effective way to lose weight, the physical activity component may be more important at helping to maintain weight loss or even to prevent weight gain. Paul Campos<sup>41</sup> in his book *The Diet Myth* presents an interesting perspective on the obesity epidemic. He believes that the



negative health risks associated with obesity are not a result of excess weight, but rather the poor lifestyle choices observed in many patients who are obese. He also states that being overweight is not a bad thing or detrimental to one's health as long as you are physically active and eat a balanced diet. According to Campos, "cardiovascular and metabolic fitness are far more important predictors of both overall health and mortality risk than weight."<sup>(p34-5)</sup> This would mean that the emphasis should be placed on adopting a healthy active lifestyle and not just on losing weight.

### *Resistance Training*

The researchers at the National Weight Control Registry did an investigation into the long-term successful weight loss maintenance with over 5,000 participants and found that a high proportion of participants reported engaging in weight lifting.<sup>41</sup> They did not specify the type, frequency, or intensity of resistance training, however, resistance training has been shown to be an effective tool in promoting weight loss and can aid in increasing physical fitness and improving functional capabilities.<sup>13,36,42</sup> Researchers also found that resistance training reduced total body weight, BMI and fat percentage in preadolescent children who were obese.<sup>42</sup> Resistance training in patients who are overweight or obese should include activities that involve those muscles found to be weak or those that will simultaneously improve strength and function (i.e. climbing stairs).<sup>12</sup>

### *Other Treatments*

In addition to exercise, dietary and behavioral therapy, surgical procedures, and pharmacology have also been used to treat overweight and obesity. Weight loss surgery,

however, should be reserved for patients who have failed at other medical therapy attempts to lose weight and are suffering from the complications of extreme obesity.<sup>15</sup> There is strong evidence that weight loss drugs are appropriate to support weight loss along with diet and exercise therapy, but that they should not be used as a single intervention to promote weight loss. Health care professionals should be knowledgeable about potentially adverse side effects of these medications and continually monitor patients reactions.<sup>15</sup> The main problem with these treatment methods compared to diet and exercise is that there has been relatively few randomized control studies and those that have been done have had small sample sizes and inconsistent results.<sup>38</sup>

#### *Goal Setting/Compliance*

There is some mixed opinion about goal setting in the context of weight management intervention. The primary motivation for weight loss among patients who are overweight or obese is usually a concern for present or future health.<sup>43</sup> While it has been noted that weight loss can reduce risk for numerous health consequences and diseases, some researchers feel that patient goals should value improvement in function as much as or more than actual weight loss.<sup>1,37</sup> Intervention should be designed around achieving and maintaining weight loss and reducing risk for further complications related to being overweight. This can be accomplished with a primary goal of increasing energy expenditure rather than improving aerobic fitness.<sup>29</sup>

Compliance is another area that needs to be addressed when treating a person who is overweight or obese. One study found that children and their families maintained 100% adherence in a weight training program after being provided with detailed instructions

and attending weekly clinics and group exercise sessions for ten weeks. After the initial ten weeks, the children were provided with a home exercise program and an instructional video. Compliance dropped 33% after ten weeks and through the remainder of the year.<sup>42</sup> The compliance rates suggest the need for ongoing monitoring and supervision of exercise sessions by exercise professionals. Graffagnino<sup>44</sup> found a positive correlation between the number of weekly counseling sessions along with number of visits to a medical wellness center and the actual percentage of weight lost. With additional supervision by members of the weight management team, compliance rates can be maintained at a high rate resulting in increased weight loss for these individuals.

#### Prevention

The dramatic rise in obesity suggests that steps should be taken to prevent further increases and possibly help to decrease the occurrence. The increasing prevalence of obesity is attributed to increasingly sedentary lifestyles caused by decreased occupational demand for physical labor, reduced energy expenditure at school and daily living, and increased time spent watching television, using the internet, and playing video games.<sup>16</sup> One nationwide study found that only 8% of elementary schools, 6.4% of middle/junior high schools and 5.8% of high schools provide daily physical education or physical activity for students.<sup>4,45</sup> Extreme discrepancies are being created between energy consumed and energy burned due to the overindulgence and increased availability of high calorie, inexpensive, low nutrient food and supersized portions.<sup>16</sup> This discrepancy is what continues to fuel the obesity epidemic. It has been estimated that on average, Americans are gaining two pounds per year, which over time is having a devastating

effect on America's waistbands.<sup>16</sup> To combat these problems, research shows prevention may be the key<sup>46</sup>.

Another study suggests, preventative medicine is also appropriate as a means to improve a patient's quality of life and to manage health risk and chronic disease.<sup>13</sup> Prevention is considered the optimal choice for controlling weight because of the difficulty of maintaining significant weight loss over time and using exercise is supported because of the immediate health benefits as a result of the lifestyle changes.<sup>13,20,25,28,35-37,40</sup> Physicians and other health professionals play an important role in promoting preventative measures as well, including encouraging positive lifestyle behaviors and identifying and treating obesity-related comorbidities. This includes patient education and efforts to promote increased physical activity and improved nutrition within the community. The role of health care providers is to encourage an increase of physical activity before obesity becomes an issue for the individual. Hill<sup>16</sup> feels that a feasible public health goal should be to stop weight gain rather than to promote weight loss. Results consistently show that those who are physically active are less likely to gain weight over time than those who are sedentary.<sup>40</sup>

Multiple problems are associated with the frequency of overweight and obesity such as rising health care costs and lack of insurance coverage. At the forefront of the health crisis is the increased health care costs associated with obesity.<sup>47</sup> The rise in health care costs are associated with the increased prevalence of obesity, earlier onset of weight gain, and the increased medical complications that result from being overweight or obese. In 1999, it was estimated that the direct health care cost associated with obesity and

obesity-related impairments accounted for 7% of total health care costs in the United States.<sup>47</sup> Inactivity alone accounted for another 2.4% of the total health care costs. In 2000, the total cost of treating people who were obese was estimated to be \$117 billion.<sup>32</sup> Providing preventative services would decrease these costs. In fact, if 10% of adults began exercising regularly, \$5.6 billion could be saved in heart disease costs.<sup>32</sup> An overweight person sustaining a 10% weight reduction would reduce lifetime medical costs related to hypertension, type II diabetes, heart disease, stroke, and high cholesterol by up to \$5,300.<sup>47</sup>

### Advocacy

Third-party payers and healthcare provider's lack of acceptance of obesity as a disease limits the success of some approaches to prevent and decrease obesity.<sup>48</sup> A major obstacle to prevention services is the lack of third party payment for these services provided by physical therapists and other health care professionals. *The Guide to Physical Therapy Practice* is a text that outlines the scope of physical therapist practice and outlines examination, prognosis, and intervention procedures used by physical therapists in practice. Third-party payers use this guide as a tool to determine coverage for physical therapy services. The guide includes two practice patterns that list obesity as an inclusion criteria.<sup>8</sup> In addition, almost all patterns list obesity as a factor that may require a new episode of care, or at least modify the frequency of visits or episode duration.<sup>8</sup> However, unless insurance coverage includes a prevention or wellness program component, covered physical therapy reimbursement is limited for patients with a primary diagnosis of obesity.<sup>1</sup> Despite studies that have shown a sustained modest

weight loss of 10% decreases health care costs, increases the years of disease free life, increases life expectancy by 2 to 7 months, and reduces expected lifetime medical care costs by over \$5,000, coverage continues to be limited for preventative services for individuals who are overweight or obese.<sup>49</sup>

There is continued necessity for research to demonstrate that an increased call for advocating the role of physical therapists in treating obesity and its related impairments is needed to increase the number of physician referrals. Physical therapy referrals are facilitated when physical therapists promote their capabilities to help patients maximize their physical function for daily living and when physicians are aware of the specialization of local physical therapists.<sup>30</sup>

This study sought to determine if physical therapists were comfortable receiving referrals for the purpose of weight control, if they were receiving those referrals, if they assessed or addressed weight with their patients and what factors may affect their decision to address or assess the weight status of their patients.

## CHAPTER III

### METHODS

#### Subjects

Subjects were randomly selected from a list of 506 physical therapists licensed in the State of North Dakota, provided by the North Dakota Board of Physical Therapy. Three hundred therapists were randomly selected to receive the survey by mail.

#### Instrumentation

The survey consisted of 23 questions and took approximately 15 minutes to complete. A sample of the complete survey is located in Appendix A. The questions assessed clinician demographics, knowledge of obesity assessment, and evaluation techniques, as well as comfort and competency level in treating patients who are overweight or obese.

#### Procedure

1. The initial survey was pilot tested by 15 physical therapists in Minnesota for grammatical content and question clarity. The survey was revised and then approved by the University of North Dakota Institutional Review Board (Appendix B for a copy of approval of project IRB-200607-017).
2. The survey along with a letter outlining informed consent, purpose of research, and instructions was sent to a random sample of 300 physical therapists that are licensed in the State of North Dakota as provided by the North Dakota Board of

3. Physical Therapy. The letter requested that the therapists fill out and return the survey. (Appendix C) Completion and return of the survey implied consent. A metered envelope was included to allow participants to return the completed survey.
4. Return envelopes were numerically coded to track returned responses so that reminder letters would be sent only to physical therapists that had not completed the survey. The number codes were used only for this purpose and destroyed following the closing date of the survey.
5. Reminder postcards were to be mailed approximately 2 weeks following initial mailing, if necessary, to remind participants to complete the survey if they had not already done so.
6. If a minimum of 100 (~33%) returned surveys were not received after 4 weeks, another round of letters and surveys would be mailed to the remaining physical therapists who were not randomly selected to receive the initial mailing (206 therapists).
7. All submitted data collected by the closing due date, was analyzed through Statistical Package for Social Sciences (SPSS) 11.0 software.

#### Data Analysis

All survey responses were entered into a data file in SPSS 11.0 software.

Demographic data were reported using descriptive statistics. Age and years practicing were reported using the mean and range of years. Data provided for other demographic data including gender, employment classification, and degree level was reported as a percentage of total respondents. A Kruskal Wallis statistical test was utilized to



determine whether physical therapy degree level obtained had any affect on perceived comfort or competency level when treating patients who are overweight or obese. In addition, a Mann-Whitney statistical test was employed to determine if there is a relationship between advanced training in weight management and likelihood of recording or discussing weight status with patients. A significance level of  $p > .05$  was used for all statistical analyses. The remainder of the research questions and survey responses were reported using descriptive statistics.

## CHAPTER IV

### RESULTS

To obtain answers to the research questions identified in chapter 1, a survey was compiled and sent out via mail to physical therapists licensed in the State of North Dakota. Those who received the surveys were randomly selected from a list provided by the North Dakota Physical Therapy Licensure Board.

#### Respondent Demographics

Three hundred surveys were mailed out with 136 (45.3%) returned and deemed valid for inclusion in the study. Demographic analysis on gender, age, degree, employment status, and years practicing was performed for all 136 physical therapists that responded to the study. The results are listed in Table 1.

The first research question and hypothesis concerning practice settings addressed whether or not practice setting would affect a physical therapist addressing weight management for patients who are overweight or obese. Due to the high number of respondents selecting multiple practice settings, it was not possible to run statistical analysis for this research question.

#### Weight Management

Participants were asked to identify whether or not they had received any pre- or post-graduate entry level education related to weight management (Appendix A,

Table 1. Demographics of Survey Participants

	Frequency	Percent
Surveys:		
Sent	300	
Returned	135	45.3
Gender:		
Female	96	70.6
Male	38	27.9
Age:		
<25	9	6.6
26-30	17	12.5
31-35	17	12.5
36-40	13	9.6
41-45	21	15.4
46-50	29	21.3
51-55	16	11.8
56-60	9	6.6
>61	4	2.9
Degree:		
Certificate	1	0.8
BSPT	58	42.6
MPT/MSPT	51	37.5
DPT	24	17.6
Employment Status:		
Full time	95	69.8
Part time	27	19.8
Per Diem	8	5.9
Retired	3	2.2
Not currently in PT	2	1.5
Years Practicing:		
<5	23	16.9
6-10	24	17.6
11-15	13	9.6
16-20	18	13.2
21-25	20	14.7
26-30	22	16.2
31-35	7	5.2
36-40	3	2.2
>41	2	1.5

Question #10). Of those who responded, 101 (74.3%) stated they had not and 34 (25.0%) reported they had received additional education related to weight management.

Continuing education, graduate coursework, exercise physiology degree, and mandatory training in the workplace were reported as the sources of weight management education received by the participants (Table 2).

Table 2. Sources of Weight Management Education

	Frequency	Percent
Received Education:		
Yes	34	25.2
No	101	74.8
Type of Education Received:		
Continuing Education	24	70.6
Graduate Coursework	8	23.6
Exercise Physiology Degree	1	2.9
Mandatory Training	1	2.9

To provide an answer to the second research question, the responses from the survey regarding comfort levels in providing weight management services to patients who are overweight or obese was analyzed for the impact of advanced training. There were 101 participants that had no advanced training and 34 that had received advanced training. No significant difference was found between groups in relation to respondents' comfort levels ( $U= 724, p= 0.00$ ). Mean scores for those with and without advanced training can be found in Table 3.

Table 3. PT Comfort Level Mean Scores and Standard Deviations

Advanced Training	Mean Score	Standard Deviation
Yes (n=34)	3.23	1.117
No (n=101)	2.35	1.142

Further analysis of advanced training and its impact on the discussion ( $U= 1240, p= 0.295$ ) and documentation ( $U= 1066.5, p= 0.692$ ) of weight status revealed no

significant difference between those with and those without advanced training. Mean scores for discussion and documentation of weight status for those with and without advanced training can be found in Table 4.

Table 4. PT Discussion and Documentation Mean Scores and Standard Deviations

Advanced Training	Discussion Score	Documentation Score
Yes (n=34)	3.00 +/- 1.065	2.11 +/- 1.155
No (n=101)	2.75 +/- 0.973	2.02 +/- 1.104

To determine the respondents' perceived competence in the area of weight management, they were asked whether or not they felt that they have adequate knowledge, skills, and training to provide weight management services (Appendix A, Question #11). Responses showed that 70 (51.4%) respondents felt that physical therapists have the knowledge and 66 (48.5%) felt that physical therapists have the training to provide weight management services, but only 46 (33.8%) felt that physical therapists have the skills needed to provide weight management services. Responses to this question can be found in Table 5 and Figure 1.

#### Referrals

The participants were asked to report the number of referrals they received in the last year to determine if physical therapists were receiving referrals from other disciplines for the purpose of weight management (Appendix A, Question #12). The responses ranged from 96 (75.0%) physical therapists reporting no referrals received to 1 (0.8%) physical therapist reporting 50 referrals received in the last year with the next highest majority receiving between 1 and 5 referrals. Responses to this question can be found in Table 6 and Figure 2.

Table 5. Participants' Responses to Perceived PT Competence

	Yes	No
Knowledge	70	57
Skills	46	76
Training	66	59

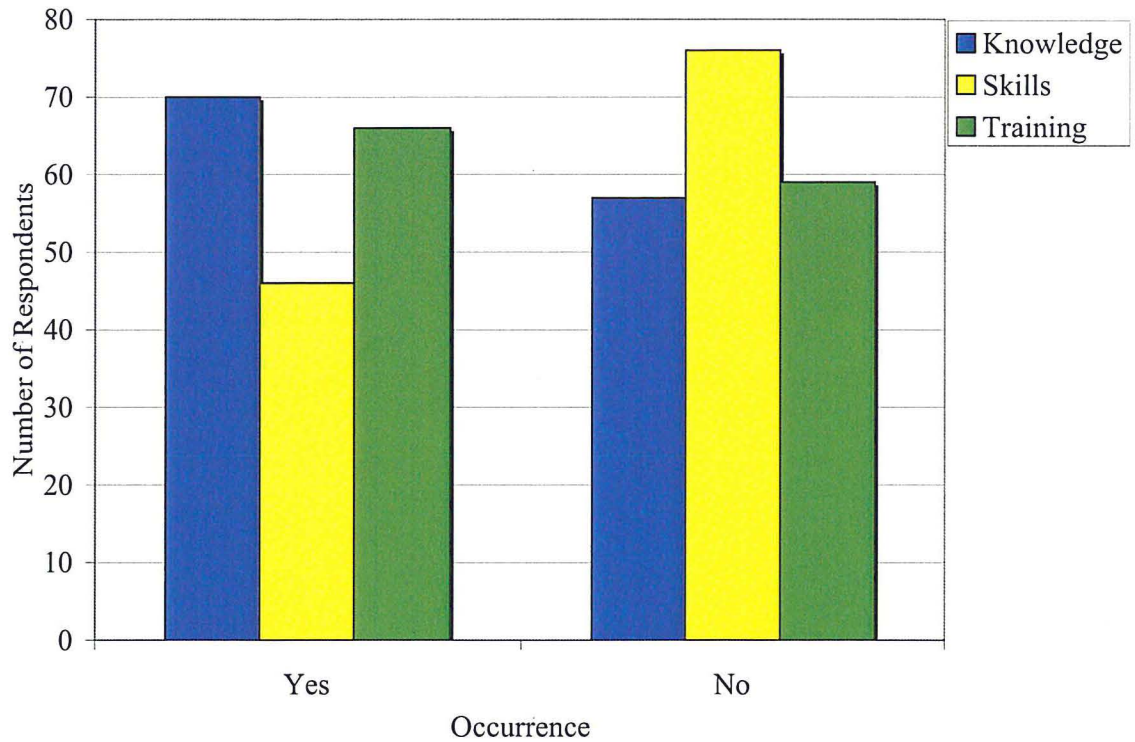


Figure 1. PT perceived competence in regards to adequate knowledge, skills, and training to provide weight management services.

Table 6. Weight Management Referrals Received in the Past Year

Referrals	Number of Respondents
0	96
1-5	27
6-10	3
11-15	1
16+	1

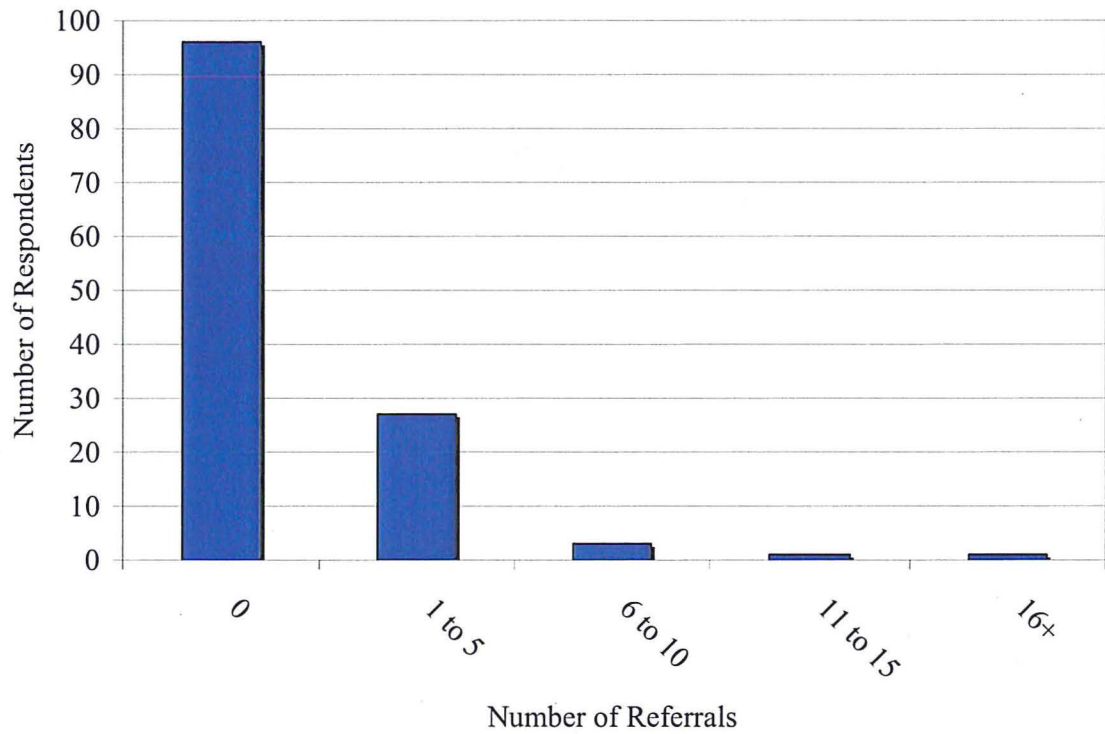


Figure 2. Number of referrals received by physical therapists for weight management services.

To determine if physical therapists were making referrals to other health care practitioners, participants were asked to identify whether or not they had ever referred a patient who was overweight or obese for additional services and, if so, to what discipline they made the referral (Appendix A, Question #19). Sixty-seven (49.3%) participants stated they have made referrals for additional services with dietitians, nutritionists, and weight loss programs being the most common sources of referrals. Four (2.9%) participants reported referrals in the other category identifying aerobics classes, fitness centers, and physicians or surgeons specializing in bariatrics as their referral sources. The frequency of referrals to each discipline can be found in Table 7 and Figure 3.

#### Assessment of Weight Status

Analysis of the methods of assessment of weight status (Appendix A, Question 14) revealed 63 (46.3%) participants identified patient appearance as their primary method of assessing weight status followed by 49 (36.0%) who used height and weight and 36 (26.4%) who used body mass index (BMI); however, 24 (17.6%) participants reported they use no methods of assessing weight status in their patients. Fourteen (10.3%) participants reported other methods of assessing weight status. These methods included skin folds, physician documentation, other health care provider documentation, medical diagnosis, and personal trainer assessment. The frequency of use of each method can be found in Table 8 and Figure 4.

#### Clinical Application

Participants were asked to identify their comfort level in treating patients who were overweight or obese if they were primarily referred for weight management or if referred for a different diagnosis (Appendix A, Question #15). The results show that



Table 7. Referrals Made by Participating Physical Therapists

Referral Discipline	Number of Referrals
Nutritionist	29
Dietician	45
Personal Trainer	12
Physician	22
Exercise Physiologist	12
Orthotist/Prosthetist	4
Behavioral Therapist	1
Weight Loss Program	23
Psychologist	4
Other PT	2
Other	4

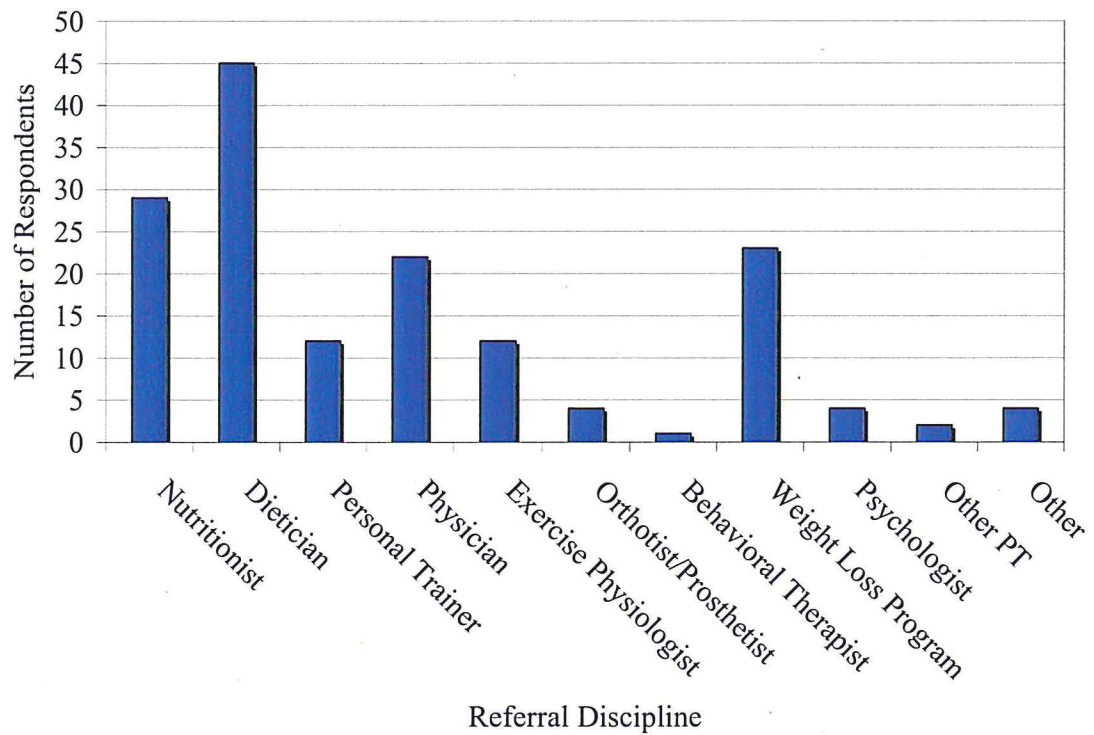


Figure 3. Sources of PT referrals for additional weight management services.

Table 8. Method of Weight Assessment Used by Respondents

Method	Number of Respondents
None	24
BMI	36
Ht/Wt	49
Body Composition	20
Appearance	63
Waist/Hip Ratio	3
Patient Opinion	29
Waist Circumference	8
Other	14

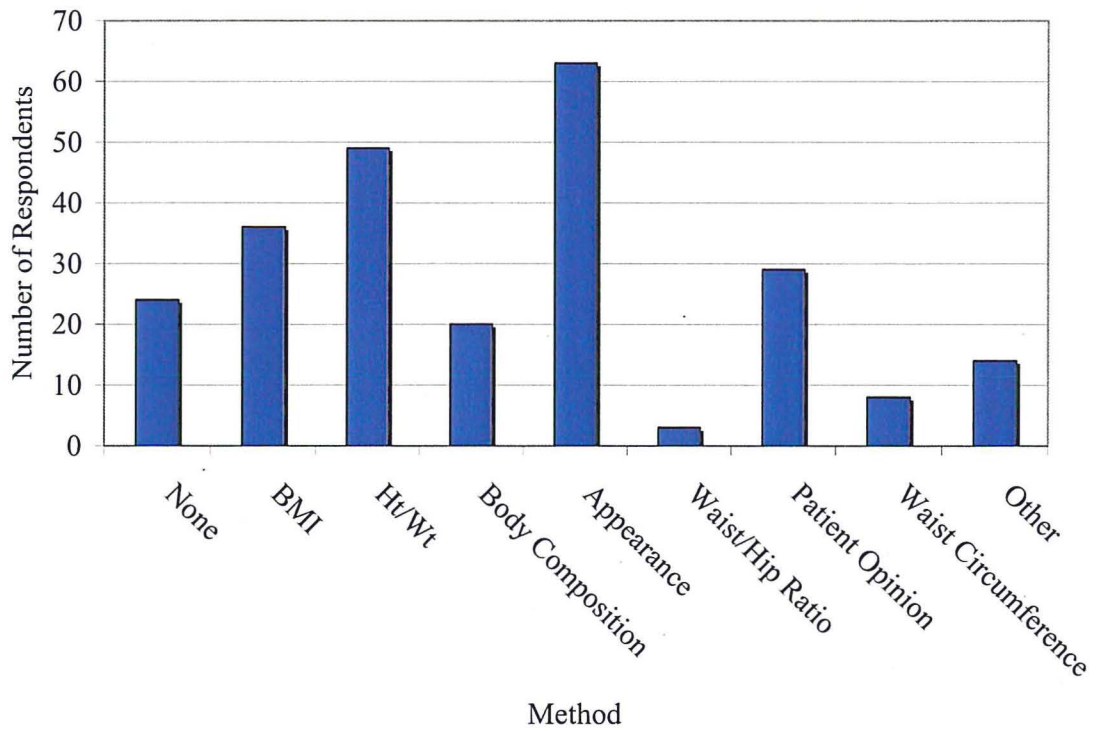


Figure 4. Methods of assessing weight status identified by participating PTs.

the respondents were more comfortable treating a patient who was overweight or obese when they were referred to physical therapy for a diagnosis other than weight management. Responses to this question can be found in Table 9 and Figure 5.

Physical therapist's comfort level in providing weight management services was analyzed by a Kruskal Wallis test. No significant difference was found between degree levels ( $X = 3.953$ ,  $p = 0.139$ ). The mean score for participants with a BSPT was  $2.61 \pm 1.302$ , those with MSPT or MPT had a mean score of  $2.38 \pm 1.044$ , and those with a DPT had a mean score of  $3.00 \pm 1.243$ .

Physical therapists were asked to identify how frequently they discuss, record, and address weight status with their patients (Appendix A, Question #15). The results showed that only 4 (2.9%) record weight status in their patient's chart all the time while 80 (58.8%) rarely or never record weight status. Responses also showed that only 5 (3.7%) of participating physical therapists discuss weight status with their patients all the time. In contrast, 51 (37.5%) of respondents rarely or never discuss weight status with their patients. The frequency of answers given can be found in Table 10 and Figure 6.

The physical therapists were also asked to identify their levels of comfort and confidence in their ability to provide weight management services (Appendix A, Question #15). Overwhelmingly, the responses showed that the participants rarely felt comfortable or confident in their abilities to provide weight management services for overweight or obese patients with very few participants always feeling comfortable or confident. The frequency of these responses can be found in Table 11 and Figure 7.

Table 9. Comfort in Treating Patients who are Overweight or Obese

	Weight Management	Other Diagnosis
Never	25	3
Rarely	31	3
Sometimes	27	14
Often	23	64
Always	6	39

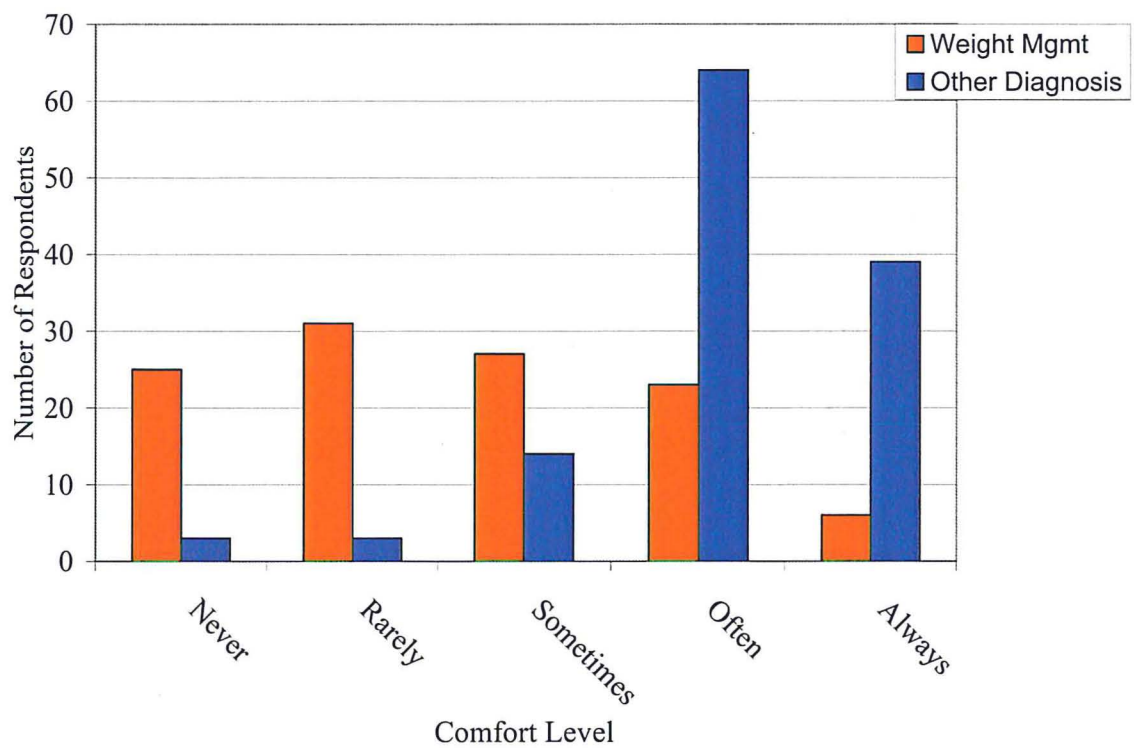


Figure 5. PT comfort level in treating patients who are overweight or obese for weight management versus other diagnoses.

Table 10. Frequency of Discussing, Documentation, and Addressing Weight Status

	Discuss	Document	Address
Never	9	43	17
Rarely	42	37	40
Sometimes	39	16	42
Often	27	10	12
Always	5	4	4

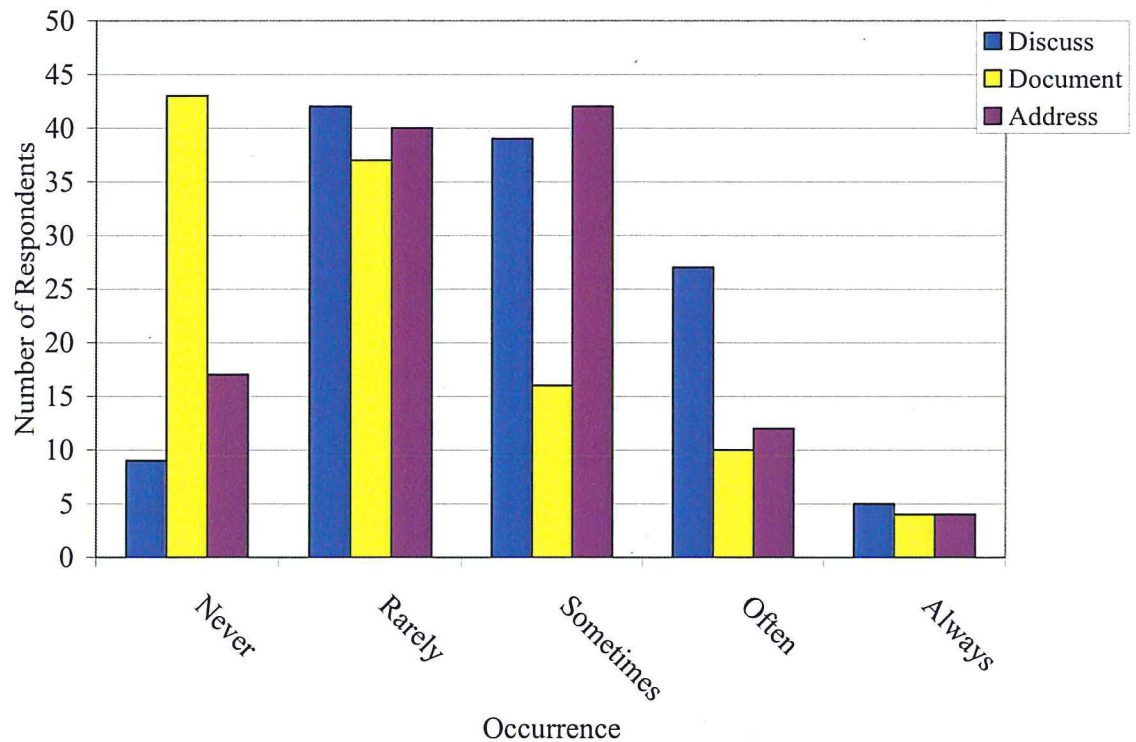


Figure 6. Incidence of PT discussion, documentation, and addressing weight status with patients.

Table 11. PT Comfort and Confidence in Providing Weight Management Services

	Comfort	Confidence
Never	20	22
Rarely	38	34
Sometimes	27	28
Often	21	21
Always	10	10

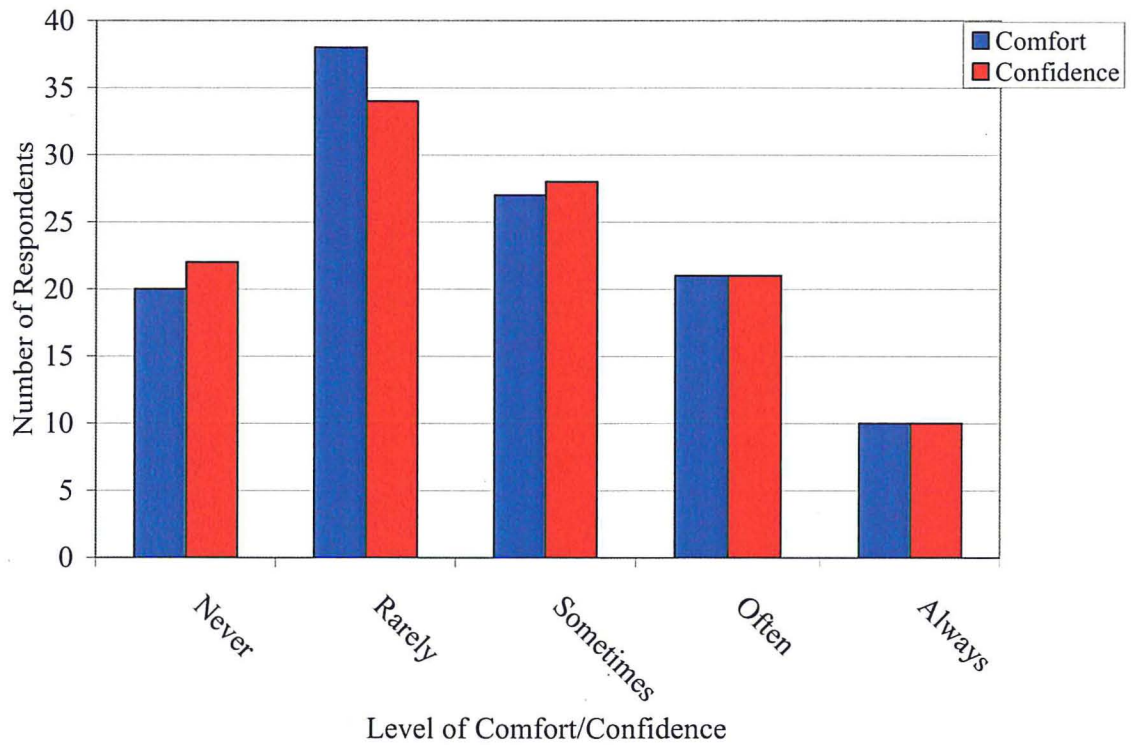


Figure 7. PT perceived levels of comfort and confidence in ability to provide weight management services.

### Intervention

Physical therapists were asked to identify the top 5 interventions used when providing weight management services to patients with a primary diagnosis of overweight or obese (Appendix A, Question #17). The most commonly reported choices in weight management intervention were patient education, aerobic exercise, and strength training. The reported use of each of these interventions can be found in Table 12 and Figure 8.

### Prevention/Advocacy

Physical therapists were asked to identify factors that may influence their decision to provide weight management services for a patient who is overweight or obese (Appendix A, Question #21). Co-morbidities and patient motivation were the top two reasons acknowledged as influencing a decision to provide weight management services. Five participants reported other factors including patient compliance, uncertainty on how to approach weight management, and lack of equipment or space to provide services (Table 13).

Physical therapists were also asked if they would be interested in continuing education on weight management if it were offered by the NDPTA (Appendix A, Question #22). One hundred and two (75%) participants indicated they would be interested and 29 (21.3%) indicated they would not. Some respondents indicated reasons for lack of interest were due to living outside of the state, feeling they have enough knowledge, or a belief that weight management is outside the scope of PT practice.

Table 12. Interventions Used in Weight Management

	1 <sup>st</sup> choice	2 <sup>nd</sup> choice	3 <sup>rd</sup> choice
Aerobic Exercise	22	19	11
Core Stabilization	1	5	7
Functional Training	4	3	5
Strength Training	2	16	15
Patient Education	28	7	12
Flexibility	0	2	4
Pool Therapy	1	3	4

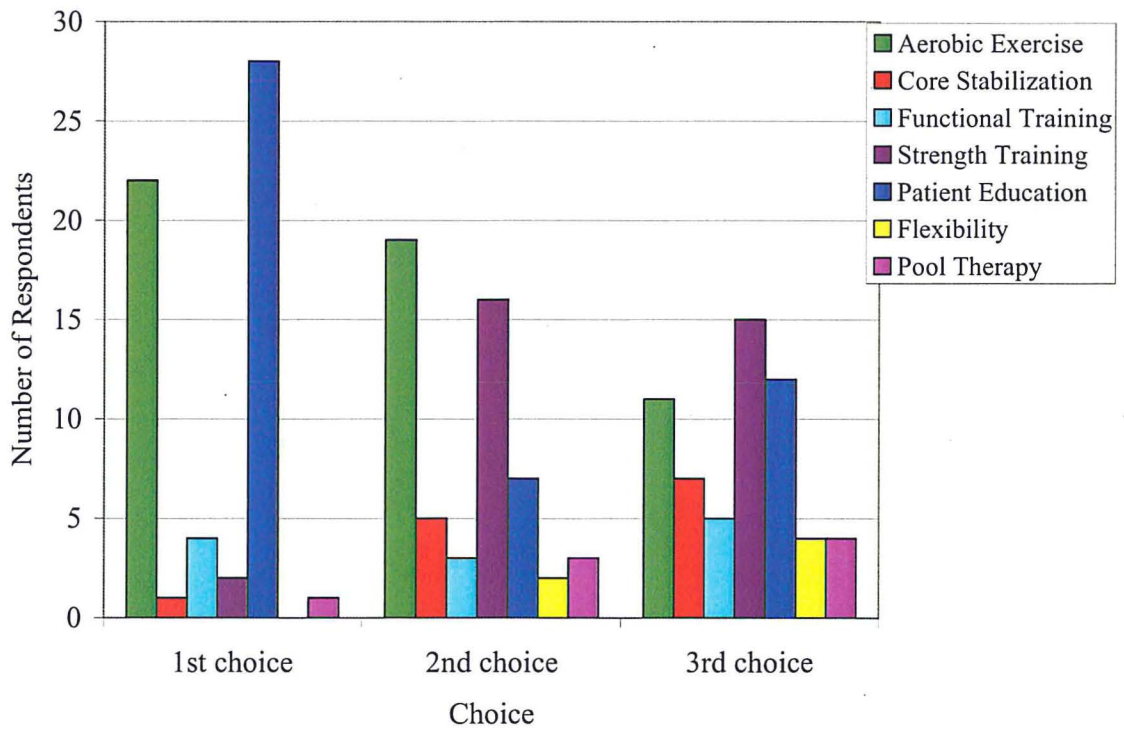


Figure 8. Participant reported top three choices for weight management intervention used to treat patients who are overweight or obese.



Table 13. Factors Affecting PT Decision to Treat for Weight Management.

Factor:	Frequency	Percent
Co-morbidities	85	62.5
Insurance	52	38.2
PT Comfort	38	27.9
PT Confidence	36	26.5
PT Schedule Conflict	7	5.2
Patient Age	12	8.8
Patient Financial Status	10	7.4
Patient Motivation	83	61.0
Patient Schedule Conflict	6	4.4
Other	5	3.7
Would Not Treat	9	6.6

Participants were also asked to identify programs offered by their facility that address weight management for the population at any age (Appendix A, Question #20). Some participants identified programs at their facilities that included after school programs for children, lunch time programs for working adults, and exercise classes for the elderly population. Overall, responses to this question were limited as many reported either not knowing if programs were offered or they were unaware of the types of programs offered at their facilities.

## CHAPTER V

### DISCUSSION

Following evaluation of the results of this survey, it can be concluded that the majority of participating physical therapists licensed in the State of North Dakota do not feel comfortable providing weight management services to patients who are overweight or obese. Due to the number of participants who indicated that they work in multiple practice settings, it was not possible to run analytical statistics to determine whether practice setting had any impact on the likelihood of weight status being addressed during physical therapy care. All other research questions were answered and addressed below.

#### Weight Management

As reported in the literature review, there is a lack of medical professionals trained in the identification and treatment of obesity.<sup>1, 16, 17</sup> The majority of studies related to medical management of obesity have focused on the attitudes and practices of physicians. There has been limited research done on the physical therapist's role in weight management and whether advanced training correlates with improved weight management intervention. The results indicate that only 34 out of the 136 (25%) responding physical therapists in North Dakota had received advanced training in weight management. Of the 34 therapists with advanced training, 31 (91.2%) reported that they felt comfortable providing weight management services. There were a total of 101 physical therapists who had not received any advanced training. Of those therapists

without advanced training, 81 (80.2%) felt comfortable providing weight management services.

It was hypothesized that advanced training for physical therapists would also correlate with increased discussion and reporting rates of weight status. The results showed that 91.2% of physical therapists with advanced training discuss weight status with a patient who is overweight or obese, whereas 91 (90.1%) therapists without weight training discussed weight status with their patients. Despite advanced training, only 27 (79.4%) indicated that they always record weight status in their patient's charts. It was interesting to note that a higher percentage (82.1%) of therapists without advanced training reported that they recorded weight status in the patient's chart as opposed to those with advanced training (79.4%). Results also indicated that a higher percentage of physical therapists without advanced training reported that they recorded weight status than those who actually felt comfortable providing weight management services.

Although these results were not found to be significant, they were consistent with a similar survey done with physicians, which found that those who received further medical training in the treatment of obesity felt more comfortable and competent in addressing obesity and were also more likely to make sure their patients received appropriate assessment and intervention.<sup>9</sup> One positive finding was a high percentage of physical therapists in North Dakota who reported addressing weight status regardless of whether they had received advanced training. This could indicate that physical therapists have already received appropriate education concerning weight management. However, the exact role of advanced training in weight management is unclear and more research is

needed to determine the effects of training on perceived comfort level and competence when treating patients who are overweight or obese.

### Referrals

A variety of health care professionals including physicians, nurses, dietitians, psychologists, exercise specialists, personal trainers, and social workers are possible resources in treating patients who are overweight or obese. The APTA believes that physical therapists should be in a leadership role among health care providers in providing patient education and instruction regarding physical activity.<sup>1</sup> Of the therapists that responded, 102 (75%) reported that they had not received any referrals in the last year to provide weight management services and 123 (90.4%) physical therapists had received less than 5 referrals in the past year.

There could be several reasons for these findings. The first is that there is a lack of awareness by physicians and other healthcare providers as to the capabilities of physical therapists. This may be because professions that are currently recommended to assist physicians in providing weight management services do not even include physical therapists or any other exercise professional.<sup>28</sup> Another reason is that although physical therapists are qualified to provide weight management services, they may not be marketing themselves in a way that is conducive to obtaining referrals. Joyce and Kuperstein<sup>41</sup> state that education and communication relating to the physical therapist's capabilities are important aspects that prompt primary care physicians to provide appropriate physical therapy referrals.

There is no one profession that is equipped with all of the training necessary to provide comprehensive evaluation and treatment of patients who are overweight or obese.

For this reason, physical therapists were asked to indicate if they had ever referred a patient to another health care provider for the purpose of weight management. Sixty-seven (49.6%) participants stated that they had made referrals for additional services with dietitians, nutritionists, and weight loss programs reported as the most common sources of referrals. Based on the survey responses, there is some room for improvement in increasing physical therapy referrals to other health care professionals who are available to ensure that each patient receives comprehensive weight management intervention. This may indicate a need for additional education as to the appropriateness of a referral to another profession and increased awareness as to what services, programs, and professionals are available to assist with weight management. Proper education and communication were found to increase physician referral rates to physical therapy<sup>30</sup> and there is likely some carryover for improving physical therapy referrals to other healthcare professionals involved in the treatment of patients who are overweight or obese.

#### Assessment of Weight Status

Clinical guidelines for identifying patients at risk for weight related complications recommend the use of Body Mass Index (BMI) scores.<sup>14</sup> Other methods of assessment may include waist circumference, overall risk status, and patient motivation for losing weight. Just under half (46.3%) of respondents reported using patient appearance as a primary method of assessing weight status. While it is a positive finding that weight status is being addressed, it is important to use a more objective method of assessment for documentation and for purpose of setting goals. In addition to appearance, methods commonly being used by physical therapists to assess weight status include weight/height measurements, BMI, and patient opinion. Further research would be valuable to

determine the frequency with which BMI is currently used to objectively determine weight status. Of particular concern was that 24 (17.6%) participants reported they did not use any form of assessment to determine weight status in their patients. The results indicated that further education regarding methods of assessing weight status is necessary to make certain that all physical therapists are appropriately and objectively monitoring their patient's health and weight status.

### Clinical Application

It should be noted that physical therapists felt more comfortable treating a patient who was overweight or obese for a diagnosis unrelated to the patient's weight status as opposed to providing treatment specifically for weight management. This may have been due to unwillingness or discomfort in directly addressing the patient's weight status. Jelalian et al.<sup>11</sup> found that concern about damaging a patient's self esteem or hurting their feelings was a commonly reported barrier to addressing weight problems in patients. A hypothesis stated that advanced degree level would increase comfort level when treating patients who are overweight or obese because of the increased time spent in the educational program. However, degree level was found to not be a significant factor in therapist comfort level, which indicated that clinical experience played more of a role than academic preparation in perceived comfort level.

A physician chart review found that only 21% of patients who were obese and 11% of patients who were overweight had a diagnosis of overweight or obese documented in their medical charts.<sup>17</sup> In contrast, the results of this survey showed that only 4 (2.9%) responding physical therapists recorded weight status in their patient's chart all the time while 80 (58.8%) rarely or never recorded weight status. Responses

also indicated that only 5 (3.7%) participating physical therapists discussed weight status with their patients all the time. In contrast, 51 (37.5%) respondents rarely or never discussed weight status with their patients. Reduced documentation and discussion of weight status may contribute to the lack of acceptance of obesity as a disease by third party payers and other healthcare providers. It is important to improve documentation skills to call attention to the increasing prevalence of obesity and to allow health care providers to provide optimal health care services for these patients.

### Intervention

Studies have found that a combination of exercise and diet was the most effective way to manage weight and improve health.<sup>3,14,18-22</sup> Aerobic exercise was considered the most effective type of physical activity when weight loss was the primary goal.<sup>10,14</sup> However, resistance training was also effective in promoting weight loss, increasing physical fitness, and improving functional capabilities.<sup>24,29,33</sup> For the purpose of this study, the focus was primarily on the exercise component of weight management. When physical therapists were asked to rank the top five interventions used when weight management was the primary goal of intervention, the most commonly selected responses included patient education, aerobic exercise, and strength training (Figure 8). This showed that physical therapists have a good understanding of appropriate interventions to promote weight loss.

According to Duessinger et al., “the scope of physical therapist practice includes the obligation to educate consumers about risks to their health and functional independence.”<sup>1(p8)</sup> Patient education, which is commonly the first choice of interventions, is a powerful tool that clinicians should be using to supplement all

interventions including weight management programs. Patients have the right to know how their weight is affecting their health status and the negative implications of making poor health choices. Proper instruction in a comprehensive exercise program, along with assistance from other healthcare providers, will help to maintain patient compliance and reduce the risk of serious complications as a result of being overweight or obese.

#### Prevention and Advocacy

Despite literature, which indicated that insurance reimbursement was a major limitation in attempts to prevent and decrease obesity,<sup>42</sup> the respondents indicated that the presence of co-morbidities (62.5%) and patient motivation (61%) were most likely to influence their decision-making about treating a patient who is overweight or obese. Insurance reimbursement was the third most commonly chosen reason (38.2%). These results contrast another study done by Galuska et al,<sup>9</sup> which found that health care professionals were more likely to advise patients about weight loss in the presence of weight related conditions such as diabetes mellitus or if their BMI was greater than 35 kg/m<sup>2</sup>. More research is needed to determine the types of co-morbidities that affect a physical therapist's decision-making regarding weight management intervention. Decision-making can be improved when health care professionals work collaboratively to develop a comprehensive weight management program that is appropriate and individualized for each patient's health status.<sup>16</sup>

The survey results indicated that patient motivation also played a significant role in a physical therapist's decision to treat a patient who is overweight or obese. Although it was uncertain exactly how patient motivation affects treatment, Galuska et al.<sup>9</sup> found that lack of patient motivation to improve health and weight status has been noted as a



significant barrier to addressing weight status among patients. It seems reasonable to conclude that the same would be true of physical therapists; however, more research is needed to determine the exact correlation that motivation levels have on treatment programs. Providing the patient with education about the risk factors associated with being overweight or obese is necessary and should be documented in the patient's chart. Patient motivation can also be a huge factor in compliance with a weight management program. Compliance is shown to improve when the patient's effort to lose weight is monitored on a regular basis.<sup>10</sup> For this reason, physical therapists should provide ongoing education and monitoring of an exercise program for all patients who are overweight or obese and include other members of the health care team such as exercise physiologists or personal trainers to assist with monitoring efforts.

#### Limitations of the Study

While this study collected interesting data that may be built upon in future studies, there were a number of limitations. As with any survey, inaccurate reporting is always possible and the subjective nature of the responses made it difficult to draw conclusions. Participants were also only given approximately two weeks to return the survey, which may have affected the response rate.

Another major limitation was that only physical therapists who are licensed in the State of North Dakota were selected to receive this survey. This population was chosen due to ease of accessing contact information in a timely manner. In using random sampling, there was a risk that the respondents may not be representative of physical therapists licensed in the State of North Dakota or across the country. It would be

valuable to repeat this study on a larger scale to include all physical therapists licensed in North Dakota or a sampling of physical therapists licensed in states across the country.

Yet another limitation of this study was the clarity of the survey questions. Due to the ambiguity of certain survey questions, responses did not allow for analysis of the received data to answer the first research question. It would be beneficial to review the wording of the questions to ensure that the research questions could be analyzed with the responses received from the survey.

## CHAPTER VI

### CONCLUSION

As more consumers access physical therapy services, physical therapists should be taking a leadership role in preventing and treating patients who are overweight or obese. This means that physical therapists should be knowledgeable about proper screening methods to identify patients who are at risk for complications related to weight status. Body mass index, the most widely used method of assessment, should be documented in the chart and discussed with the patient if the score falls outside of a healthy weight category. Physical therapists should also be involved in educating other healthcare providers, third party payers, and the general public about the weight management programs and services that are offered by physical therapists.

This survey was conducted to address the lack of evidence that exists regarding the clinical behaviors and knowledge of physical therapists in the area of weight management. The results indicated that physical therapists have appropriate education to identify at-risk patients and provide intervention to improve weight status, but they are not currently doing so. Advanced training may be necessary in the areas of appropriate methods of assessing weight status and weight management programs for patients with other co-morbidities. More research is needed to determine how the type of practice setting affects physical therapist treatment of obesity.

APPENDIX A

**Survey of Physical Therapist's Approach to Weight Management**

**Demographics**

1. Age: \_\_\_\_
2. Gender: \_\_\_\_
3. Current type of practice (check all that apply):
 

<input type="checkbox"/> Acute Care Hospital	<input type="checkbox"/> Sub-Acute Rehab Hospital	<input type="checkbox"/> SNF/ECF/ICF
<input type="checkbox"/> Outpatient Clinic	<input type="checkbox"/> Private Practice	<input type="checkbox"/> Home Health Care
<input type="checkbox"/> Academic Institution	<input type="checkbox"/> Health & Wellness	<input type="checkbox"/> School System
<input type="checkbox"/> Research	<input type="checkbox"/> Industry	<input type="checkbox"/> N/A
<input type="checkbox"/> Other (please specify): _____		
4. Employment Classification:  
 Full-time     Part-time     Per-diem     Retired     Not Currently Working in PT
5. Highest Physical therapy Degree Obtained:  
 Certificate     BSPT     MPT/MSPT     DPT
6. Other Degree/s Earned:  
 \_\_\_\_\_
7. Certified Clinical Specialty Areas:  
 Neuro     Ortho     Cardiopulmonary     Pediatrics     Geriatric  
 Sports     Clinical Electrophysiologic/Wound Care     N/A
8. Please list any other areas of advanced training or continuing education: \_\_\_\_\_  
 \_\_\_\_\_
9. Years as a practicing PT: \_\_\_\_\_

**Weight Management**

10. Have you ever received any pre/post-degree entry level education related to weight management?  
 Y     N  
 If yes, check those that apply:  
 ACSM Certifications     Continuing Education     Graduate Coursework  
 Exercise Physiology Degree  
 Other: \_\_\_\_\_

11. I feel that I have the proper:

knowledge to provide physical therapy services for weight management:

Y  N  N/A

training to provide physical therapy services for weight management:

Y  N  N/A

skills to provide physical therapy services for weight management:

Y  N  N/A

12. In the last year, approximately how many referrals did you receive to provide weight management services for a patient diagnosed as overweight or obese? \_\_\_\_\_

N/A (if not currently practicing)

13. In the last year, approximately how many patients did you provide weight management intervention that was in addition to services appropriate for the referring diagnosis? \_\_\_\_\_

N/A (if not currently practicing)

14. What method do you use to assess overweight or obesity status in patients? (check all that apply)

None  Weight/Height  Appearance  Patient opinion  
 BMI  Body composition  Waist/Hip ratio  Waist circumference  
 N/A  Other (specify): \_\_\_\_\_

15. Please rank each of the following (0=N/A, 1=never, 2=rarely, 3=sometimes, 4=often, 5=always)

I feel comfortable treating a patient who is overweight or obese for the purpose of weight management.

I feel comfortable treating a patient who is overweight or obese for other diagnoses.

I discuss weight status with my patients regardless of diagnosis.

I record weight status in patient charts regardless of diagnosis.

I address weight management with patients who are overweight or obese.

I feel comfortable with my ability to provide weight management intervention.

I feel confident in my ability to provide weight management intervention.

16. Does patient age affect your comfort level when treating patients who are overweight or obese?

Y  N  N/A

If yes, please explain \_\_\_\_\_

---

17. When treating patients who are referred specifically for weight management services with a primary diagnosis of being overweight or obese, which interventions are you most likely to utilize?

Please rank your top 5 most commonly used interventions 1-5, with 1 being the most commonly used:

- |                                                 |                                            |                                            |
|-------------------------------------------------|--------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Aerobic exercise       | <input type="checkbox"/> Strength training | <input type="checkbox"/> Pool therapy      |
| <input type="checkbox"/> Core stabilization     | <input type="checkbox"/> Patient education | <input type="checkbox"/> Posture education |
| <input type="checkbox"/> Functional training    | <input type="checkbox"/> Flexibility       | <input type="checkbox"/> N/A               |
| <input type="checkbox"/> Other (explain): _____ |                                            |                                            |

18. When treating patients who are overweight or obese that have a referring diagnosis other than overweight or obese, what weight management interventions are you most likely to utilize?

Please rank your top 5 most commonly used interventions 1-5, with 1 being the most commonly used:

- |                                                 |                                              |                                            |
|-------------------------------------------------|----------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Aerobic exercise       | <input type="checkbox"/> Strength training   | <input type="checkbox"/> Pool therapy      |
| <input type="checkbox"/> Balance training       | <input type="checkbox"/> Core stabilization  | <input type="checkbox"/> Patient education |
| <input type="checkbox"/> Posture education      | <input type="checkbox"/> Functional training | <input type="checkbox"/> Manual therapy    |
| <input type="checkbox"/> ROM                    | <input type="checkbox"/> Flexibility         | <input type="checkbox"/> Skin care         |
| <input type="checkbox"/> Gait training          | <input type="checkbox"/> Assistive devices   | <input type="checkbox"/> Orthotics/Bracing |
| <input type="checkbox"/> Pain relief/management | <input type="checkbox"/> N/A                 |                                            |
| <input type="checkbox"/> Other (explain): _____ |                                              |                                            |

19. Have you ever referred a patient who is overweight or obese for additional services?

Y  N

If yes, check all that apply:

- |                                                 |                                                |                                                |
|-------------------------------------------------|------------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Nutritionist           | <input type="checkbox"/> Dietitian             | <input type="checkbox"/> Personal trainer      |
| <input type="checkbox"/> Physician              | <input type="checkbox"/> Exercise physiologist | <input type="checkbox"/> Orthotist/Prosthetist |
| <input type="checkbox"/> Behavior therapist     | <input type="checkbox"/> Weight loss program   | <input type="checkbox"/> Psychologist          |
| <input type="checkbox"/> Other PT               | <input type="checkbox"/> N/A                   |                                                |
| <input type="checkbox"/> Other (specify): _____ |                                                |                                                |

20. What types of weight management programs does your facility offer to patients for health promotion relative to fitness and weight management across the lifespan? (for example: Fit Kids/Teens, comprehensive weight loss). \_\_\_\_\_

---

21. What would affect your decision to treat a patient/client in need of weight management? (check all that apply)

- |                                                                          |                                                    |                                                          |
|--------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------|
| <input type="checkbox"/> Co-morbidities                                  | <input type="checkbox"/> Patient/Client motivation | <input type="checkbox"/> Patient/Client financial status |
| <input type="checkbox"/> PT comfort                                      | <input type="checkbox"/> PT confidence             | <input type="checkbox"/> Patient schedule conflict       |
| <input type="checkbox"/> Insurance/Reimbursement                         | <input type="checkbox"/> Patient/Client age        | <input type="checkbox"/> Pt schedule conflict            |
| <input type="checkbox"/> I would not treat someone for weight management |                                                    | <input type="checkbox"/> N/A                             |
| <input type="checkbox"/> Other: _____                                    |                                                    |                                                          |

22. If offered, would you be interested in attending continuing education for the purpose of weight management through the NDPTA?

Y  N

23. Additional Comments: \_\_\_\_\_

By returning this survey you are giving consent for all information gathered from its contents to be used as a part of a research study being conducted at the University of North Dakota School of Medicine and Health Sciences, Department of Physical Therapy. All responses from this survey will be kept confidential.

Thank you for your time!



**APPENDIX B**

REPORT OF ACTION: EXEMPT/EXPEDITED REVIEW  
University of North Dakota Institutional Review Board

Date: 7/7/2006 Project Number: IRB-200607-017

Principal Investigator: Jeno, Sue; Barten, Alexis; Seal, Cassie; Perry, Lori; Just, Kristi

Department: Physical Therapy

Project Title: Obesity Epidemic: Survey of Current Physical Therapy Trends in North Dakota

The above referenced project was reviewed by a designated member for the University's Institutional Review Board on July 17, 2006 and the following action was taken:

Project approved. Expedited Review Category No. \_\_\_\_\_  
Next scheduled review must be before: \_\_\_\_\_

Copies of the attached consent form with the IRB approval stamp dated \_\_\_\_\_  
must be used in obtaining consent for this study.

Project approved. Exempt Review Category No. 2

This approval is valid until July 15, 2007 as long as approved procedures are followed. No periodic review scheduled unless so stated in the Remarks Section.

Copies of the attached consent form with the IRB approval stamp dated \_\_\_\_\_  
must be used in obtaining consent for this study.

Minor modifications required. The required corrections/additions must be submitted to RDC for review and approval. This study may NOT be started UNTIL final IRB approval has been received.  
(See Remarks Section for further information.)

Project approval deferred. This study may not be started until final IRB approval has been received.  
(See Remarks Section for further information.)

REMARKS: Any unanticipated problem or adverse occurrence in the course of the research project must be reported within 5 days to the IRB Chairperson or RDC by submitting an Unanticipated Problem/Adverse Event Form.

Any changes to the Protocol or Consent Forms must receive IRB approval prior to being implemented (except where necessary to eliminate apparent immediate hazards to the subjects or others).

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature. All revisions MUST be highlighted.

Education Requirements Completed. (Project cannot be started until IRB education requirements are met.)

cc: Sue Jeno, <sup>✓</sup> Chair, Physical Therapy

*Beth A. Jell* 7-17-06  
Signature of Designated IRB Member Date  
UND's Institutional Review Board

If the proposed project (clinical medical) is to be part of a research activity funded by a Federal Agency, a special assurance statement or a completed 310 Form may be required. Contact RDC to obtain the required documents.

(Revised 07/2004)

**University of North Dakota Exempt Certification Form**  
**Research Involving the Use of Survey, Interview, Observational Procedures or Educational Tests**

Complete this form if you are requesting permission to use survey, interview, or observational procedures, or educational tests.

All research with human participants conducted by faculty, staff, and students associated with the University of North Dakota, must be reviewed and approved as prescribed by the University's policies and procedures governing the use of human subjects. No activities are to be initiated without prior review and approval by the Institutional Review Board.

Please answer the following questions regarding your research.

1. Are prisoners included in the research?  Yes  No

If you answered "Yes" to the above question, this research does not qualify as exempt. Please fill out and submit a "Human Subjects Review Form". If you answered "No", continue to question 2a.

2a. Are minors included in the research?  Yes  No

If you answered "No" to the above question, please skip question 2b and continue to question 3. If you answered "Yes", continue to question 2b.

2b. Does the research include survey or interview procedures? Does the research involve the observation of public behavior with researcher interaction with the subjects?  Yes  No

If you answered "Yes" to either of the above questions, this research does not qualify as exempt. Please fill out and submit a "Human Subjects Review Form". If you answered "No", continue to question 3.

3a. Will the data be recorded in a manner such that subjects cannot be identified, either directly or through identifiers linked to the subjects (subject name, social security number, birth date, coding, etc.)?  Yes  No

If you answered "Yes" to the above question, please skip question 3b and continue with the rest of the form. If you answered "No", continue to question 3b.

3b. Will the disclosure of the subjects' responses outside of the research reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation?

Yes  No

If you answered "Yes" to the above question, this research does not qualify as exempt. Please fill out and submit a "Human Subjects Review Form". If you answered "No", provide the information requested below.

If the research involves the use of audio, video, digital or image recordings of subjects, this research does not qualify as exempt. Please fill out and submit a "Human Subjects Review Form".

Principal Investigator: Sue Jenö, Alexis Barten, Cassie Seal, Lori Perry, Kristi Just

Telephone: (701) 777-2831 E-mail Address: sujeno@medicine.nodak.edu

Complete Mailing Address: PT Dept Room 1510 501 N Columbia Rd Stop 9037

School/College: School of Medicine and Health Sciences Department: Physical Therapy

Student Adviser (if applicable): Sue Jenö

Telephone: (701) 777-2831 E-mail Address: sujeno@medicine.nodak.edu

Address or Box #: PT Dept Room 1510 501 N Columbia Rd Stop 9037

School/College: School of Medicine and Health Sciences Department: Physical Therapy

Project Title: Obesity Epidemic: Survey of Current Physical Therapy Trends in North Dakota

Proposed Project Dates: Beginning Date: July 5, 2006 Completion Date: May 15, 2006<sup>D1</sup>  
(Including data analysis)

Funding agencies supporting this research:

(A copy of the funding proposal for each agency identified above MUST be attached to this proposal when submitted.)

5/1/06 1

Does the Principal Investigator or any researcher associated with this project have a Financial Interests Disclosure Document on file in the RD&C office? If not, submit one along with this application. If any researcher associated with this project has a financial interest in the results of this project, submit, on a separate piece of paper, an additional explanation of the financial interest.

YES or  NO

Will research subjects be recruited at another organization (e.g., hospitals, schools, YMCA) or will assistance with the data collection be obtained from another organization?

YES or  NO

If yes, list all institutions: \_\_\_\_\_

Letters from each organization must accompany this proposal. Each letter must illustrate that the organization understands their involvement in that study, and agrees to participate in the study. Letters must include the name and title of the individual signing the letter and should be printed on letterhead.

Does any external site where the research will be conducted have its own IRB?  YES or  NO

If yes, does the external site plan to rely on UND's IRB for approval of this study?  YES or  NO  
(If yes, contact the UND IRB at 701 777-4279 for additional requirements)

If your project has been or will be submitted to other IRBs, list those Boards below, along with the status of each proposal.

\_\_\_\_\_ Date submitted: \_\_\_\_\_ Status:  Approved  Pending  
\_\_\_\_\_ Date submitted: \_\_\_\_\_ Status:  Approved  Pending

(include the name and address of the IRB, a contact person at the IRB, and a phone number for that person)

**Type of Project:** Check "Yes" or "No" for each of the following.

YES or  NO New Project  YES or  NO Dissertation/Thesis/Independent Study

YES or  NO Continuation/Renewal  YES or  NO Student Research Project

YES or  NO Is this a Protocol Change for previously approved project? If yes, submit a signed copy of this form with the changes bolded or highlighted.

Please provide additional information regarding your research on a separate sheet of paper.

4. In non-technical language, describe the purpose of the study and state the rationale for this research.

5. In non-technical language, describe the study procedures.

How will consent be obtained? How will instrument(s) be distributed/collected? Will compensation be provided? What is the suspected duration of subject participation? Etc.

6. Where will the research be conducted?

7. Describe what data will be recorded.

8. How will data be recorded and stored (that is will it be coded, anonymous, etc.)?

Note: Note: Must state that data will be stored for a period of time sufficient to meet federal, state, and local regulations; sponsor requirements; and organizational policies and procedures

*The Obesity Epidemic: Survey of Current Physical Therapy Trends in North Dakota*  
Sue Jenö, Alexis Barten, Kristi Just, Lori Perry, Cassie Seal

**IRB Proposal: University of North Dakota Exempt Certification Form**

*Research Involving the Use of Survey, Interview, Observational Procedures or Educational Tests*

**4. In non-technical language, describe the purpose of the study and state the rationale for this research.**

**The Problem/Rationale:** The American Obesity Association estimates that 127 million adults in the United States are overweight, another 60 million are obese, and 9 million are severely obese.<sup>1</sup> These figures alone make obesity a national health care crisis, but the fact that these numbers have and will continue to rise complicates matters even more. Add to the statistics that increased adiposity has been linked to adverse health effects such as hypertension, type II diabetes, asthma, orthopedic problems, impaired psychosocial behavior and the medical burden to society is magnified again. Colditz<sup>2</sup> estimates that the direct health care cost associated with obesity and obesity related impairments accounts for 7% of total health care costs in the United States.

**The Research:** It has been shown that improving the quality of life in individuals identified as overweight or obese involves a myriad of treatment interventions that includes numerous health care professionals working together to combat the health consequences of obesity.<sup>3</sup> The combination of increasing physical activity along with behavior and dietary therapy has been shown to be the most effective at reducing weight and improving the health risks associated with obesity.<sup>4</sup> Because obesity may limit specific aspects of physical function including aerobic capacity, balance, coordination, flexibility, and strength, this makes physical therapists uniquely qualified to treat patients who are obese. Physical therapists have intensive training in exercise prescription that takes into consideration the individual's previous level of activity, interests, time constraints, and physical impairments. For these reasons, the American Physical Therapy Association believes that physical therapists should be in a leadership role among other health care providers in providing patient education and instruction regarding physical activity.<sup>5</sup> A major obstacle is the lack of third party payment for preventive services provided by physical therapists and other health care professionals. Unless insurance coverage includes a prevention or wellness program component, covered physical therapy reimbursement is limited for patients with a primary diagnosis of obesity.<sup>5</sup>

**The purpose:** The purpose of this study is to determine current practice trends among physical therapists in the state of North Dakota relating to patients who are overweight or obese. Through a detailed survey we hope to gain insight into the attitudes and knowledge level of physical therapists in regards to the treatment of individuals who are obese. In a similar survey of physicians and other health care providers, Galuska et al found that only 42% of adults who are obese are advised to lose weight, whereas another survey reported by the Center for Disease Control found that in North Dakota 88.8% of adults surveyed had not received any medical advice regarding weight management.<sup>6,8</sup> Another survey of physicians found that those who had received further medical training

in the treatment of obesity felt more comfortable and competent in addressing obesity and were also more likely to make sure their patients received appropriate assessment and intervention.<sup>9</sup> No similar research has been done for physical therapists. Gostic<sup>4</sup> concludes that in order to effectively deal with the obesity epidemic, health care professionals including physical therapists need to be more consistent in addressing the issue of obesity in patients. Our goal is to evaluate current practice trends and attitudes and to recognize if the need for further advocacy and promotion exist for physical therapists in treating obesity and also whether there is a need for further educational training to ensure the comfort and competency level of physical therapists involved in treating obesity.

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**5. In non-technical language, describe the study procedures.**

1. A short 10-15 minute survey will be mailed from the UND School of Medicine and Health Sciences, Department of Physical Therapy. Please see the attached survey.
2. Mailing addresses for all physical therapists (506) licensed in the state of North Dakota have been obtained through the North Dakota Board of Physical Therapy.
3. A letter and a copy of the survey will be sent to 300 licensed physical therapists in the state of North Dakota asking him/her to complete the survey. The physical therapists will be chosen randomly from a list provided by the North Dakota Board of Physical Therapy. Please see attached letter. A return metered envelope will be included.
4. Consent will be mentioned in the letter and at the bottom of the survey. The letter will state: "By completing and returning the survey you are consenting to the release of any information you provide to us." The survey will state: "By returning this survey you are giving consent for all information gathered from its contents to be used as a part of a research study being conducted at the University of North Dakota School of Medicine and Health Sciences, Department of Physical Therapy. All responses from this survey will be kept confidential."
5. Return envelopes will be numerically coded to track returned responses so that reminder letters are only sent to physical therapists that have not completed the survey. The number codes will be used only for this purpose and destroyed following the closing date of the survey.
6. Reminder postcards will go out approximately 2 weeks following initial mailing to remind participants to complete the survey if they have not already done so.
7. If we do not have a total of 100 (~33%) returned surveys by August 12, 2006, another round of letters and surveys will go out to the remaining physical therapists who were not randomly selected to receive the initial mailing (206 therapists). The final closing date would then be September 1, 2006.
8. All submitted data collected no later than September 1, 2006, will be analyzed through SPSS 11.0 software.

**6. Where will the research be conducted?**

The research will be conducted through a survey mailed to physical therapists that are licensed in the state of North Dakota. Data will be analyzed at the UND School of Medicine and Health Sciences.

**7. How will data be recorded and stored?**

Returned surveys will be collected and data analyzed through SPSS software and saved electronically. Returned surveys and results will be kept in a locked cabinet within the Department of Physical Therapy. This information will be kept for three years and shredded at the end of that time. Following completion of data

collection and analysis the electronic file as well as the list of physical therapist's addresses will be deleted.

**8. Describe the nature of the subject population and the estimated number of subjects.**

Our goal is to ascertain a survey of current physical therapy practice trends regarding the treatment of patients who are overweight or obese. As provided by the North Dakota Board of Physical Therapy, our subjects include a sample of 300 of the 506 physical therapists who are currently licensed in the state of North Dakota.



## APPENDIX C

**UND** DEPARTMENT OF PHYSICAL THERAPY  
UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

July 25, 2006

To North Dakota Licensed Physical Therapist:

You have been randomly selected to receive this survey because you are a licensed physical therapist in the state of North Dakota. Because we are sending this survey to a limited number of people, your participation is greatly appreciated. This research project is in partial fulfillment of the requirements for the degree of Doctor of Physical Therapy from the University of North Dakota. This research is being conducted under the supervision and guidance of our physical therapy professor, Susan Jenó, PT, PhD.

This is a preliminary study to determine the current physical therapy trends relating to patients who are overweight or obese. Obesity is becoming a national health care crisis as the American Obesity Association estimates that 127 million adults in the United States are overweight, another 60 million are obese, and 9 million are severely obese. These statistics are high and are continuing to rise along with the associated health care costs in treating patients for weight management and the complications associated with being overweight or obese. This study will benefit the physical therapy profession by recognizing if the need for further advocacy and promotion exists for weight management interventions provided by physical therapists.

Your participation in this study is voluntary and no penalties will result from refusal to participate. If you do choose to complete this survey, it will take approximately 15 minutes of your time and there is no cost to you. Please return the completed survey in the envelope provided no later than August 12, 2006. Envelopes will be coded with a four-digit number; this is used for tracking responses and will not be used in our data analysis in any way. Any identifiers will be destroyed after all data has been collected. Little risk is involved in filling out this survey. All returned surveys will be kept confidential and stored in a locked cabinet within the University of North Dakota Department of Physical Therapy. Only ourselves as the researchers, Susan Jenó our advisor, and people who audit Institutional Review Board procedures will have access to the data. Stored hard copies of the surveys and results will be kept for three years and shredded at the end of that time. All electronic files will be deleted following completion of data collection and analysis.

We invite and encourage you to complete this survey regarding physical therapy evaluation, identification, and treatment of obesity in North Dakota. By completing and returning the survey you are consenting to the release of any information you provide to us. This letter is your copy of the consent form.

If you have questions or concerns about the research or wish to be informed of the results, please contact Susan Jenó at (701)777-2831 or one of the researchers listed below. If you have any other questions or concerns, please call Research Development and Compliance at 777-4279.

Sincerely,

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