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## Physical Therapists' Role in Health Promotion as Perceived by the Patient: A Descriptive Study

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Physical Therapists' Role in Health Promotion as Perceived by the  
Patient: A Descriptive Study

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March 13, 2013

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## Abstract

**Background and Purpose:** Physical therapists have acquired the skills and knowledge to discuss and advise patients about personal health behaviors (PHB). Research has shown that PTs believe it is their role to discuss PHBs with patients yet there are barriers which keep them from doing so consistently. There is a lack of evidence regarding what patients believe physical therapists' role is in regards to health promotion. The purpose of this study was to determine if patients believe that PTs should advise them on PHBs.

**Methods:** Three outpatient PT clinics received 100 surveys to distribute to patients who met the inclusion criteria. Participants responded to questions about 4 PHBs; physical activity, fruit and vegetable consumption, smoking and healthy weight; their stage of change for each behavior and their belief about the role of PTs was recorded for each health behavior.

**Results:** One hundred surveys were analyzed using SPSS. The majority of the respondents agreed that PTs should advise them on PA levels (88.0%). Most respondents (70.7%) reported that their PT discussed physical activity (PA) with them. Few respondents (4.0%) stated their PT discussed fruit and vegetable (F&V) consumption with them. Some (28.3%) of the respondents believed PTs should advise them on F&V

consumption; however, 54.5% were neutral on this subject. One tenth (10.4%) of the respondents were smokers and 9.1% of them reported their PT discussed smoking cessation with them. Self determined body mass index fell in the overweight category for 46.9% respondents; only 8.1% reporting their PTs discussed maintaining a healthy weight. The majority of respondents (75.8%) believed that PTs should advise patients about maintaining a healthy weight. Based on their determined stage of change, 58.1% of participants were engagers in physical activity, 58.4% for fruits and vegetables consumption, 91.8% engaged in smoking cessation and 54.1% for maintaining a healthy weight.

**Conclusions:** A discrepancy was found between the percent of patients who reported their physical therapist addressed their PHBs and the percent of patients who believed their PT should advise them about PHBs. The study results suggest that patients may be expecting and open to their physical therapist discussing PHBs during their PT sessions.

The undersigned certify that they have read, and recommended approval of the research project entitled ...

PHYSICAL THERAPISTS' ROLE IN HEALTH PROMOTION AS PERCEIVED  
BY THE PATIENT: A DESCRIPTIVE SURVEY

Submitted by

Jessica Berglund  
Erin Poepping

...in partial fulfillment of the requirements for Doctor of Physical Therapy Program

Primary Advisor



Date:

4-23-13

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## Introduction

As the profession of physical therapy progresses, the American Physical Therapy Association's (APTA) Vision 2020<sup>1</sup> document calls for physical therapists to strive toward becoming “practitioners of choice to whom consumers have direct access.” Direct access is defined as “the legal right to directly access a physical therapist across the lifespan for the diagnosis of, interventions for, and prevention of impairments, functional limitations, and disabilities related to movement, function and health.”<sup>1</sup> Direct access indicates that PTs may be the first health care provider a patient encounters during an episode of care. The imperative for PTs to address and promote health and wellness with each patient is even greater now as patients may access physical therapists without consultation with a physician. Not only are physical therapists educated in health and wellness promotion, but PTs also have the practice and professional guidelines required to address healthy behaviors with their patients.<sup>2</sup> The Guide to Physical Therapist's Practice<sup>3</sup> states PTs are capable of intervening for the “restoration, maintenance, and promotion of optimal physical function” as well as “optimal wellness and fitness and optimal quality of life as it relates to movement and health.”

It is unknown what expectations and perceptions patients have about physical therapists addressing personal health behaviors, such as physical activity, maintaining a healthy weight, smoking cessation, and the consumption of fruits and vegetables.

Previous research has briefly investigated other health care professionals, such as general practitioners, addressing personal health behaviors and how patients have responded; yet

there is a lack of evidence about physical therapists and their patients' perceptions. The lack of research on this particular topic has prompted the present research study to explore the expectations patients may have about physical therapists. Therefore the purpose of this study was to determine if patients believe that physical therapists should advise them on personal health behaviors (PHB) in the areas of physical activity, smoking cessation, fruit and vegetable consumption and maintaining a healthy weight.



## Review of Literature

### *Physical Activity*

#### **Introduction**

Physical activity is an important aspect of a person's life that helps individuals maintain a healthy lifestyle as well as a high quality of life. The World Health Organization<sup>4</sup> (WHO), defines physical activity as "any bodily movement produced by skeletal muscles that requires energy expenditure." The Center of Disease Control and Prevention<sup>5</sup> (CDC) recommends the minimum amount of physical activity required to prevent disease for adults age 18-65 is to participate in 150 minutes of moderate intensity exercise per week. However, the United States (US) population has continued to trend toward decreased physical activity and subsequently, poor health. Currently 35.7% of adults in the US are obese and 80% of adults are not meeting the recommended guidelines for physical activity.<sup>6,7</sup> Physical inactivity is a major health issue in the US leading to approximately 20% of all deaths in combination with obesity.<sup>8</sup> Given these data surrounding physical inactivity, health care providers must promote increasing physical activity and other healthy behaviors with patients. Physical therapists (PTs), as part of the health care team, can step in to play a prominent role in promoting physical activity. Although it is clear that PTs are capable of prescribing the appropriate amount of physical activity for all patients, it is unclear if patients expect physical therapists to address the promotion of physical activity with them.

### **Role of the Physical Therapist**

A physical therapist's role, as described by the Guide to Physical Therapists Practice<sup>3</sup>, is to restore, maintain, and promote optimal physical function as well as optimal wellness, fitness, and quality of life. Physical therapists have the education, patient interaction time, and rapport needed to help patients become more physically active. Accredited physical therapy programs include education about disease prevention, health promotion, fitness and wellness in their curriculum. Graduates are expected to possess expert level knowledge in exercise and fitness, as well as skills for exercise prescription and implementation across a variety of settings.<sup>2</sup> Specifically in the area of exercise prescription and fitness, physical therapists are very knowledgeable about exercise testing, intensity and adaptations for various disease processes and conditions.

American Physical Therapy Association (APTA) physical therapist members from the state of Minnesota were surveyed about their knowledge, beliefs, and practices of promoting healthy behaviors with patients.<sup>9</sup> The evidence suggested that 90% of PTs agreed that it is within the role of a physical therapist to promote healthy behaviors, and 100% of the PTs believed that they should promote physical activity. Other physical therapists and physical therapy students surveyed by Johnson<sup>10</sup> also agreed that PTs play a significant role in health promotion and wellness. Clearly, PTs claimed it was their role to promote physical activity. Due to the education completed, expert knowledge and skills, it is certainly within the scope of practice of physical therapists to promote

increased physical activity levels with patients and it could be said that it is essential for PTs to intervene with patients when it comes to addressing physical activity levels.<sup>3</sup>

### **Physical Therapists' Practice**

In consideration of the described role of physical therapists, all PTs should advise their patients on the recommended physical activity levels required to maintain optimal physical health. Despite the primary reason why patients seek treatment from a physical therapist or what degree of physical health a person is in, PTs must play a crucial role in discussing and promoting physical activity with all of their patients. The research however, shows that discrepancies exist between the stated role of physical therapists and their actual practice habits. In 2004, Rea et al<sup>11</sup> determined that physical therapists addressed increasing physical activity levels with patients only half of the time as perceived by the therapist. Physical therapists also believed they had the most confidence in helping patients increase their physical activity levels when compared to promoting other healthy behaviors such as nutrition or psychological well-being. Although increasing physical activity was the most frequently practiced health promoting behavior by PTs, they advised patients at varying degrees and at lower than desired levels as determined by the goals of Healthy People 2010.<sup>11</sup> Two other studies<sup>9, 10</sup> revealed when physical therapists were surveyed, over 90% of the PTs reported addressing physical activity levels with patients. However it is unknown how frequently the PTs addressed physical activity levels for each individual patient. In contrast, Gahimer<sup>12</sup> reported that

outpatient PTs regularly provided patient education about the patient's illness and their home exercise program; however the PTs rarely discussed information about the patient's general health, such as physical activity levels.<sup>12</sup> All of these results demonstrate that despite the fact that physical therapists have the education and skills to promote and prescribe appropriate levels of physical activity, PTs do not utilize their expertise consistently.

Shirley et al<sup>13</sup> examined the knowledge, confidence, role perception, barriers, feasibility, and counseling practice of PTs and PT students regarding the promotion of non-treatment physical activity for health and wellness promotion.<sup>13</sup> The results indicated that PTs/PT students believed that physical activity prescription for health promotion should be part of their role in patient care and that they would be confident in this role with patients. Regardless of this overwhelming belief, there proved to be barriers to promoting physical activity including lack of time, counseling skills, reimbursement in promoting physical activity, and the feeling that it would not change the patient's behavior.<sup>13</sup> Other physical therapists who were surveyed<sup>9,10</sup> reported that lack of time, sensitivity to the topic, uncertainty about the topic, lack of patient behavioral changes and lack of reimbursement were the main barriers to promoting physical activity and other healthy behaviors. On the other hand, additional results reported that the main facilitator of addressing physical activity levels was patient interest.<sup>9,10</sup> Yet, patients do not all have the same interest in physical activity, which is why physical therapists must consistently address physical activity levels with all patients. Ideally, all physical therapists would encourage improvement and maintenance of physical activity for the promotion of

disease prevention and optimal health. As the study by Shirley et al<sup>13</sup> illustrated, therapists may have believed it to be their role but they did not act on this belief.<sup>13</sup>

It is well known that physical activity is an important health behavior however, it is not well known what the most effective way is to advise patients on increasing physical activity levels. Evidence is inconclusive about ways to approach this subject with patients yet some discussion with patients seemed to be better than not addressing the issue at all.<sup>14,15</sup> In an article by Peterson,<sup>16</sup> the Five A's of assess, advise, agree, assist and arrange were discussed. Primary care physicians indicated they do not always have the time to implement the Five A's with their patients. Peterson<sup>16</sup> suggested that a team approach with nursing could assist to minimize this barrier. It may also be beneficial to include physical therapists into the team approach as PTs typically see patient's for at least 30 minutes making it more feasible for them to discuss all of the Five A's pertaining to increasing physical activity. Peterson<sup>16</sup> suggested an effective way to communicate with patients is to first assess what patients' current level of physical activity is as well as social support and resources available to them. From there, patients can be advised on the specific physical activity guidelines recommended for them. The next step she suggested was to find a compromise between care provider and patient about the ways they envision achieving their physical activity goals. It was then important to provide patients with literature and community resources so they were able to accomplish their goals independently. The final step in her recommendation was to arrange for follow-up visits.<sup>16</sup> Comparably, Carroll<sup>17</sup> examined how general practitioners (GP) used the Five A's: ask, advise, assess, assist, arrange, when discussing physical

activity. The topic of physical activity was discussed in 37% of the visits recorded and “ask,” was used in 91% of those visits. However, the answers provided by the patients were often insufficient for the GP to “advise” any further interventions. Also, the authors found that the mention of the physical activity guidelines set by the ACSM was nearly absent in all sessions.<sup>17</sup> Either of these plans would work well with the care provided by a physical therapist as patients are typically treated by PTs for multiple sessions. Naturally, follow-up visits are scheduled to address a patient’s physical impairments and physical activity behaviors can be discussed during the subsequent visits as well.

Although there is mixed evidence about the effectiveness of counseling patients, it is imperative that health care providers reach out to all patients to provide primary prevention of disease, rather than intervene with exercise after disease has been established.<sup>18</sup> Recently, Jette and Jewell<sup>19</sup> conducted an observational study about the use of quality indicators in physical therapy. Quality indicators included but were not limited to assessing a patient’s blood pressure, determining a patient’s cardiovascular response to exercise, and reviewing a patient’s physical health status. The results determined 11% of PTs were measuring patients’ blood pressure and less than 8% of PTs were recording a patient’s cardiovascular response to physical activity. However, nearly 90% of physical therapists reviewed physical health status with patients.<sup>19</sup> As physical therapists continue to seek direct access, PTs must be able to treat the indicated pathology as well as provide primary or secondary prevention services. The literature illustrates that the promotion of physical activity is widely but inconsistently addressed with physical therapy patients, and it is important for the physical therapy profession to increase the quality of care

provided to patients by increasing the frequency of addressing physical activity with patients.

### **Patient Knowledge and Beliefs**

Although the research has documented the frequency, barriers, and facilitators that existed among PTs in promoting physical activity, it is not well understood what patients believe the role of a physical therapist to be in health promotion. The literature is limited on what patients expect of their physical therapist in terms of addressing physical activity. This lack of understanding may contribute to the barrier of how physical therapists perceived they were practicing and how they actually practiced. Furthermore, other health care providers such as general practitioners also have the knowledge to assist patients in maintaining a healthy lifestyle and improving physical activity levels, yet it is not well known if patients expect their GP to address physical activity and health promotion either. Thus, there is a need to better understand what patients expect of physical therapists in terms of promoting physical activity and how they perceive the action of their PT addressing increasing physical activity levels.

Based on qualitative studies,<sup>19,20</sup> evidence illustrates that patients felt it was appropriate for their general practitioners to promote healthy behaviors such as: fitness, healthy weight, smoking cessation and alcohol consumption. According to Wallace and Haines<sup>20</sup>, 72% of patients felt their general practitioner should be interested in their physical activity levels. However, due to the time constraints GPs may practice under

while seeing countless patients per day they have limited time to thoroughly address personal health behaviors with each patient.<sup>20</sup> It is therefore important for other health care providers, including physical therapists, to take action in the role of health promotion. Patients may also expect a PT to address their physical activity levels, especially if the patient is seeking PT through direct access and have not had contact with their primary care provider. As noted by Jette and Jewell<sup>19</sup> PTs must carry out primary and secondary prevention and wellness screening in addition to providing treatment for the physical therapy diagnosis.<sup>19</sup> Physical therapists possess a wealth of knowledge about the human body as well as the effects and benefits of physical activity needed to advise all patients about how to safely increase their levels of physical activity. For that reason, PTs need to take advantage of their knowledge and patient interaction time to advise and assist patients in increasing their physical activity levels.

In many settings, physical therapists have the opportunity to see patients several days per week, which allows rapport and trust to be built between patient and therapist. With added trust, physical therapists have the ability to influence patients to make changes in their lifestyles, specifically in terms of physical activity. Evidence showed that with direct access, patients developed a bond with their physical therapist as their relationship was enhanced over time.<sup>21</sup> Increased knowledge about the patient was speculated to reduce health care costs and increase patient compliance, which indicated that patients may be more likely to adhere to the advice of the PT and increase their level of physical activity. Discussion of physical activity guidelines with each patient may also increase public awareness about the role of PTs in primary prevention, allowing them to



be a resource in promoting healthy behaviors. Physical therapists are able to address physical activity levels for patients who may be living with a variety of conditions and impairments. Due to the robust education physical therapists receive, PTs are able to incorporate the entire patient and provide a tailored, holistic and appropriate exercise program for each patient.<sup>2</sup>

Though PTs are skilled at exercise prescription and physical activity promotion, the research is uncertain as to the optimal method to administer this advice and it is unknown how receptive patients are to advice about personal health behaviors. In a study conducted by Swinburn et al,<sup>22</sup> general practitioners were trained in exercise prescription and instructed to give written handouts to patients with the specific recommendations for physical activity. Based on the questionnaire patients filled out, the GPs were able to prescribe the appropriate type and amount of exercise; however they had difficulty in the area of exercise intensity, especially for patients who previously had a sedentary lifestyle.<sup>22</sup> Further, results from a national survey indicate that physicians addressed physical activity with 28% of their patients. If a patient received advice about physical activity less than half of those patients received further assistance with developing an exercise program and most did not receive follow up support. It was demonstrated that following up with a patient and assisting with developing an exercise program were effective methods for advising patients about physical activity as 40% of patients who did receive the more involved counseling were more likely to meet the physical activity guidelines.<sup>23</sup> Other research determined that 56% of GPs have a difficult time addressing health promotion with their patients due to their heavy workload and time constraints.<sup>24</sup>

Based on the research described, it is important for physical therapists to use verbal and written methods of addressing physical activity and it is equally important for PTs to follow up with the patient about their physical activity levels during the multiple patient treatment sessions. This will allow for PTs to create a specialized physical activity programs for each patient.

The use of fitness testing, an objective method used to assess an individual's level of fitness, could also be used by a physical therapist to determine how patients respond to physical activity. The data from the fitness tests can then be used to prescribe the appropriate intensity and progression of physical activity for patients. Through educational preparation, PTs are equipped with the skills to analyze and prescribe exercise programs throughout the lifespan, and are able to address strength, aerobic capacity and flexibility. Graduates from a physical therapy program are also able to screen patients for possible differential diagnoses or comorbidities such as diabetes, hypertension, cancer or pulmonary issues and are able to provide primary and secondary prevention interventions with patients.<sup>2</sup>

Since both GPs and PTs can prescribe exercise programs for patients, it is important to understand how patients respond to various prescription methods and whether these methods are successful. When GPs advised patients using a written exercise prescription along with an explanation, the GPs felt it was more distinct for patients than verbal explanations, and anticipated the patients would be more likely to adhere to the prescription.<sup>22</sup> Research studies have also shown that the verbal advice

given to patients has been beneficial in promoting increased physical activity levels.<sup>22, 25</sup> Lewis and Lynch<sup>25</sup> looked at the effects of physical activity advice on exercise habits. Physicians involved were instructed to first “ask” about the patient’s exercise habits and probe further as necessary.<sup>25</sup> The next step was to “assess” if the patient was performing the appropriate amount of exercise for them and finally to “advise” the patient.<sup>25</sup> For research purposes, the physicians were told that adequate physical activity was about 500kcal/week or 2 hours of walking/week. When advising patients, physicians were told to do so “appropriately” so there was no protocol to follow. The patients were advised to maintain or increase their level of physical activity. The study was initiated with similar control and intervention groups at baseline, and the change in time exercised and the frequency of exercise were used as outcome measures. The control group did not receive the “ask, assess and advise” protocol whereas the intervention group received this 2-3min discussion with their physician. At baseline 79% of the intervention group was participating in some form of exercise and 78.4% of the control group. At follow up 89.1% of the intervention group was exercising compared to 80.2% of the control group ( $p=.04$ ). When patients were asked the question “If my doctor advised me to exercise, I would follow his/her advice,” 92% of patients agreed or strongly agreed with this statement.<sup>25</sup> These results support the notion that if physical therapists follow the “ask, assess and advise” protocol and take only 2-3 minutes to discuss maintaining or increasing physical activity levels with patients, then patients may be likely to make behavioral changes.

In many health care settings, physical therapists treat patients of various ages with various physical conditions. Physical therapists frequently treat older adults in all practice settings. It is important for physical therapists to address physical activity levels with older adults because research has shown that physical activity is very important for older individuals as it helps reduce falls, reduces the risk of developing dementia, decrease blood pressure and increases overall activity capacity.<sup>26</sup> Research has also shown that physical inactivity is a major risk factor for multiple chronic diseases. Physical therapists can step in and address physical activity levels which can help decrease a patient's risk for further disability.<sup>27</sup> As people age, they typically become less active in their daily lives. This physical inactivity may lead to weight gain and cause greater stress to the joints of the body. Patients who are in pain also tend to decrease their physical activity because they feared it would make their pain worse or even exacerbate their current condition.<sup>28</sup> Once more it is reiterated that PTs are equipped with the skills and knowledge to provide patients with an individualized exercise program tailored to their physical impairments, pre-existing conditions and co-morbidities, and current physical activity level. Exercise programs that are individualized will help to ensure that each patient is safe while exercising and may also endorse compliance and maintenance. Individualized assessment and advice for exercise programs may motivate some patients to adopt new healthy behaviors.

In conclusion, physical therapists complete extensive education and obtain the skills and knowledge to provide appropriately tailored exercise programs for individuals with multiple health considerations. Although the literature illustrates that the majority of

physical therapist believed it is their role to address physical activity levels with patients, most physical therapists were not consistently discussing physical activity with all patients. Physical therapists have identified barriers and facilitators to advising patients about increasing physical activity levels; however as direct access to PTs progresses all physical therapists must consistently perform primary and secondary screening procedures during the evaluation in order to ensure the highest quality of care for patients. Studies have shown patients respond to their general practitioner and primary physician when provided verbal or written advice about the recommended physical activity guidelines. Additionally, the research confirmed GPs do not have ample time to provide a thorough discussion with patients therefore PTs are in the ideal position to spend time addressing physical activity with patients upon initial evaluation and at subsequent treatment sessions. As previously described, patients believed their GP should be interested in their physical activity levels which may also be expected of physical therapists. It is the role of physical therapists to promote the optimal physical function of each patient, and addressing physical activity levels is an essential component of fulfilling that role.

### ***Maintaining a healthy weight***

#### **Introduction**

Maintaining a healthy lifestyle consists of managing several aspects of one's life, including a healthy weight. Currently, the most widely used assessment to determine if a

person has a healthy body weight is Body Mass Index. Body mass index (BMI), is the assessment of “weight relative to height and is calculated by dividing body weight in kilograms by height in meters squared.”<sup>27</sup> The specific categories of BMI are as follows: underweight is less than 18.5 kg/m<sup>2</sup>; 18.5-24.9 kg/m<sup>2</sup> indicates a healthy weight; 25.0 to 29.9 kg/m<sup>2</sup> is considered overweight; greater than 30.0 kg/m<sup>2</sup> indicates obesity. Obesity is further categorized into class I, II, and III with BMIs ranging from 30.0-34.9 kg/m<sup>2</sup>, 35.0-39.0 kg/m<sup>2</sup>, and greater than 40.0 kg/m<sup>2</sup> respectively. According to the American College of Sports Medicine (ACSM)<sup>27</sup>, maintaining a BMI of >30 kg/m<sup>2</sup> increases the risk of hypertension, hyperlipidemia, coronary disease and mortality.<sup>27</sup> Similarly, the Center for Disease Control and Prevention<sup>6</sup> (CDC) states that obesity is related to heart disease, stroke, type II Diabetes, and some cancers.<sup>6</sup> Despite these known adverse effects, the percent of adults in the United States who are obese has risen to 35.7%, and obesity has become a national epidemic.<sup>6</sup> With an increased obesity rate comes the increased need of healthy weight management. It is the obligation of health care professionals, including physical therapists, to assist patients in attaining their optimal health which includes maintaining a healthy weight. It is unknown, however, if patients expect their physical therapist to address the personal health behavior of maintaining a healthy weight.

### **Role of Physical Therapist**

Physical therapists, as defined by the APTA and the Guide to Physical Therapy Practice<sup>1,3</sup>, are professionals expected to promote health and reduce risk of mortality for their patients. Therefore, it could be presumed that physical therapists are obligated to assess a patient's BMI to determine if he or she is at risk for disease. Furthermore, physical therapists should be completing a systems review with each patient which involves screening a patient's cardiovascular system for risk of disease.<sup>3</sup> Physical therapists have the ability and knowledge to assess BMI, and when two different groups of physical therapists were surveyed over 95% of PTs reported they believed it was their role to address BMI and a healthy weight with patients; however less than 75% of PTs reported doing so in their practice.<sup>9,10</sup> Shirley<sup>13</sup> illustrated that physical therapists and student PTs believed that health promotion is part of a PT's role and the participants indicated they have confidence in promoting health.<sup>13</sup> The physical therapists and students surveyed stated that the most feasible way to promote health would be integrated brief counseling sessions added into usual treatment sessions, followed by distributing resources.<sup>13</sup> Sensitivity to the topic about maintaining a healthy weight was reported as one of the main barriers to addressing weight management with patients.<sup>9</sup> Although it is a sensitive topic, it has been documented that physical therapists have a neutral attitude toward people who are obese. This same research showed that PTs have an appropriate knowledge base about obesity including that an unhealthy weight or obesity is often the result of lack of physical activity and poor nutrition.<sup>29</sup> The scope of practice for physical therapists clearly includes addressing BMI and weight management with patients. Therefore physical therapists must fulfill the role of promoting the overall health of

patients and thus all physical therapists should address maintaining a healthy weight with each patient.

### **Physical Therapist's Practice**

Although BMI is one of the most common methods used to assess a patient's weight, it does not seem that all health care providers, including PTs, are calculating BMI or addressing the maintenance of a healthy weight with their patients. Several studies have examined how frequently BMI is calculated and if patients were counseled about healthy weight in the primary care setting. Russell<sup>30</sup> analyzed 439 primary care visits between physicians and patients with chronic diseases.<sup>30</sup> Health promotion was discussed in 53% of the visits, and diet and weight management were the most frequently promoted health behaviors.<sup>30</sup> Another group of researchers from the Counterweight Program assessed 141 general practitioners and 66 nurse practitioners (NP) from 40 primary care practices using structured interviews and physician's self-report.<sup>31</sup> Eighty three percent of GPs and 97% of NPs stated that weight was discussed with patients who were obese, however 15% of GPs spent up to 10 minutes counseling the patient about his or her weight. Referrals for patients to seek external resources and support were reported in 1% of the cases and in 100 randomly selected medical records 64% had a calculated BMI on file.<sup>31</sup> Comparably, Brotons et al<sup>24</sup> found that general practitioners felt it was difficult to provide any health promotion to patients because of their heavy workload and lack of time.<sup>24</sup> With this noted lack of time and energy spent from general practitioners on addressing a patient's weight it is important that other health care providers, such as



physical therapists, use their knowledge and skills to address personal health behaviors with each patient.

Arterburn<sup>32</sup> found similar results after reviewing medical charts for 3.7 million adults and 1.2 million children from ten different health care systems in the United States.<sup>32</sup> The frequency of a calculated BMI present in an individual's medical chart ranged from 28%-88% for adults and 21%-28% for children. Arterburn's findings illustrated the evident lack of consistency that exists across the nation when it comes to calculating BMI.<sup>32</sup> Shaika<sup>33</sup> explored if automatic calculation of BMI would increase the frequency of body weight and nutrition counseling.<sup>33</sup> The results indicated that automatic calculation is insufficient for weight management improvements as the assessment of BMI, weight status, and physical activity did not increase.<sup>33</sup> For physical therapists in the outpatient setting, if BMI has not been automatically calculated for the patient, PTs can use the objective measure of BMI to begin the discussion about maintaining a healthy weight with patients. As previously noted, the profession of physical therapy is progressing to "autonomous practitioners to whom patients have unrestricted access."<sup>1</sup> With added autonomy to the practice of physical therapy, physical therapists now have the education and knowledge to screen patients for primary and secondary prevention of disease. Along with prevention and screening, physical therapists have the responsibility to address personal health behaviors that could be impairing the patient's optimal health.

In the practice of physical therapy, Rea et al<sup>11</sup> conducted a study examining the frequency and confidence PTs possess in health promotion behaviors.<sup>11</sup> In terms of

weight management, the authors determined that physical therapists were addressing maintaining a healthy weight 19% of the time with patients. Positive correlations were found between the physical therapists' level of confidence in addressing maintaining a healthy weight and frequency of addressing it; thus if a PT is does not have the confidence to advise patients about maintaining a healthy weight then they are less likely to discuss this with patients.<sup>11</sup> Further research also established that less than 4% of physical therapists observed were assessing BMI with greater than 90% percent of their patients.<sup>19</sup> As a significant amount of the population is now categorized as overweight or obese it is important for physical therapists to be confident in addressing maintaining a healthy weight with patients in addition to providing physical therapy interventions because a growing portion of patients will benefit from advice about weight maintenance.<sup>6</sup> The frequencies reported about how often PTs address maintaining a healthy weight with patients were less than desirable for the profession of physical therapy, especially with the goal of becoming autonomous practitioners.

If physical therapists and other primary care practitioners are not adequately addressing personal health behaviors it could be said that health care practitioners are only contributing to the obesity epidemic. As previously noted, a high BMI is associated with an increase risk of hypertension, hyperlipidemia, coronary disease and mortality.<sup>6,27</sup> However several studies support the idea that maintaining an unhealthy weight and high BMI is also associated with various other co-morbidities. One author<sup>34</sup> studied 7867 adults aged 51-61 from 1992 to 1996 and used a logistic regression to determine the relative risk for health decline and new physical difficulties when related to obesity.<sup>34</sup>

Overweight and obesity were independently associated with health decline and new physical difficulties. Interestingly, the results also showed that regular physical activity reduced the overall risk of health decline, even for the obese population.<sup>34</sup> Physical therapists often treat people who have experienced a decline in health, and most have new and recurring physical difficulties. It is the duty of physical therapists to help patients achieve their optimal physical function and that may include advising a patient about weight management. Addressing the risk and benefits of maintain a healthy or unhealthy weight is education all physical therapists can provide to their patients, and it may only take a small amount of discussion to motivate a patient to make behavior modifications. Similarly, Davison et al<sup>35</sup> and Meng<sup>36</sup> determined that functional limitations and activities of daily living (ADLs) were both directly affected by bodyweight.<sup>35, 36</sup> Davison<sup>35</sup> found that women with a BMI of 30 or greater were twice as likely to report functional limitations, and men with a BMI of 35 or greater were 1.5 times more likely to report functional limitations.<sup>35</sup> Meng<sup>36</sup> illustrated that participants who had a normal weight experienced statistically significantly less worsening of ADLs when compared to those who were overweight or obese.<sup>36</sup> This research is pertinent to physical therapists due to fact that PTs treat the physical impairments that cause functional limitation in a person's daily life. Davison<sup>35</sup> and Meng<sup>36</sup> pointed out that being overweight or obese, was the impairment inhibiting participants from engaging in daily activity.<sup>35, 36</sup> Consequently, physical therapists must then address and assess body weight with patients in order to assist each patient in performing their functional duties of daily life.

### **Patient Knowledge and Beliefs**

As physical therapists continue to gain autonomy and direct access to patients, it is imperative for physical therapists to be aware of what patients expect and perceive when seeking care from a physical therapist. To provide the highest quality care to their patients, it will be necessary for physical therapists to determine the expectations patients have. Utilizing information about the perceptions patients have will allow health care professionals in a direct access or primary care setting to increase effectiveness of treatment and improve patient outcomes.<sup>37</sup> The literature has yet to explore patient's perspectives about physical therapists addressing personal health behaviors, such as maintaining a healthy weight.

Patients possess varying degrees of knowledge and beliefs about body weight. Willis et al<sup>38</sup> designed a quantitative descriptive research study and used questionnaires given to a large sample of community dwelling adults.<sup>38</sup> The results dictated that a person's self perceived BMI differed greatly from his or her measured BMI, which indicated that people were unaware of the fact that they may be maintaining an unhealthy weight. If a person was unaware of their BMI, they were most likely not aware of the increased risks associated with a higher BMI.<sup>38</sup> Harris<sup>39</sup> also illustrated that people's perceptions lead them to under recognize overweight and obese body weights.<sup>39</sup> Harris used pictures of male and female adults to construct body size guides so patients were able to visualize the BMI categories. They administered body size guides to a sample of

400 adults to determine if people recognized underweight to class III obesity body sizes. The results indicated that people failed to recognize overweight females and misinterpreted overweight males as normal weight; obesity was also unrecognized as such until the picture illustrated a higher class of obesity. Harris also indicated that correctly recognizing the categories was influenced by the subject's gender and his or her own weight status.<sup>39</sup> The results of the two studies demonstrates the lack of knowledge and awareness patients may have about body weight. Therefore, it is important for PTs to address the health risks associated with being overweight or obese and the benefits of maintaining a healthy weight. PTs are also able to advise patients about the proper initiation and progression of exercise in order for patients to begin managing their own body weight, however it is undocumented if patients expect their PT to address their personal health behaviors.

Although patient perspectives about PTs addressing personal health behaviors has not been described in the literature, the perspectives patients have about physicians addressing maintaining a healthy weight is well researched. The results from a study conducted by Wallace and Haines<sup>20</sup> illustrated that over 80% of patients felt their general practitioner should be interested in their body weight issues.<sup>20</sup> If patients expect their GP to take interest in their body weight, then patients may expect physical therapists to address body weight issues with patients as well. Greiner et al<sup>40</sup> evaluated the agreement between patients and primary care providers about whether weight and other related behaviors were discussed during a routine visit. The results showed that weight issues were discussed 61% of the time and indicated that physicians reported discussing weight

related issues more frequently than patients did. The authors concluded, “Physicians may be able to improve care for their obese patients by focusing discussions on specific details of diet and physical activity behaviors, and by clarifying that patients perceive weight-related information has been shared.”<sup>40</sup> The results of these studies may be transferrable to physical therapists, and reiterates the importance of providing patients with detailed and tailored information about how to make healthy lifestyle changes. The results also exemplify the idea that there is a discrepancy between patient perceptions and the practitioner perceptions that must be explored further in order to meet the needs of the patients.

Haskard et al<sup>41</sup> discovered that patient’s perceptions vary based on the communication provided by a physician. Physicians’ communication skills were assessed prior to and following a communication training intervention and the main outcome measures included patient satisfaction and perceptions of choice, decision-making, information, and lifestyle counseling. The results illustrated that patients reported a significant increase in the physician’s ability to counsel about weight loss, exercise, smoking cessation, and alcohol after engaging in communication training.<sup>41</sup> As previously noted, patient’s perceptions do not always match that of the health care provider when health behaviors are discussed. It is up to the health care provider to educate patients in a manner in which they understand and to provide adequate and useful advice to the patients. Physical therapists are in the ideal position to discuss maintaining a healthy weight with patients as body weight and physical function are closely associated.

Physical therapists can motivate their patients to change as well as intervene to treat the physical impairments patients present with.

In conclusion, addressing healthy behaviors such as maintaining a healthy weight is clearly identified by the majority of physical therapists as part of the role in treating patients. Physical therapists are not utilizing the knowledge and skill they possess to consistently address weight maintenance with all patients. As sedentary lifestyles and decreased physical activity continues to burden the population, calculating a patient's BMI and advising patients to increase their physical activity levels will become increasingly more important. Physical therapists will need to incorporate primary and secondary prevention and screening into the initial evaluation of all patients, but especially with those who are seeking treatment through direct access. Although there is a lack of research about patient's perception of physical therapists addressing personal health behaviors, the current evidence about patient's perceptions of physicians and GPs assessing patient's body weight issues may be transferable to PTs. Physical therapists have the education, skill, and opportunity to addressing maintaining a healthy weight with patients.

### *Smoking Cessation*

#### **Introduction**

The Center for Disease Control and Prevention<sup>42</sup> has determined that "cigarette smoking continues to be the leading cause of preventable death in the United States," as

nearly one in every five Americans die each year due to tobacco use. Approximately 45.3 million adults aged 18 and older smoke cigarettes, which is nearly 20% of the population. From 2000-2004, tobacco use cost the United States nearly \$193 billion in direct health care expenses and lost productivity. Smoking cigarettes causes an increased risk of coronary heart disease, stroke, several types of cancer, chronic obstructive lung disease, lower bone density, and hip fractures.<sup>42</sup> The role of physical therapists is to help patients reach their optimal physical function, and this should include screening patients for tobacco use.<sup>3</sup> The evidence suggests that physical therapists are not consistently screening patients for tobacco use. Also it has not been determined if physical therapy patients expect a PT to address tobacco use and smoking cessation.

### **Role of Physical Therapist**

The Center for Disease Control and Prevention indicated that in 2010, 19.3% of U.S. adults were current cigarette smokers, which are approximately 3 million fewer smokers than compared to 2005 when 20.9% of the population smoked.<sup>42</sup> Although the trend is declining, greater efforts are needed to accelerate the decline in cigarette smoking among adults in order to continue to decrease the adverse health effects of tobacco use. The tobacco use goal of Healthy People 2020<sup>7</sup> is to increase the percentage of patients aged 18 years and older who receive a tobacco screen in the office-based ambulatory setting from 62.4% to 68.6% in 2020. All health care professional must take it upon themselves to contribute to achieving the goals of Healthy People 2020<sup>7</sup> and to address



tobacco use and cessation with patients.<sup>7</sup> The role of physical therapists in promoting healthy behaviors such as smoking cessation consists of PTs restoring, maintaining, and promoting the optimal physical function of patients.<sup>3</sup> Thus, physical therapists must consistently screen patients for tobacco use and address smoking cessation as necessary. Physical therapists have the education, opportunity, and credibility to address health behaviors such as smoking with their patients.<sup>43</sup>

Brief smoking cessation advice by health-care providers such as physical therapists has proven to be effective treatments for patients that smoke.<sup>43</sup> Therefore, as physical therapists seek to become “autonomous practitioners to whom patients have direct access<sup>1</sup>,” it is essential for PTs to provide cessation advice to patients who smoke. Patients who choose to access a PT directly may do so without a doctor’s referral, therefore addressing personal health behaviors such as smoking cessation, which may typically be addressed by a physician, must be included in the physical therapy evaluation. In the literature, when physical therapists were surveyed, PTs believed it was their clinical responsibility to ask patients about their smoking habits as well as advise patients who currently smoke to quit.<sup>44</sup> Therefore, it is essential for physical therapists to discuss smoking habits with all patients in order to fulfill their role of promoting the optimal health of their patients.

### **Physical Therapists’ Practice**

Several researchers have investigated the topic of health care providers addressing smoking cessation with patients. Bodner et al<sup>44</sup> conducted a study examining physical therapists' knowledge about the health effects of tobacco use and their views in addressing smoking cessation. Although the majority of PTs believed they should address tobacco use with patients, most physical therapists reported that they felt unprepared to provide smoking cessation counseling to their patients. The respondents of the study were largely familiar with the negative health effects of tobacco use, although 20% of the physical therapists responded "not sure" or "disagreed" with the knowledge statement that the risk of heart disease increased as a result of exposure to second hand cigarette smoke.<sup>44</sup> Similarly, Rea et al<sup>11</sup> determined that physical therapists identified smoking cessation as the health behavior they are least confident in addressing when compared to physical activity, psychological well-being, and nutrition and overweight issues. A positive correlation was found between self efficacy and performance of addressing personal health behavior, thus the more confident PTs reported in addressing health behaviors the more often that behavior was performed.<sup>11</sup> The lack of confidence and knowledge reported in the evidence suggests that in order to increase the frequency at which PTs discuss tobacco use and smoking cessation with patients, physical therapist may require additional education about smoking cessation in order to increase self-efficacy in addressing this health behavior with patients.

The practice of physical therapists addressing tobacco use and smoking cessation with patients is not occurring as consistently as desired. Jette and Jewell<sup>19</sup> described the use of quality indicators in physical therapy. The authors determined that PTs asked

about tobacco use with half of all patients, and of those patients who reported themselves as smokers less than 21% were given advice by their physical therapist to stop smoking. As physical therapists seek direct access with patients, using quality indicators, such as asking and advising about tobacco use in the physical therapy examination and intervention will increase primary and secondary prevention of disease. As healthcare continues to change, quality of care may be directly related to reimbursement, which also enhances the importance for PT to address health behaviors and to ultimately increase quality of care.<sup>19</sup> Two additional studies asked PTs about their beliefs and practices pertaining to tobacco use and smoking cessation. The majority of PTs surveyed believed they should address tobacco use with their patients as 74% and 53% respectively reported incorporating this into their practice.<sup>9,10</sup> Physical therapists also provided inconsistent interventions with the patients pertaining to tobacco use. Johnson<sup>10</sup> reported that less than half of the PTs discussed the topic with the patients, 20% referred the patient to another practitioner, 13% referred the patient back to their physician and 12% did not address the topic at all.<sup>10</sup> Although some PTs may not feel adequately prepared to counsel patients about smoking cessation, it is still important for physical therapists to refer their patients to other health care providers and resources available that will assist the patients in achieving optimal physical health. Overall it appears that physical therapists believe they should be addressing smoking cessation with their patients however they are not consistently doing so.

Data from 2007 suggests that health care providers in office-based ambulatory care settings screened patients 18 years and older 62.4% of the time for tobacco use.<sup>7</sup>

However as a nation, the objective of Healthy People 2020<sup>7</sup> is to increase tobacco screening by health care providers to 68.6 percent. As physical therapists practice in the outpatient setting they must screen all patients for tobacco use in order to assist the nation in achieving the goals of Healthy People 2020. With nearly 20% of the adult population identified as smokers, the CDC<sup>42</sup> reported in 2010 that 68.8% of those adult smokers wanted to stop smoking; however, only 48.3% of those adults who smoke had been advised by a health care professional to quit smoking.<sup>42</sup> Physical therapists, along with other health care professionals, should be screening all patients for tobacco use in order to fulfill their role as promoters of optimal physical health, which would ensure they are providing the highest quality of care for each patient. It is apparent that PTs are not addressing tobacco use and smoking cessation consistently with patients. As the profession of physical therapy moves towards direct access it will be essential for all physical therapists to have the knowledge and confidence to discuss health behaviors with patients.

### **Patient Knowledge and Beliefs**

As previously stated, the adverse effects of smoking and tobacco use are numerous, however, the harmful effects of smoking do not always scare people into cessation. In a qualitative research study conducted by Meira Dia<sup>45</sup>, patients who had been diagnosed with lung cancer were questioned about their smoking habits and beliefs. The patients attempted to minimize the impact that cigarettes had on their health; although they stated they were aware of the damage cigarettes do to the body they did not

attribute their lung cancer to tobacco use. The patients in the study referred to doctors and nurses as “inquisitor figures” who applied the stigmatism of smoking and lung cancer to their patients. The authors determined that the deep psychological impact of smoking cigarettes was a pertinent aspect of the smokers’ acceptance toward smoking cessation interventions.<sup>45</sup> It is important for physical therapists and other health care providers to consider all aspects of a patient when addressing smoking cessation. The patient may view smoking as a pleasure or gratification; if physical therapists criticize patients for smoking it may only create anguish with the patient. Although patients may expect their primary care provider to address smoking cessation, patients may not be prepared to receive information or counseling about smoking cessation from physical therapists. It is still the duty of PTs to inquire about tobacco use with patients and provide advice or resources as necessary for cessation.

Patients from an outpatient health care clinic believed their health care practitioner should provide tobacco cessation services.<sup>46</sup> Of the patients surveyed, over half of the participants thought tobacco cessation interventions should take place. The populations with the highest percent of patients who believed the services should be offered were male and young in age. The patients reported that if they were interested in quitting they felt comfortable discussing the topic with their health care provider. However, the practitioners surveyed believed the most significant barrier to addressing tobacco cessation was patient resistance.<sup>46</sup> The study illustrated that patients and practitioners often do not possess accurate assumptions or beliefs about the other person involved. Thus the importance of acknowledging and determining patients’ perceptions is

enhanced, because the perceptions of the patients do not seem to match that of the health care professionals. The results of the study<sup>46</sup> continue to highlight the importance of tobacco screening and interventions with patients in the outpatient setting, regardless of the possible thought that patients may be resistive to the discussion. Physical therapists must acknowledge that some patients expect their health care practitioners to address tobacco use and smoking cessation, while others may perceive the discussion as inquisitive.

In the state of Minnesota, the 2011 MN Adult Smoking Survey<sup>47</sup> reported that 16.1% of adults, about 625,000 people, were current smokers. This prevalence compares favorably with the 19.3 percent smoking prevalence for all states as of 2010.<sup>47</sup> Awareness of free assistance to quit smoking was assessed in the MN Adult Smoking Survey. The question asked was “During the past 12 months, have you heard of any stop smoking programs, such as a helpline, support group or website that offered free help to smokers who were trying to quit?” Among current smokers, 77.2 % were aware of free assistance to quit smoking. Similar high levels of awareness were reported among former smokers who had quit in the past five years. Also, among current smokers, a high percentage believed they were able to quit without the use of smoking cessation medications. The results demonstrate that patients are aware of the resources available for smoking cessation; if patients are aware they should quit smoking then they may also know about the adverse health risks related to smoking.<sup>47</sup> If the majority of patients believe they are able to quit without medications then physical therapists are in ideal position to provide cessation counseling and motivation for patients at the initial evaluation and each

subsequent PT session. It appears that patients do not always require a doctor's prescription to assist with quitting, which is another justification that physical therapists have the knowledge and skills to impact current smokers.

In conclusion, physical therapists have a defined role in addressing tobacco use and smoking cessation with patients. Many PTs reported lack of confidence and feeling unprepared to provide cessation advice to patients. Therefore, PTs may require additional education or training in order to increase their self-efficacy and ultimately their consistency in addressing smoking cessation. Many patients are aware of the resources available for smoking cessation and most seem to be familiar with the adverse health effects of tobacco use; however, physical therapists must provide the education about the risk associated with using tobacco and the benefits of smoking cessation. If physical therapists do not feel confident in advising patients to quit smoking, the PT should refer patients to other health care practitioners who can assist the patient in cessation. Patients and health care providers may not always have the same perception of tobacco use and smoking cessation as one another, and therefore it is important to determine the expectations patients have for physical therapists in terms of addressing personal health behaviors.

### *Dietary Guidelines*

#### **Introduction**

Throughout the population it is well known that fruits and vegetables should be a significant part of the human diet. Fruits and vegetables are abundant with vitamins and

minerals that may help in preventing chronic diseases.<sup>48</sup> The *Dietary Guidelines for Americans 2010*<sup>49</sup> and the *5 A Day Works!*<sup>48</sup> programs both advise individuals to consume at least 5 cups of fruits and vegetables daily.<sup>48,49</sup> However, according to Healthy People 2020<sup>7</sup> people are only consuming ½ cup of fruits per 1000 calories and ¾ cup of vegetables per 1000 calories. Healthy People 2020<sup>7</sup> reported physicians included nutrition counseling 20.8% of the time when treating patients with chronic diseases such as diabetes, cardiovascular disease, and hyperlipidemia in the outpatient setting.<sup>7</sup> Evidently, there is a sizeable need for nutrition counseling in the outpatient setting and physical therapists have the potential to fill the ideal role to address these health behaviors. Yet again, it is unknown what patients expect in terms of physical therapists addressing the consumption of fruits and vegetables.

### **Role of Physical Therapists**

As previously stated, Healthy People 2020<sup>7</sup> identified the need for physicians in the ambulatory outpatient setting to increase the number of patients who receive nutritional counseling.<sup>7</sup> Physical therapists in the outpatient setting would also be equipped to provide this service to patients. The role of physical therapists in advising patients about the recommended levels of fruits and vegetables is within a PTs scope of practice and is important in ensuring that PTs are promoting the optimal health of their patients.<sup>3</sup> Although, minimal evidence exist that examined the role of physical therapists



in providing nutritional advice to patients, evidence about physician's providing nutritional does exist.

In 1995 Kushner<sup>50</sup> sent out a questionnaire to physicians about their attitude, practice and barriers to providing nutritional counseling. After analyzing 1,030 surveys the results illustrated that 75% of the physicians believed it was important and their responsibility to provide patients with nutritional counseling. However, only two-thirds of physicians reported incorporating dietary guidelines and counseling into their practice. Of those physicians, it was reported that dietary counseling was carried out with less than 40% of their patient population. If the patient did receive dietary information, it was for less than 5 minutes of the total visit. The physicians reported several barriers to administering nutritional counseling such as lack of time, training, knowledge, reimbursement and confidence, as well as patient non compliance and inadequate teaching materials. Previous nutrition training was significantly associated with the percentage of patients counseled.<sup>50</sup> Likewise, Kolasa<sup>51</sup> reviewed the current literature in 2010, including Kushner's<sup>50</sup> data, and determined that there has been little to no change in physicians' behaviors of providing nutritional counseling. Uniform training in medical schools on the topic of nutrition counseling still did not exist, regardless of the belief that physicians thought it was within their scope of practice. The Five A's were analyzed in terms of nutritional counseling and Kolasa determined that the last two steps of "assisting" the patient in behavioral change and "arranging" follow up visits were rarely completed. In conclusion, Kolasa reported that physicians and other health care providers were still the most trusted source of health information.<sup>51</sup> With the lack of consistency of

physicians addressing the consumption of fruits and vegetable with patients, it is necessary for physical therapists to address nutrition with patients to ensure they are aware of the proper dietary guidelines and the additional resources or health care providers available for nutritional counseling.

The national goal of Healthy People 2020<sup>7</sup> is to increase the percentage of patients who receive nutrition counseling or education. Although it is expected for physicians to address nutrition, physical therapist as part of the health care team can also address these healthy behaviors with patients and as direct access increases so does the importance of PTs taking action in addressing the consumption of fruits and vegetables. Physical therapists may help patients by educating them about the health benefits of consuming fruits and vegetables and directing patients to resources available, including referrals to other specialized health care practitioners.

### **Physical Therapist's Practice**

In a study conducted by Chase et al<sup>52</sup>, physical therapists' perceptions about patient education were considered when 300 APTA members were surveyed. The physical therapists reported they provided education to nearly 100% of their patients. The physical therapists also reported they regarded patient education as a "very important" component of the overall care provided. Although PTs frequently provided education to their patients, nutritional education was not included.<sup>52</sup> As health care providers to whom patients have direct access, it is important for PTs to educate their patients about how to

obtain their optimal physical health.<sup>1</sup> Gahimer<sup>12</sup> also explored perceptions of physical therapists and patients when it comes to patient education. Results illustrated that PTs regularly educate patients about their illness, home exercise program and provided other advice, however PTs rarely addressed general health. The perception of the patients and the physical therapists did not match as PTs perceived they provided health education more frequently than the patients perceived the PTs provided it. When PTs did address general health concerns, such as healthy eating, nearly 30% of patients reported changes in their behaviors.<sup>12</sup> Therefore, it is important to address healthy behaviors, like the consumption of fruits and vegetables with all patients because there is potential for behavioral changes.

It is important for PTs to educate all of their patients; however it may seem more important to educate patients who have difficulty maintaining a healthy weight about nutrition. Sack<sup>29</sup> surveyed physical therapists and their attitude, knowledge and practice with patients who are obese. PTs demonstrated neutral attitudes toward patients who were obese and were able to report their knowledge that lack of physical activity and poor nutrition often contribute to obesity. However, 87.4% of the time PTs recommended increasing physical activity levels to patients but PTs rarely recommended nutritional changes or helped make referrals to patients.<sup>29</sup> Rea et al<sup>11</sup> also noted that increasing physical activity was practiced by PTs with nearly 55% of patients; however, PTs practiced nutrition counseling with less than 20% of their patients.<sup>11</sup> It is important for physical therapists to address all the aspects of a patient's lifestyle, including nutrition with all patients. Physical therapists do not need to advise patients about a specific diet

but they should be providing patients with information regarding specific dietary guidelines. It is also important for PTs to know where to direct patients for reliable resources and make referrals if the patients require it to assist with these changes.

### **Patient Knowledge and Beliefs**

Although statistics illustrate that the majority of people in the United States do not meet the recommended levels for consumption of fruits and vegetables, it is not well known and difficult to determine if people are knowledgeable about the topic.<sup>7,48</sup> As previously discussed, health care practitioners are not addressing nutrition with enough patients despite the high percentage of adults who are overweight and possess non-communicable disease such as diabetes. There is no evidence that determines if patients believe their physical therapist should address the consumption of fruits and vegetables.

Brotons et al<sup>53</sup> developed a large research study considering patient's beliefs about the importance of lifestyle and prevention services in the general practice setting. The study consisted of 7,947 participants. Overall, 53% of the participants believed diet was important for their health while 55% and 59% believed physical activity and body weight were important to their health respectively. Likewise, 43% felt they needed to improve their diet and 48% believed their physical activity and body weight needed to improve. Most notably, 66% of patients reported they would like to receive support for lifestyle changes from their general practitioner.<sup>53</sup> The evidence has depicted that the expectations of patients and performance of general practitioners is not synonymous. The

results may also be true for physical therapy patients, although it is not documented, it could be said that physical therapy patients expect PTs to assist them in making lifestyle changes.

In conclusion, physical therapists must address the consumption of fruits and vegetables in order to fulfill their role of promoting and maintaining optimal physical function. A lack of research about physical therapists and nutrition exists however the data about physicians and nutrition counseling suggests that a discrepancy is apparent between the number of patients who would benefit from nutritional advice and the number of patients who actually receive this advice from their health care provider. Physical therapists need to assist in closing that gap and should consistently be addressing the consumption of fruits and vegetables with all patients. Educating patients about the health benefits of consuming fruits and vegetables is equally important as it is undetermined if patients possess the knowledge about the recommended amount of fruits and vegetables to consume.

### **Purpose**

The lack of evidence about the expectations and perceptions patients possess about physical therapists addressing the personal health behaviors of physical activity, maintaining a healthy weight, smoking cessation, and the consumption of fruits and vegetables has led to the purpose of the present study. The purpose of this study was to determine if patients believe that PTs should advise them on the personal health

behaviors in the areas of physical activity, smoking cessation, fruit and vegetable consumption and maintaining a healthy weight.

## Methods

### Design:

This research project was a cross-sectional descriptive study utilizing a survey.

### Participants:

A convenience sample of consecutive patients from three Fairview Institute for Athletic Medicine outpatient physical therapy clinics meeting the following inclusion criteria: 18 years of age and older, completed at least three physical therapy sessions, and identified by their treating physical therapist as having completed their active PT program for their current physical therapy pathology, were invited to participate. A total of 109 surveys were returned. Of those surveys returned, 100 participants met the inclusion criteria and completed the survey.

### Procedures:

This research study was conducted in collaboration with physical therapy students and researchers at Oakland University in Michigan who were investigating a parallel study. A single survey was designed collaboratively by both research groups to be used by both programs and similar research methodology and procedure were carried out separately. The study was approved by the Institutional Review Boards (IRB) of the University of Minnesota and St. Catherine University. All researchers completed CITI Training. The St. Catherine University Academic Community Development Committee provided funding for the study through the Faculty Scholarship Grant. Partnership with

Fairview Institute of Athletic Medicine (IAM) was established with three local outpatient clinics for patient recruitment and data collection.

The survey was developed to identify outpatient physical therapy patients' perceptions of the physical therapists' role in four areas of personal health behaviors: physical activity, healthy weight management, smoking cessation, and consumption of fruits and vegetables. Health behavior questions in the survey were adapted from the CDC's Behavioral Risk Factor Surveillance System (BRFSS)<sup>54</sup> questionnaire regarding the participants' adherence to current recommendations for physical activity, healthy weight, abstaining from smoking, and consuming adequate fruits and vegetables.<sup>54</sup> The CDC recommended level of physical activity was used in the survey (adults should engage in moderate-intensity physical activities for at least 150minutes/week).<sup>5</sup> The behavior of maintaining a healthy weight was determined by providing participants with a body mass index (BMI) scale and chart and asking them, based on their weight in pounds and height in feet, to report their BMI. The BMI classification categories used in the questionnaire were underweight (BMI < 18), healthy weight (BMI 18-25), overweight (BMI 26-30), and obese (BMI > 30).<sup>27</sup> The recommendation for smoking used in the survey was to abstain from smoking tobacco.<sup>42</sup> Recommendations for daily fruit and vegetable consumption for adults in the United States was consistent with CDC guidelines of five or more cups per day.<sup>48</sup>

For all four of the personal health behaviors the participants to were asked a question that assessed their current stage of change, based on the trans-theoretical model.



The trans-theoretical model of behavior change identifies five stages of change for engaging in a specific behavior. These stages include precontemplation, contemplation, preparation, action, and maintenance. An individual is considered to be in the precontemplation stage when there is no intention to change or engage in a particular behavior within 6 months. Individuals are in the contemplation stage if they are considering a change in their behavior within the same timeframe. In the preparation stage the individual intends to take action within the next 30 days and has taken some steps to change the behavior. The action stage is identified as the stage when the individual has engaged in the behavior but for less than 6 months, and in the maintenance stage the individual has engaged in the behavior for 6 months or more.<sup>55</sup> This method was chosen to collect more detailed information about the participants' current or intended behaviors related to the four health behaviors.

Questions regarding the participants' beliefs of the PT's role in promoting personal health behaviors were structured using a 5-point Likert scale to qualify responses as either strongly agree, agree, neutral, disagree, or strongly disagree. These questions were written to assess if patients believed physical therapists should advise them on each behavior, and if it was appropriate for PTs to discuss associated benefits, national recommendation levels and ways to increase the health promoting behavior. Respondents were also asked about their opinions about whether they believe physical therapists should be role-models for these four personal health behaviors. Sex, age, education level, previous physical therapy experience, information about referral method,

reason for current referral to physical therapy and length of the most recent physical therapy episode of care and duration of current condition were also collected.

Face validity of the survey was established by the study investigators, St Catherine University Doctor of Physical Therapy faculty, and by a staff member from the Office of Research and Sponsored Programs at St. Catherine University with expertise in survey design. Completion of the survey by friends and family of the researchers also contributed to the revision and validity of the study. A pilot study was carried out to test the survey for test/retest reliability prior to beginning the main study phase. Due to an insufficient return rate of the pilot surveys formal reliability testing was not performed. The returned pilot surveys were reviewed by the investigators and minor formatting changes were made to finalize the main study survey version.

The investigators provided study packets and an instructional session to the physical therapists at the three participating clinics. The study packets included a consent form stating that return of the survey served as consent to participate, the survey, a postcard to return to a separate investigator to be entered in a drawing for a \$100 gift card and an addressed and stamped envelope to mail the survey to one of the investigators. The physical therapists at the clinics determined eligibility of their patients and notified a designated person at each site (the clinic receptionist or another clinic staff) as to which patients qualified for the study. The designated clinic staff member then described the study to the qualifying patients using a script provided by the investigators and provided a study packet to those that expressed a willingness to participate. All patients were

informed that participation was voluntary and that completion and return of the survey served as the participants' consent. In order to maintain confidentiality and anonymity of the subjects no record was kept of who was given the study packet. Initial data collection and analysis were kept separate between the parallel studies at St Catherine University and the Oakland University.

### **Materials and procedures:**

A total of 30 pilot surveys were distributed to patients identified by physical therapists from the Fairview IAM clinics. This sample of convenience of physical therapy patients was asked to complete two copies of the draft survey one week apart in order to establish test-retest reliability of the survey instrument. The pilot study packet included a consent letter with instruction, two addressed and postage paid envelopes for returning their two surveys and two sealed envelopes containing two identical copies of the survey. The subjects were instructed to open one sealed envelope, fill out the enclosed coded survey and return it to the St. Catherine faculty co-investigator in one of the addressed, postage paid envelopes. The participants were instructed to open the second sealed envelope between two to seven days later, fill out the second coded survey and return it to the investigator in the second addressed, postage paid envelope.

A total of 300 main study packets were distributed to the affiliated Fairview IAM outpatient clinics, with one hundred at each specific site. Recruitment and data collection was planned for four months with the goal of achieving a convenience sample of 100.

The designated clinic staff member at each site was given a laminated card that reviewed

the inclusion criteria, and the communication script that was to be used to describe the study to the patients who had been identified by the PT as meeting the inclusion criteria. Qualifying patients who expressed a willingness to participate received a study packet from a designated clinic staff member. The subjects were allowed to keep the consent information sheet for their own reference, and they were instructed that completion and return of the survey would serve as consent to participate in the study. No record was kept of who was given a packet.

For both the pilot study and main study, participants were informed completion of the survey would take approximately 20 minutes. The subject was asked to complete the survey within one week of receiving it, and to mail it back to the St. Catherine faculty co-investigator in the envelope provided. All subjects were instructed to refrain from writing or recording any personal identifying information on the survey or on the pre-addressed return envelope so that their anonymity could be protected. This included their name or home return address. As an optional incentive upon completion of the study, the subjects were given a postage-paid addressed postcard to fill out and mail in to one of the Co-Investigators at a different address if they chose to provide their name in order to be eligible for a drawing for a \$100.00 VISA gift card. Approximately every 2 weeks, one of the investigators contacted the three clinics to remind them to continue with the survey until all survey packets had been distributed.

#### **Data Analysis:**

IBM© SPSS Version 19 software was utilized to analyze the results of the survey. Mean and standard deviation values were calculated for continuous BMI and age data, and percent frequency of responses for all other data. For analysis purposes, the results from strongly agree and agree were combined as well as strongly disagree and disagree.

## Results

### Demographics

At the time of analysis, the three Fairview Institute of Athletic Medicine clinics had distributed 230 surveys to patients. A total of 109 surveys were returned for a response rate of 47%. Of the returned surveys, 2 were excluded as they did not meet the inclusion criteria for age and 7 were excluded for not having yet completed 3 PT sessions for their current condition. Thus, a total of 100 surveys were used for analysis and of those, 85 completed the entire survey with 15 leaving one or more question unanswered.

The mean age of respondents (n=98) was 56.24 years (SD=16.4 years) and ranged from 19-88 years. The mean Body Mass Index BMI reported by respondents (n=96) was 26.69 kg/m<sup>2</sup> (SD=5.86 kg/m<sup>2</sup>) ranging from 17.0-45.0 kg/m<sup>2</sup>. Of the 100 respondents, 74% were female and 26% were male. Subjects also reported their education level (n=99) with 3% having completed some high school, 7.1% obtained their high school diploma or equivalent, 25.3% completed some college, 34.4% reported having graduated college and 30.3% had post-graduate education. Additional demographic data gathered from respondents is reported in Table 1 in the Appendix.

### Physical Activity (PA)

The maintenance and action phases of the trans-theoretical model's Stages of Change<sup>55</sup> indicate that a person has engaged in the behavior, 150 minute per week of moderate physical activity, for 6 months or more and less than 6 months respectively.<sup>5</sup>

Those participants in either the maintenance or action phase were referred to as “engagers” and those in the remaining three categories were referred to as “non-engagers.” The results from the survey indicate 46.9% were in the maintenance phase and 11.2% were in the action phase, indicating 58.1% were engagers. 18.4% of respondents reported they were in the preparation phase, 16.3% in the contemplation phase and 7.1% were in the precontemplation phase.

The majority of respondents, (n=100 88%), agreed to the question “Do you agree it is appropriate that your physical therapist(s) should advise you on the recommended levels of regular physical activity?” Eleven percent (11.0%) responded neutral about PTs advising about levels of PA and 1.0% disagreed. When respondents were asked, “Did your physical therapist(s) talk to you about your physical activity level?” 70.7% (n=99) reported yes their PT discussed PA, 19.2% reported no and 10.1% reported they did not recall. One hundred patients responded to the question, “Do you agree it is appropriate that you physical therapist(s) should be physically active as a role model to you?” and 80% agreed, 14% were neutral and 6% disagreed. Data related to PA is shown in Table 2 in the Appendix.

### **Fruit and Vegetable Consumption (F&V)**

Of those participants who reported their current stage of change (n=96) 49.0% were in the maintenance phase, 9.4% in the action phase, indicating 58.4% were engagers. Of the remaining participants, 11.5% were in the preparation phase (intention to consume 5 fruits and vegetables daily within the next 30 days), 8.3% were in the

contemplation stage (consideration of consuming 5 fruits and vegetables daily within the next 6 months) and 21.9% reported to be in the precontemplation phase (no intention to consume 5 fruits and vegetables daily within the next 6 months).

The majority of respondents, 54.5% (n=99), felt neutral when asked, “Do you agree it is appropriate that your physical therapist(s) should advise you in the amount of fruit and vegetables that you eat each day?” 28.3% agreed and 17.2% disagreed. Of the 100 respondents, 4% reported “yes” when asked, “Did your physical therapist(s) talk to you about the amount of fruit and vegetables that you eat each day?” 89% stated no and 7% did not recall. In regards to the question, “Do you agree it is appropriate that your physical therapist(s) should serve as a role model to you with regards to the amount of fruit and vegetables eaten each day?” (n=100), 41% agreed, 44% reported they were neutral and 15% disagreed. Refer to Table 3 in the Appendix for remaining F&V data.

### **Smoking Cessation**

The number of participants who were smokers was determined based on their reported stage of change. 53.6% of participants reported they had never smoked, 36.1% were in the maintenance phase, meaning that they had abstained from smoking for 6 months or longer. In the action, preparation and contemplation phase, 2.1% of participants were reportedly in each stage. 4.1% of the respondents were in the precontemplation phase. Those in the action, preparation, contemplation and precontemplation phases were categorized as smokers because all responded yes when asked “Do you smoke cigarettes?” Those in the action phase are in process of quitting



smoking. Participants in the preparation and contemplation phase intend to quit smoking in the next 30 days or 6 months, respectively. Respondents in the precontemplation phase had no intention of quitting smoking in the next 6 months. Based on these findings, 91.8% of respondents were categorized as engagers for the PHB smoking cessation.

Results regarding patient beliefs about smoking cessation were similar to F&V. Based on the participants response to the “Do you smoke cigarettes?” 10 of the 97 patients who responded to this question reported to be current smokers. Only the smokers responded to the question “Did your physical therapist(s) talk to you about your smoking?” Results showed that 9.1% reported their PT discussed smoking with them. All patients responded to the belief questions regarding smoking cessation. 48.4% of both smokers and non-smokers (n=95) agreed with the question, “Do you agree it is appropriate that your physical therapist(s) should advise you in abstaining from cigarette smoking?” 33.7% were neutral and 17.9% disagreed. Ninety eight participants responded to the question, “Do you agree it is appropriate that your physical therapist(s) should not smoke as a role model to you?” Of these 98 respondents, 67.3% agreed with this, 19.4% were neutral and 13.3% disagreed. See Table 4 in the Appendix.

### **Healthy Weight**

Of those patients who responded to the stage of change question on the survey (n=96), 53.1% were in the maintenance phase, meaning their body weight had been in the healthy weight range for more than 6 months. Those participants who reported their body weight was in the healthy weight range for less than 6 months were in the action phase

(1.0%). These findings indicate 54.1% of respondents were engagers in the PHB of maintaining a healthy weight. The preparation phase (29.1%) means that participants were not in the healthy weight range but intended to address their weight in the next 30 days. The contemplation phase (12.5%) indicate patients who did not fall in the healthy weight range and intended to address their weight in the next 6 months and those in the precontemplation phase (4.2%) also did not fall within the healthy weight range but had no intention of addressing their weight within the next 6 months.

Patients were categorized as a healthy weight, underweight, overweight or obese based on their self-reported BMI (n=96). Of the 96 respondents, 52.1% were a healthy weight, 1% reported being underweight, 24% stated they were overweight and 22.9% were obese. The majority of patients agreed with the question, “Do you agree it is appropriate that your physical therapist(s) should advise you in maintaining a healthy weight?” (n=99, 75.8%), 17.2% responded with neutral and 7.1% disagreed with this question. When asked “Did your physical therapist(s) talk to you about your weight?” 87.9% (n=99) reported their PT did not discuss maintaining a healthy weight, 8.1% said yes and 4% did not recall. The majority of patients (n=98, 69.4%) also agreed with the question, “Do you agree it is appropriate that your physical therapist(s) should be a healthy weight as a role model to you?” 21.4% were neutral and 9.2% disagreed with this. Remaining data for healthy weight is shown in Table 5 in the Appendix.

## Discussion

### Introduction

The purpose of this study was to determine if patients believe that physical therapists should advise them on personal health behaviors (PHBs) in the areas of: physical activity, smoking cessation, nutrition, and weight loss. Participants were also asked to categorize themselves in the 5 Stages of Change<sup>55</sup> based on their personal behavior in the areas of the four healthy behaviors. The participants reported maintaining or carrying out the healthy behaviors at higher than average levels when compared to the general population. The data supported that patients perceived physical activity as the most frequently addressed personal health behavior, while discussion of the other three PHBs was perceived significantly less frequently. Less than 10% of participants perceived that their physical therapist addressed maintaining a healthy weight, however nearly 75% of participants agreed that PTs should advise their patients about maintaining a healthy weight. The results illustrate that a discrepancy exists between physical therapist's practice and the perceptions or expectations of patients in terms of addressing weight management. Although only a small percentage of participants categorized themselves as smokers, over 50% of people surveyed agreed that physical therapists should advise their patients on the benefits of abstaining from tobacco, suggest ways to quit, and role model smoking abstinence. Very few patients perceived their PT discussed the consumption of fruits and vegetables; however the majority of patients reported a neutral position about if PTs should advise patients about nutrition. Overall, the data

revealed physical therapists are not addressing the personal health behaviors of physical activity, smoking cessation, nutrition, and weight loss at a high enough frequency to meet the perceptions and expectations of patients.

### **Demographics**

One aspect of the patient demographics that revealed interesting findings was the reported level of education of the participants. Of the respondents, 34.3% had graduated college and 30.3% had completed post-graduate college. The US Census Bureau<sup>56</sup> reported in 2009, 85% of adults age 25 or older reported receiving a high school diploma or the equivalent and 28% reported a bachelor's degree or higher.<sup>56</sup> The results from this study do not specify the type of degree patients earned from graduating college, but the percentage of participants who graduated college is higher than the national average. This result could have affected the responses of the participants. Based on research by Winkleby et al<sup>57</sup>, a higher level of education may be the best predictor of better health, and is a significant factor that contributes to an individual's socioeconomic status. Thus, the patients who participated in the survey may be in a better state of health than the general population due to their higher levels of education. People who are in good health may be more interested in healthy behaviors as they may want to continue with them if already following recommendations or they may be looking for suggestions from health care providers as to ways to incorporate these healthy behaviors into their everyday life. Another idea is that because the participants had higher levels of education, they may be more interested and able to afford preventative medicine if a physical therapist provided

it. Further studies could be done in more diverse areas to capture a larger sample that is more similar to the general population.

In addition to education level, the results also demonstrate some interesting findings related to the length of treatment the patients reported for their current PT condition. Based on the responses, 35% of the respondents had been treated by a PT for 5-6 weeks and 33% had been treated for more than 6 weeks. Also, 79% of respondents stated they had previously had physical therapy. This may have affected the data in a positive manner. If individuals are spending five or more weeks with a PT or if they have previously had PT, they may have a better sense as to the broad scope of practice and role of a PT. Patients may also have built a good relationship with their PT and feel more comfortable discussing these personal health behaviors with them.

### **Personal health behaviors**

Previous research illustrated that physical therapists were addressing personal health behaviors at less than desired frequencies when considering the goals of Healthy People 2020<sup>7</sup> and the goals of the American Physical Therapy Association.<sup>1,7,11</sup> Evidence showed that some physical therapists felt personal health behaviors were too sensitive to address with patients.<sup>9</sup> The results of this study reveal that patients responded with high percentages of agree and neutral responses to the survey questions. Therefore, the majority of patients was not opposed, or did not disagree with PTs addressing, advising, or suggesting ways to change their behavior for any of the four personal health behaviors.

The results may indicate that patients do not feel discussing personal health behaviors is too sensitive for physical therapists to be addressing.

### ***Physical activity***

When compared to the other three personal health behaviors, patients reported PTs addressed physical activity most frequently. This is consistent with the results of previous literature stating that PTs reported addressing physical activity most frequently with patients.<sup>9,10,11</sup> As Johnson<sup>10</sup> and Eckstrom<sup>9</sup> discussed, when PTs were surveyed, over 90% reported addressing physical activity levels with their patients.<sup>9,10</sup> In contrast, Gahimer<sup>12</sup> reported outpatient PTs rarely discussed information regarding the patient's general health, including levels of physical activity.<sup>12</sup> Past evidence has determined that inconsistencies exist in physical therapists' practice, and the data from this current study is congruent with past research. Physical therapists may address PA the most because movement is the focus of the profession. Also research suggests that PTs have a high level of self-efficacy or confidence in the area of addressing physical activity levels; a high confidence level on a certain topic has been positively correlated with a higher frequency of utilizing that topic when practicing physical therapy.<sup>11</sup> Therefore, physical therapists may not be addressing PHBs other than physical activity because they are not confident in doing so.

The participants of this study may be unique when compared to the general population. The data illustrated that 45.5% of participants categorized themselves in the maintenance phase for physical activity and 9.1% in the action phase. The maintenance

and action phases of the trans-theoretical model's 5 Stages of Change<sup>55</sup> indicate that a person has engaged in the behavior, 150 minute per week of moderate physical activity, for 6 months or more and less than 6 months respectively.<sup>55</sup> The individuals in the maintenance or action phase for any behavior are often referred to as "engagers."<sup>55</sup> As reported by the CDC,<sup>5</sup> only 20% of Americans are considered engagers, or meet the recommended guidelines for physical activity, which is significantly less than the data reported in the current study.<sup>5</sup> Non-engagers, or those who categorized themselves in the preparation, contemplation or pre-contemplation stage of change are those who intend to take action in the next 30 days, are considering taking action in the next 6 months, and not intending to change their behavior in the next 6 months respectively.<sup>55</sup> The data illustrated that 45.5% of the participants were non-engagers of physical activity, which again is lower than the general population as reported by the CDC.<sup>5</sup>

With nearly half of the participants in this study categorized as non-engagers and more than 80% of the general population categorized as non-engagers, it is imperative that physical therapists consistently address physical activity levels with all patients. Of the participants in this study, 70.7% perceived their physical therapists addressed their physical activity levels, which indicates that nearly 30% of patients did not receive any discussion about recommended PA levels, how to engage in PA, or the benefits of physical activity. If an individual is categorized in any of the three non-engaging stages of change, advice or suggestions from a physical therapist may be the motivation the person needs to begin engaging in the behavior, especially if the advice is paralleled to their specific stage of change.<sup>55</sup> The data from the current survey illustrated that nearly all

patients agree or strongly agree that physical therapists should advise patients, advise the benefits of, suggest ways to increase, and should role model physical activity. Therefore, PTs need to attend to the discrepancy that exists between the practice of physical therapists and the expectations and/or perceptions of patients.

### ***Fruit and Vegetable Consumption***

According to the results, 3.8% of the participants reported that physical therapists talked about the consumption of fruits and vegetables with them, which is the least of all four personal health behaviors. The minimal frequency at which patients reported that PTs address nutrition is not alarming as past research is limited in the area of physical therapists advising about the consumption of fruits and vegetables. As Kushner<sup>50</sup> and Kolasa<sup>51</sup> reported, physicians are not consistently addressing nutrition with patients in the outpatient setting, thus it was not expected that physical therapists would either.<sup>50,51</sup> Previous research has documented that physical therapists have report a low confidence level in addressing nutrition, which may contribute significantly to the lack of advice provided to patients about nutrition.<sup>11</sup> The patients surveyed reported a neutral position to the idea of PTs advising patients about nutrition, advising the benefits of consuming fruits and vegetables, and suggesting ways to increase the amount of fruits and vegetables consumed. The survey results showed 54.5% of patients were neutral and 28.3% of patients agreed with PTs advising them about levels of fruit and vegetable consumption. These responses represent greater than 80% of participants. These data indicate that



patients are not against or opposed to physical therapists discussing nutrition in the outpatient setting.

A higher than average percentage of participants in this study reported engaging in the consumption of the recommended amount of fruits and vegetables. Approximately 56% of the participants categorized themselves as in the maintenance or action phase of consuming 5 cups of fruits and vegetables daily. In contrast to the data from Healthy People 2020<sup>7</sup> which showed that the average American is only consuming 2-2 ½ cups of fruits and vegetables daily.<sup>7</sup> Nearly 44% of the participants categorized themselves in the three non-engaging categories. It is interesting to note, 24% of the non-engagers were in the pre-contemplation stage indicating they have no intention of changing their behavior in the next 6 months. However, as previously reported the majority of patients were not opposed or were neutral to the idea of physical therapists addressing nutrition. The results show again that a discrepancy exists between the practice of PTs and the expectations of patients. Patients do not appear to have a strong feeling against PTs advising them about fruit and vegetable consumption yet according to this survey only 4.0% are reporting that their PT actually discussed this PHB with them. With a significant portion of the participants reporting they do not intend to change their behavior in the next 6 months, this would be an opportune time for physical therapists to provide advice and describe the benefits of consuming fruits and vegetables in order for patients to move toward making changes in their personal health behaviors. The study conducted by Chase et al<sup>52</sup> reported that PTs provide education to nearly 100% of their patients and that they feel patient education is “very important” in providing care to patients.<sup>52</sup> PTs have the opportunity to

address fruit and vegetable consumption in the education they provide to their patients. As this study showed, patients appear as though they may be open to the idea. In addition, Gahimer<sup>12</sup> reported that when PTs did address general health concerns, such as healthy eating, nearly 30% of patients reported changes in their behaviors.<sup>12</sup> The results from this current study suggest that patients are not opposed to the discussion of nutrition and if PTs take the time to educate patients, behaviors may be modified.

### *Smoking Cessation*

Of the participants in the study, 51.9% reported they had never smoked and 37.7% of the participants were categorized as engagers in the behavior of smoking abstinence. In total, 89.6% of the participants engaged in not smoking, while 10.4% reported they were smokers or non-engagers. This is lower than the national average, 19.3%, as reported by the CDC<sup>42</sup> in 2010. Of those 10.4% of the participants who were smokers, only 1 out of 10 reported their PT discussed smoking cessation. The minimal number of patients who reported their PT addressed smoking cessation can be contrasted with higher percentage of physical therapists who reported incorporating smoking cessation in their practice in previous research. Johnson<sup>10</sup> and Eckstrom<sup>9</sup> surveyed PTs and the results showed that 53% and 74% respectively, of physical therapists reported they address smoking cessation with patients. This divergence may exist simply because PTs are over reporting the frequency at which they address smoking cessation with patients or it could be that patients and PTs do not have the same perception of what constitutes addressing smoking cessation.

It is important to note that all patients, smokers and non-smokers, responded to the smoking cessation belief questions on the survey. When all patients were asked whether they believe PTs should advise patients about not smoking, 48.4% agreed and 33.7% were neutral to the idea. The data illustrated that nearly 80% of patients do not disagree, or were not opposed to, PTs discussing smoking cessation with patients. The results reiterate the idea that though PTs may believe this to be too sensitive of a topic to discuss with patients, patients are not necessarily opposed to advice about smoking cessation from physical therapists.<sup>9</sup> In contrast, because both smokers and non-smokers responded to the questions, a bias could exist in the results due to the idea that non-smokers may exhibit a strong feeling about wanting people who smoke to quit. Physical therapists are educated about the harmful effects of smoking and it is their professional duty to educate their patients about health promoting behaviors. This study points out that from patients' perspectives, they do not disagree that it is the role of a PT to discuss smoking cessation with patients and may in fact be receptive to the advice of a physical therapist.

### ***Maintaining a Healthy Weight***

The participants of the study were asked to determine their body mass index (BMI) using a chart provided in the survey. According to the results, 52.1% of participants had a healthy weight and 46.9% of participants were either overweight or obese, which indicates that a greater percentage of the respondents were overweight or obese than compared to the general population as the CDC<sup>6</sup> reported 33.7% of adults are

overweight.<sup>6</sup> Although a significant portion of the participants were categorized into the overweight or obese categories of BMI, only 8.1% of participants perceived their physical therapist addressed maintaining a healthy weight. The low frequency of addressing weight management is consistent with the previous literature as reported by Rea<sup>11</sup> and Jette.<sup>19</sup> Rea<sup>11</sup> determined that PTs were not confident in addressing maintaining a healthy weight and only discussed it with patients 19% of the time.<sup>11</sup> Likewise, Jette and Jewell<sup>19</sup> surveyed physical therapists and found that only 3.6% of physical therapists address maintaining a healthy weight with 90% of their patients.<sup>19</sup> The results of the current study, as well as past research, showed that PTs are inconsistently and infrequently addressing maintaining a healthy weight with patients.

The results from the survey illustrated that 54.1% of participants engage in maintaining a healthy weight, which indicated that 45.9% of participants were non-engagers and do not maintain a healthy weight. It is important to note that the majority of non-engagers were categorized in the preparation stage of change meaning the individuals intend to take action in changing their behavior in the next 30 days. This is significant because PTs may be able to provide the information, suggestion or advice that will assist in the patient moving to the action phase and changing their behavior. The results of the survey also demonstrated the majority of participants believed physical therapists should advise, advise the benefits of, and suggest ways to maintain a healthy weight. Again, a discrepancy had been found between physical therapists practice and the perceptions and expectations of patients.

### **Strengths and Limitations**

There were several strengths of this study. One strength noted was the high response rate to the survey. This allowed for a greater representation of patient's beliefs about the role of physical therapists. In addition, the respondents came from multiple clinics also allowing a greater variety of participant demographics. A unique strength is the parallel study being conducted at Oakland University which will allow for future state-to-state comparison of patients' beliefs. This study was also purposefully designed so patients participation in this study was not initiated by their PT and instead by a designated clinic staff member. This was done to help decrease bias in the survey responses. Lastly, as discussed earlier, there is limited research regarding patient beliefs about the role of physical therapists which indicates a need for the data presented.

In contrast, several limitations were also identified in this study. First, no test-retest reliability was determined on the survey due to the small number who participated in the pilot study. Also, this study was a sample of convenience of only outpatient physical therapy patients. This did not provide insight into whether patients' beliefs are altered based on their setting of physical therapy PT. Upon receiving the completed surveys, it was noted that some participants had not responded to all of the questions on the survey, which limited the overall number of surveys used for final data analysis. Finally, the survey did not define the word "discuss" in the question. This was in attempt to gain insight into patient perception free of influence as to how discussion was defined

as in the survey. Despite the intent of the researchers, some patients may have answered differently if “discuss” had been more explicitly defined within the survey.

### **Further Research**

Following this study, several potential future studies were identified which included:

- Further analysis of the data could be conducted to determine if the patient’s beliefs differ between groups such as the acute versus chronic patients, engagers versus non-engagers based on their reported stage of change, or the way in which they were referred to PT.
- A follow-up qualitative study could also be performed to identify the discrepancies that exist between patient beliefs and physical therapists’ practice.
- Only patients from the outpatient setting were considered for the study, a future study could include physical therapy patients from a variety of settings.
- A state to state comparison may be conducted in the future based off the data from Minnesota and Michigan.
- The survey was distributed only in outpatient physical therapy clinics. Surveys could be distributed in other PT settings so as to compare patients’ beliefs in other practice settings.

## Conclusion

This study provides interesting conclusions in regards to patient beliefs about the role of physical therapists in health promotion. It is the goal of the American Physical Therapy Association with Vision 2020<sup>1</sup> that “Consumers will have direct access to physical therapists in all environments for patient/client management, prevention, and wellness services.” What is encouraging from the results of this study is that patients appear to agree or feel neutral about PTs advising them about the 4 personal health behaviors (PHB): physical activity, fruit and vegetable consumption, smoking cessation and healthy weight. This is important as these are a key component of both prevention and wellness. Although these findings were positive, there is a discrepancy between the percent of patients who reported their PT addressed the personal health behaviors and the percent of patients who believed that their PT should advise them about the four PHB. With information from patients such as this, PTs have the opportunity to address prevention and wellness more consistently or find new methods of doing so in order to increase healthy behaviors among their patients and reach the goal of Vision 2020.<sup>1</sup>

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**Table 1: Demographic Characteristics**

<b>Characteristic</b>	<b>N (sd)</b>	<b>%</b>
Mean Age in years, (SD)	56.2 (16.4)	
Mean BMI(Kg/m <sup>2</sup> ) (SD)	26.7 (5.9)	
<b>Sex</b>	<b>n</b>	<b>%</b>
Male	26	26.0%
Female	74	74.0%
<b>Education Level</b>	<b>n</b>	<b>%</b>
Some High School	3	3.0
High School Diploma/equivalent	7	7.1
Some College	25	25.3
Graduated College	34	34.3
Post-graduate College	30	30.3
<b>Physical therapy Prior</b>	<b>n</b>	<b>%</b>
Yes	79	79.0%
No	21	21.0%
<b>Method of Referral to Physical therapy</b>	<b>n</b>	<b>%</b>
Doctor	93	93.9%
Self	5	5.1%
I don't know	1	1.0%
<b>Primary reason for coming to PT</b>	<b>n</b>	<b>%</b>
Neck/headache	7	7.1%
Midback/shoulder blade	3	3.0%
Low back	16	16.2%
Shoulder	15	15.2%
Hip/butt	15	15.2%
Knee/hamstring	21	21.2%
Ankle	7	7.1%
Foot	9	9.1%
Urinary	2	2.0%
<b>Length of treatment for current PT condition</b>	<b>n</b>	<b>%</b>
1-2 weeks	6	6.0%
3-4 weeks	26	26.0%
5-6 weeks	35	35.0%
More than 6 weeks	33	33%
<b>Duration of current condition</b>	<b>n</b>	<b>%</b>
Less than 1 month	5	5.0%
1-6 months	53	53.0%
More than 6 months	42	42.0%

**Table 2:****Physical Activity**

Physical Activity is defined as at least 150 minutes, (2.5 hours) per week, at a moderate intensity. Moderate refers to activities such as a brisk walk (greater than 3mph), water aerobics, bicycling (<10mph), tennis doubles, ballroom dancing, or general gardening.

Agree: represents both strongly agree and agree responses in the survey

Disagree: represents both strongly disagree and disagree responses in the survey

<b>Stage of Change</b>	<b>n</b>	<b>%</b>
Maintenance*	46	46.9%
Action*	11	11.2%
Preparation*	18	18.4%
Contemplation*	16	16.3%
Precontemplation*	7	7.1%
<b>Did your PT talk to you about your PA level?</b>	<b>n</b>	<b>%</b>
Yes	70	70.7%
No	19	19.2%
I don't recall	10	10.1%
<b>Do you agree it is appropriate that your PT should advise you on the recommended levels of regular PA?</b>	<b>n</b>	<b>%</b>
Agree	88	88.0%
Neutral	11	11.0%
Disagree	1	1.0%
<b>Do you agree it is appropriate that you PT should advise you on the benefits of being physically active?</b>	<b>n</b>	<b>%</b>
Agree	94	94.0%
Neutral	5	5.0%
Disagree	1	1.0%
<b>Do you agree it is appropriate that your PT should suggest ways for you to increase your daily PA?</b>	<b>n</b>	<b>%</b>
Agree	90	90.0%
Neutral	8	8.0%
Disagree	2	2.0%
<b>Do you agree it is appropriate that you PT should be physically active as a role model to you?</b>	<b>n</b>	<b>%</b>
Agree	80	80.0%
Neutral	14	14.0%
Disagree	6	6.0%

\* Maintenance is participating in recommended amount of PA for more than 6 months

\*Action is participating in recommended amount of PA less than 6 months

\*Preparation means not yet participating in recommended levels of PA but intention to do so in the next 30 days

\*Contemplation means not yet participating in recommended levels of PA but intention to do so in the next 6 months

\*Precontemplation means not yet participating in recommended levels of PA with no intention to start within the next 6 months

**Table 3:****Fruit and Vegetable Consumption**

Recommended levels of fruit and vegetable consumption are 5 cups of fruits and vegetables each day.

Agree: represents both strongly agree and agree responses in the survey

Disagree: represents both strongly disagree and disagree responses in the survey

<b>Stage of Change</b>	<b>n</b>	<b>%</b>
Maintenance	47	49.0%
Action	9	9.4%
Preparation	11	11.5%
Contemplation	8	8.3%
Precontemplation	21	21.9%
<b>Did your PT talk to you about the amount of fruit and vegetables that you eat each day?</b>	<b>n</b>	<b>%</b>
Yes	4	4.0%
No	89	89.0%
I don't recall	7	7.0%
<b>Do you agree it is appropriate that your PT should advise you in the amount of fruit and vegetables that you eat each day?</b>	<b>n</b>	<b>%</b>
Agree	28	28.3%
Neutral	54	54.5%
Disagree	17	17.2%
<b>Do you agree it is appropriate that your PT should advise you on the benefits of the amount of fruit and vegetables that you eat each day?</b>	<b>n</b>	<b>%</b>
Agree	43	43.0%
Neutral	41	41.0%
Disagree	16	16.0%
<b>Do you agree it is appropriate that your PT should suggest ways for you to increase the amount of fruit and vegetables that you eat each day?</b>	<b>n</b>	<b>%</b>
Agree	53	35.0%
Neutral	54	54.0%
Disagree	11	11.0%
<b>Do you agree it is appropriate that your PT should serve as a role model to you with regards to the amount of fruit and vegetables eaten each day?</b>	<b>n</b>	<b>%</b>
Agree	41	41.0%
Neutral	44	44.0%
Disagree	15	15.0%

\* Maintenance is consuming recommended amount of F&V for more than 6 months

\* Action is consuming recommended amount of F&V less than 6 months

\* Preparation means not yet consuming recommended amount of F&V but intend to do so in the next 30 days

\*Contemplation means not yet consuming recommended amount of F&V but intend to do so in the next 6 months

\*Precontemplation means not yet consuming recommended levels of F&V with no intent to start within the next 6 months



**Table 4:****Smoking Cessation**

It is recommended that all individuals abstain from smoking.

Agree: represents both strongly agree and agree responses in the survey

Disagree: represents both strongly disagree and disagree responses in the survey

<b>Stage of Change</b>	<b>n</b>	<b>%</b>
Never smoked	52	53.6%
Maintenance	35	36.1%
Action	2	2.1%
Preparation	2	2.1%
Contemplation	2	2.1%
Precontemplation	4	4.1%
<b>Did your PT talk to you about your smoking?</b>	<b>n</b>	<b>%</b>
Yes	1	9.1%
No	6	54.5%
I don't recall	4	36.4%
<b>Do you agree it is appropriate that your PT should advise you in abstaining from cigarette smoking?</b>	<b>n</b>	<b>%</b>
Agree	46	48.4%
Neutral	32	33.7%
Disagree	17	17.9%
<b>Do you agree it is appropriate that your PT should advise you on the benefits of not smoking cigarettes?</b>	<b>n</b>	<b>%</b>
Agree	50	52.1%
Neutral	31	32.3%
Disagree	15	15.6%
<b>Do you agree it is appropriate that your PT should suggest ways for you to stop or reduce your smoking cigarettes?</b>	<b>n</b>	<b>%</b>
Agree	47	49.0%
Neutral	35	36.5%
Disagree	14	14.6%
<b>Do you agree it is appropriate that your PT should not smoke as a role model to you?</b>	<b>n</b>	<b>%</b>
Agree	66	66.0%
Neutral	19	19.0%
Disagree	13	13.3%

\* Maintenance means subjects had quick smoking for more than 6 months

\* Action means the subject is a smoker but is in the process of giving up smoking

\* Preparation means the subject is a smoker and intends to quit smoking in the next 30 days

\* Contemplation means the subject is a smoker and intends to quit in the next 6 months

\* Precontemplation means the subject is a smoker and does not intend to quit smoking within the next 6 months

**Table 5:****Maintaining a healthy weight**

Healthy weight is a BMI between 18 kg/m<sup>2</sup> and 25 kg/m<sup>2</sup>

Underweight is a BMI <18 kg/m<sup>2</sup>

Overweight is a BMI between 26 kg/m<sup>2</sup> and 30 kg/m<sup>2</sup>

Obese is a BMI >30 kg/m<sup>2</sup>

Agree: represents both strongly agree and agree responses in the survey

Disagree: represents both strongly disagree and disagree responses in the survey

<b>Body Mass Index (BMI) Classification</b>	<b>n</b>	<b>%</b>
Healthy weight	50	52.1%
Underweight	1	1.0%
Overweight	23	24.0%
Obese	22	22.9%
<b>Stage of Change</b>	<b>n</b>	<b>%</b>
Maintenance	51	53.1%
Action	1	1.0%
Preparation	28	29.2%
Contemplation	12	12.5%
Precontemplation	4	4.2%
<b>Did your PT talk to you about your weight?</b>	<b>n</b>	<b>%</b>
Yes	8	8.1%
No	87	87.9%
I don't recall	4	4.0%
<b>Do you agree it is appropriate that your PT should advise you in maintaining a healthy weight?</b>	<b>n</b>	<b>%</b>
Agree	75	75.8%
Neutral	17	17.2%
Disagree	7	7.1%
<b>Do you agree it is appropriate that your PT should advise you on the benefits of maintaining a healthy weight?</b>	<b>n</b>	<b>%</b>
Agree	78	79.6%
Neutral	16	16.3%
Disagree	4	4.1%
<b>Do you agree it is appropriate that your PT should suggest ways for you to maintain a healthy weight?</b>	<b>n</b>	<b>%</b>
Agree	68	69.4%
Neutral	25	25.5%
Disagree	5	5.1%
<b>Do you agree it is appropriate that your PT should be a healthy weight as a role model to you?</b>	<b>n</b>	<b>%</b>
Agree	68	68.0%
Neutral	21	21.4%
Disagree	9	9.2%

\* Maintenance refers to subjects who are in the healthy weight category and have been for more than 6 months

- \*Action refers to subjects who are in the healthy weight category and have been for less than 6 months
- \*Preparation refers to individuals who do not fall within the healthy weight category and intend to take action to address their weight in the next 30 days
- \*Contemplation refers to individuals who do not fall within the healthy weight category and intend to take action to address their weight in the next 6 months
- \*Precontemplation refers to individuals who do not fall within the healthy weight category and do not intend to take action to address their weight within the next 6 months

### **Appendix A-Survey**

The following survey includes general questions about your background and your personal habits in the areas of physical activity, nutrition, smoking, and healthy weight. There are also questions asking you what you believe the role of a physical therapist to be with regard to discussing these health behaviors with you. Please answer each question to the best of your ability. There is no correct answer so please respond by selecting the ONE choice which **best** describes you. You may skip any question that you are not comfortable answering.

It should take you 20 minutes or less to complete this survey.

The physical therapist(s) that were treating you during your most recent physical therapy session will NOT be informed as to whether or not you completed this survey. The information from your completed survey will NEVER be shared with the physical therapist(s) that were treating you.

Please do NOT put your name or address on this survey or on the envelope that you will use to return the survey.

1. How old did you turn on your last birthday?  
\_\_\_\_\_ Years
2. What is your sex?  
\_\_\_\_ 1. Male  
\_\_\_\_ 2. Female
3. How much schooling have you completed?  
\_\_\_\_ 1. Some high school  
\_\_\_\_ 2. High school diploma or equivalent  
\_\_\_\_ 3. Some college  
\_\_\_\_ 4. Graduated college  
\_\_\_\_ 5. Post graduate education
4. Have you been treated by a physical therapist for any condition prior this physical therapy episode of care?  
\_\_\_\_ 1. Yes  
\_\_\_\_ 2. No  
\_\_\_\_ 3. I don't know
5. How did you come to physical therapy for this current episode of care?  
\_\_\_\_ 1. My doctor referred me  
\_\_\_\_ 2. I came directly to physical therapy without a doctor's referral  
\_\_\_\_ 3. I don't know
6. What is the PRIMARY condition for which you are currently being seen for in physical therapy? PLEASE SELECT ONLY ONE RESPONSE  
\_\_\_\_ 1. neck problem/headache  
\_\_\_\_ 2. mid back/shoulder blade problem  
\_\_\_\_ 3. low back problem  
\_\_\_\_ 4. shoulder problem  
\_\_\_\_ 5. elbow problem  
\_\_\_\_ 6. wrist/hand problem  
\_\_\_\_ 7. hip/buttock problem  
\_\_\_\_ 8. knee/hamstring problem  
\_\_\_\_ 9. ankle problem  
\_\_\_\_ 10. foot problem  
\_\_\_\_ 11. balance concerns  
\_\_\_\_ 12. prevention of injury  
\_\_\_\_ 13. urinary incontinence  
\_\_\_\_ 14. general conditioning  
\_\_\_\_ 15. other (please specify)

7. Have you been treated by a physical therapist for at least 3 sessions for your most current condition?
- 1. Yes
  - 2. No
8. For how long was or has your physical therapist been treating you for your most current condition?
- 1. 1-2 weeks
  - 2. 3-4 weeks
  - 3. 5-6 weeks
  - 4. more than 6 weeks
  - 5. I don't know
9. For how long have you had the condition you are currently being treated for in physical therapy?
- 1. less than 1 month
  - 2. for about 1-6 months
  - 3. for more than 6 months
  - 4. I don't know

The next set of questions pertains to your physical activity level. When you see the word “Moderate” in the question we are referring to activities such as a brisk walk (greater than 3mph), water aerobics, bicycling (<10mph), tennis doubles, ballroom dancing, or general gardening. There is no right or wrong answer to these questions. Please mark the ONE response that best describes your current behavior

10. Do you exercise at a moderate intensity, as defined above, for at least 150 minutes (2.5 hours) per week? For example: 30 minutes for 5 days/week PLEASE SELECT ONLY ONE RESPONSE

- 1. Yes, and I have been for more than 6 months
- 2. Yes, and I have been for less than 6 months
- 3. No, but I intend to start within the next 30 days
- 4. No, but I intend to start within the next 6 months
- 5. No, and I do not intend to start within the next 6 months

11. Did your physical therapist(s) talk to you about your physical activity level?

- 1. Yes
- 2. No
- 3. I do not recall

12. Do you agree it is appropriate that your physical therapist(s) should advise you on the recommended levels of regular physical activity?

- 1 = Strongly Agree
- 2 = Agree
- 3 = Neutral
- 4 = Disagree
- 5 = Strongly Disagree

13. Do you agree it is appropriate that your physical therapist(s) should advise you on the benefits of being physically active?

- 1 = Strongly Agree
- 2 = Agree
- 3 = Neutral
- 4 = Disagree
- 5 = Strongly Disagree

14. Do you agree it is appropriate that your physical therapist(s) should suggest ways for you to increase your daily physical activity?

- 1 = Strongly Agree
- 2 = Agree
- 3 = Neutral
- 4 = Disagree
- 5 = Strongly Disagree

15. Do you agree it is appropriate that your physical therapist(s) should be physically active as a role model to you?

\_\_\_1 = Strongly Agree

\_\_\_2 = Agree

\_\_\_3 = Neutral

\_\_\_4 = Disagree

\_\_\_5 = Strongly Disagree



In this next series of questions we ask you to respond to questions about your eating of fruits and vegetables. There is no right or wrong answer to these questions. Please mark the ONE response that best describes your current behavior.

16. . Using the examples below, do you consume a total of 5 cups per day of fruits and vegetables every day? PLEASE SELECT ONLY ONE RESPONSE

1. Yes, and I have been for more than 6 months  
 2. Yes, and I have been for less than 6 months  
 3. No, but I intend to start within the next 30 days  
 4. No, but I intend to start within the next 6 months  
 5. No, and I do not intend to start within the next 6 months

Below are examples of 1 Cup and ½ Cup fruit and vegetables servings. If you cannot find examples of the types of fruits and vegetables that you eat, please use your best estimate of 1 cup and ½ cup servings.

### 1 CUP Examples



1 Large banana



1 Medium grapefruit



8 Large strawberries



1 Small apple



1 Large ear of corn



1 Medium potato



12 baby carrots



1 cup cooked spinach or  
2 cups raw

### ½ CUP Examples



1/2 Medium grapefruit



1 Medium cantaloupe wedge



10 grapes



1 Large plum



4 broccoli florets



6 baby carrots



1/2 Large sweet potato



1 Large stalk of celery

17. Did your physical therapist(s) talk to you about the amount of fruit and vegetables that you eat each day?

1. Yes  
 2. No

\_\_\_ 3. I do not recall

18. Do you agree it is appropriate that your physical therapist(s) should advise you in amount of fruit and vegetables that you eat each day?

\_\_\_ 1 = Strongly Agree

\_\_\_ 2 = Agree

\_\_\_ 3 = Neutral

\_\_\_ 4 = Disagree

\_\_\_ 5 = Strongly Disagree

19. Do you agree it is appropriate that your physical therapist(s) should advise you on the benefits of the amount of fruit and vegetables that you eat each day?

\_\_\_ 1 = Strongly Agree

\_\_\_ 2 = Agree

\_\_\_ 3 = Neutral

\_\_\_ 4 = Disagree

\_\_\_ 5 = Strongly Disagree

20. Do you agree it is appropriate that your physical therapist(s) should suggest ways for you to increase the amount of fruit and vegetables that you eat each day?

\_\_\_ 1 = Strongly Agree

\_\_\_ 2 = Agree

\_\_\_ 3 = Neutral

\_\_\_ 4 = Disagree

\_\_\_ 5 = Strongly Disagree

21. Do you agree it is appropriate that your physical therapist(s) should serve as a role model to you with regards to the amount of fruit and vegetables eaten each day?

\_\_\_ 1 = Strongly Agree

\_\_\_ 2 = Agree

\_\_\_ 3 = Neutral

\_\_\_ 4 = Disagree

\_\_\_ 5 = Strongly Disagree

The next series of questions ask you to respond to questions about cigarette smoking. There is no right or wrong answer to these questions. Please mark the **ONE** response that best describes your current behavior.

22. Do you smoke cigarettes? PLEASE SELECT ONLY ONE RESPONSE

- 1. I have never smoked cigarettes
- 2. I have quit for more than 6 months
- 3. Yes, but I am in the process of giving up smoking
- 4. Yes, but I intend to quit smoking in the next 30 days
- 5. Yes, but I intend to quit smoking in the next 6 months
- 6. Yes, and I do not intend to quit smoking in the next 6 months

If you responded to the above question by marking numbers 1 or 2, please **skip** the next question (Question 23) and continue the survey at question 24. If you responded “**YES**” to the above question by marking numbers 3, 4, 5, or 6 please continue with the next question (Question 23).

23. Did your physical therapist(s) talk to you about your smoking?

- 1. Yes
- 2. No
- 3. I do not recall

24. Do you agree it is appropriate that your physical therapist(s) should advise you in abstaining from cigarette smoking?

- 1 = Strongly Agree
- 2 = Agree
- 3 = Neutral
- 4 = Disagree
- 5 = Strongly Disagree

25. Do you agree it is appropriate that your physical therapist(s) should advise you on the benefits of not smoking cigarettes?

- 1 = Strongly Agree
- 2 = Agree
- 3 = Neutral
- 4 = Disagree
- 5 = Strongly Disagree

26. Do you agree it is appropriate that your physical therapist(s) should suggest ways for you to stop or reduce your smoking cigarettes?

- 1 = Strongly Agree
- 2 = Agree

- \_\_\_ 3 = Neutral
- \_\_\_ 4 = Disagree
- \_\_\_ 5 = Strongly Disagree

27. Do you agree it is appropriate that your physical therapist(s) should not smoke as a role model to you?

- \_\_\_ 1 = Strongly Agree
- \_\_\_ 2 = Agree
- \_\_\_ 3 = Neutral
- \_\_\_ 4 = Disagree
- \_\_\_ 5 = Strongly Disagree

In this final series of question we ask you respond to questions about your body weight. There is no right or wrong answer to these questions. Please mark the ONE response that best describes your current behavior.

28. Using the table below, please find your weight on the left side of the table and your height on the top of the table. If you don't know your exact height and weight, please use your best estimate. Please circle on the table where your height and weight meet and write this number in the space below.

The number that corresponds to where my height and weight meet is: \_\_\_\_\_

Height In feet

		4' 10"	4' 11"	5'	5' 1"	5' 2"	5' 3"	5' 4"	5' 5"	5' 6"	5' 7"	5' 8"	5' 9"	5' 10"	5' 11"	6'	6' 1"	6' 2"	6' 3"	6' 4"
W e i g h t  i n p o u n d s	90	19	18	18	17	16	16	15	15	15	14	14	13	13	13	12	12	12	11	11
	100	21	20	20	19	18	18	17	17	16	16	15	15	14	14	14	13	13	12	12
	110	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15	15	14	14	13
	120	25	24	23	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15	15
	130	27	26	25	25	24	23	22	22	21	20	20	19	19	18	18	17	17	16	16
	140	29	28	27	26	26	25	24	23	23	22	21	21	20	20	19	18	18	17	17
	150	31	30	29	28	27	27	26	25	24	23	23	22	22	21	20	20	19	19	18
	160	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21	20	19
	170	36	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21
	180	38	36	35	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22
	190	40	38	37	36	35	34	33	32	31	30	29	28	27	26	26	25	24	24	23
	200	42	40	39	38	37	35	34	33	32	31	30	30	29	28	27	26	26	25	24
	210	44	42	41	40	38	37	36	35	34	33	32	31	30	29	28	28	27	26	26
	220	46	44	43	42	40	39	38	37	36	34	33	32	32	31	30	29	28	27	27
	230	48	46	45	43	42	41	39	38	37	36	35	34	33	32	31	30	30	29	28
	240	50	48	47	45	44	43	41	40	39	38	36	35	34	33	33	32	31	30	29
	250	52	50	49	47	46	44	43	42	40	39	38	37	36	35	34	33	32	31	30
	260	54	53	51	49	48	46	45	43	42	41	40	38	37	36	35	34	33	32	32
	270	56	55	53	51	49	48	46	45	44	42	41	40	39	38	37	36	35	34	33
	280	59	57	55	53	51	50	48	47	45	44	43	41	40	39	38	37	36	35	34

29 0	61	59	57	55	53	51	50	48	47	45	44	43	42	40	39	38	37	36	35
30 0	63	61	59	57	55	53	51	50	48	47	46	44	43	42	41	40	39	37	37

29. The shaded area on the table corresponds to a range of healthy weight. According to the table above is your body weight in the healthy weight range (in the shaded area)?

PLEASE SELECT ONLY ONE RESPONSE

1. Yes, and it has been for more than 6 months  
 2. Yes, and it has been for less than 6 months  
 3. No, and I intend to take action to address my weight in the next 30 days  
 4. No, and I intend to take action to address my weight in the next 6 months  
 5. No, and I do not intend to take action addressing my weight within the next 6 months

30. Did your physical therapist(s) talk to you about your weight?

1. Yes  
 2. No  
 3. I do not recall

31. Do you agree it is appropriate that your physical therapist(s) should advise you in maintaining a healthy weight?

- 1 = Strongly Agree  
 2 = Agree  
 3 = Neutral  
 4 = Disagree  
 5 = Strongly Disagree

32. Do you agree it is appropriate that your physical therapist(s) should advise you on the benefits of maintaining a healthy weight?

- 1 = Strongly Agree  
 2 = Agree  
 3 = Neutral  
 4 = Disagree  
 5 = Strongly Disagree

33. Do you agree it is appropriate that your physical therapist(s) should suggest ways for you to maintain a healthy weight?

- 1 = Strongly Agree  
 2 = Agree  
 3 = Neutral  
 4 = Disagree  
 5 = Strongly Disagree

34. Do you agree it is appropriate that your physical therapist(s) should be a healthy weight as a role model to you?

\_\_\_\_ 1 = Strongly Agree

\_\_\_\_ 2 = Agree

\_\_\_\_ 3 = Neutral

\_\_\_\_ 4 = Disagree

\_\_\_\_ 5 = Strongly Disagree

**Thank you for your completion of the survey. Please return the survey in the addressed and stamped envelope that was included with the survey.**

**If you have misplaced or did not receive the envelope please mail your survey to:**

MarySue Ingman, PT, DSc  
St Catherine University DPT Program  
601 25<sup>th</sup> Ave So  
Minneapolis, MN 55454

### **Appendix B-Script for Clinic receptionists:**

- Your PT has indicated that you qualify to participate in a research study being conducted by students and faculty at St Catherine University Doctor of Physical Therapy Program
- The study involves you completing a survey and mailing it back
- Here is a packet that explains the study and includes the survey for you complete at home and mail in
- This is totally optional
- Would you like a packet?

(NOTE TO STAFF: Frequently asked questions and the appropriate responses are on the back of this sheet.)

### **Frequently asked questions that the clinic receptionist may be asked:**

- *What is the survey about?*
  - It is a study to see what our patients think about physical therapists discussing various health behaviors with them; behaviors such as engaging in physical activity, healthy eating, healthy weight, and not smoking.
- *What if I don't want to take a packet?*
  - This is totally optional; accepting or not accepting the packet has no bearing on your relationship with Fairview IAM. Even if you do take the packet, you may decide after reading the information that you do not want to participate.
- *Will my PT see my completed survey? Or know whether I completed the survey?*



- There will be no way of identifying if you have or have not participated as no names are recorded anywhere in this process.
- If you do participate and complete the survey, your physical therapist will not know who you are as there is no name recorded anywhere on the survey, and it is sent directly to the physical therapy professor at St. Catherine University who is conducting this research with us.

## **Appendix C- Information sheet for Research**

### *Physical Therapists' Role in Health Promotion as Perceived by the Patient: A Descriptive Study*

You are invited to be in a research study of patients' opinions about physical therapists discussing health behaviors with them during treatment. You were selected as a possible participant because you finished physical therapy at a Fairview Institute for Athletic Medicine (IAM) clinic. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Melissa Shirriff, PT a researcher from Fairview IAM, and MarySue Ingman, PT, DSc, a researcher from St. Catherine University.

#### **Procedures:**

If you agree to be in this study, we would ask you to complete the attached survey. The survey will take about 20 minutes to complete. It asks questions about you, your health behaviors, and your opinions about physical therapists discussing health behaviors with patients. You are free to not answer any question on the survey that you do not wish to answer.

You would complete the survey either today or tomorrow. When you finish it, you would mail it to the researchers in the stamped envelope provided.

If you chose to complete the surveys, you may enter a raffle for a \$100 VISA gift card. To enter the raffle, you would fill out the postcard with your contact information and put it in the mail. If you win, we will mail the gift card to you.

#### **Confidentiality:**

The survey does not ask for your name or address. We will not know who participated and who did not participate in the study. The postcard for the raffle drawing will be sent to a different location than the surveys. We will not be able to match your name to the survey.

The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records.

#### **Voluntary Nature of the Study:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota, Fairview IAM, or Saint Catherine University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

#### **Contacts and Questions:**

The researchers conducting this study are Melissa Shirriff and MarySue Ingman. If you have questions, **you are encouraged** to contact them at 651.690.7813 or msingman@stkate.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

*You will be given a copy of this information to keep for your records.*

*If you complete the survey, you are giving your consent to participate in the study.*