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Effect of Self-Determination, Motivation, and Dispositional Optimism with Physical Therapy in Geriatric Patients

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

Older people are frequently faced with physical conditions that require treatment. A better understanding of the components of engagement relating to the outcomes of treatment was the focus of the study. The purpose of this quantitative study was to examine whether there was an association between the independent variables of optimism, pessimism, motivation, and self-determination and their impact on the dependent variable of achieving physical activity goals in 86 geriatric patients, ages 65 to 80 receiving physical therapy services. The theoretical framework of self-determination, motivation, optimism, and pessimism was assessed by using two self-report questionnaires, The Self-Determination Scale and The Revised Life Orientation Test, along with reviewing physical therapy evaluations, progress notes, and discharge summaries. It was found through the use of a multiple regression analysis that no significant difference in modified independence existed between those with low versus high optimism, pessimism, self-determination, and motivation; there was also no significant difference in the number of physical therapy goals achieved upon discharge. The findings of this study warrant further research on the connection between cognitive and physical abilities and the decline of health due to the aging process. The implication of social change is the need for continued research for clarification of what has been provided through previous research that high levels of optimism, self-determination, and motivation explain a positive outcome in the treatment, rehabilitation process, and achievement of goals versus the contradictory results demonstrated in this research study.

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Dedication

I want to dedicate my dissertation to my loving and supportive husband, Mark Bodnar, who encouraged me from start to finish in completing this stressful process, and our four loving children, Mark, Kearra, Christopher, and Michelle, who gave me the motivation to accomplish this difficult task.

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Table of Contents

List of Tables

Chapter 1: Introduction to the Study

The geriatric population is increasing as a result of people living longer. As this population expands, more and more people experience a decline in physical function, which leads to a decrease in independence and an increase in assistance from caregivers in performing activities of daily living such as transfers, ambulation, and stair training. Cardenas, Henderson, and Wilson (2009), wrote that according to the United States Department of Health and Human Services people who become inactive can experience an increase in health problems, decline in functional mobility, and decrease in quality of life.

The effect of optimism versus pessimism in many areas of life and human endeavor has often been studied. It has been an area of interest for more than 200 years (Chang, 1996). Since the beginning of this century, the optimism-versus-pessimism question has inspired researchers to explore these concepts in the areas of personality and in social, clinical, and health psychology. According to Scheier and Carver (1987), the terms optimism and pessimism can be generalized to stand for a person's positive or negative outcome expectancies; these terms further represent, promote, or lessen an individual's psychological and physiological well-being (Chang, 1996).

Optimism and pessimism have often been researched with participants who provided self-report measures concerning their state of health and well-being. Past studies have demonstrated that dispositional optimism is correlated with physiological and psychological outcomes, such as health symptoms, depressive symptomatology, coping,

adjusting to breast cancer, and the ability to recover from surgery (Brenes, Rapp, Rajeski, & Miller, 2002).

An important factor to be addressed in this study is physical function. As people age, they experience a decrease in physical function, and the decrease is more rapid with each passing year (Hays, Sauders, Flint, Kaplan, & Blazer, 1997). Because the elderly population continues to expand, it is urgent that research be conducted to address such future issues as it is the prediction that more elderly people will lack the ability to take care of themselves or be able to live independently. Morey et al. (2008) noted that a decline in physical function can increase an individual's risk of mortality, disability, and difficulty in performing activities of daily living and exacerbate social isolation. In addition, Carles et al. explained that motiviation is an important factor to study:

> In order to help the elderly to improve or maintain physical function, it seems necessary for researchers to explore motivation. Motivation is defined as an internal condition that activates behavior and gives it direction; motivation energizes and directs goal-oriented behavior. It is a condition that comes from within a living individual; it assists in performing a type of behavior or in pursuing a goal in life. Motivation can entail an individual's desires or wants, which direct a person to perform a specific behavior. (2007, p. 369)

Motivation has been linked with optimism and pessimism and with physical function in theory and in research. However, the vast majority of research available on motivation, optimism, and pessimism relates to health problems such as cancer, HIV, stroke, diabetes, and cardiovascular illnesses (Hays et al., 1997). Only very limited

research is available on optimism, pessimism, and motivation in connection with physical function that pertains to conducting activities of daily living. In other words, research on the geriatric population and physical function is scarce. Furthermore, very few studies contain objective physical evidence. A rare exception is the study by Umstattd, McAuley, Motl, and Rosengren (2007), in which dispositional optimism, pessimism, self-efficacy, and objective physical function were addressed, and the participants were instructed to ascend and descend stairs and walk 7 meters without any obstacles in their path. The participants also performed the 8-foot get-up-and-go test, which is a physical test in which the participants stand up, walk 8', and return to the sitting position while being timed. Although Umstattd et al. (2007) used objective physical measurements, it had limitations: The sample was limited to 249 older women with an average age of 69 years. However, this particular study is one of the few that laid the foundation and exposed the need for further research on physical function in the elderly population. This research gave rise to an exploration of aging and its effect on physical function.

In contrast, dispositional optimism and pessimism have received little attention in conjunction with physical function or physical activities. Few studies have been undertaken on the effects of optimism versus pessimism in an objective setting, and few studies have achieved observable behavioral outcomes. A study by Brenes, Rapp, Rejeski, and Miller (2002) can serve as an example of how optimism, pessimism, and objective physical functioning can be measured in individuals with knee pain. Although the research dealt with physical function and optimism and pessimism, it had some limitations. The study was confined to 480 participants with knee pain and four activities:

walking, lifting an object, climbing stairs, and getting in and out of a car. Brenes et al. (2002) focused on four specific activities that produced knee pain when performed. Although the main focus of this study was to measure the pain levels experienced by participants as they performed each activity, it also laid the foundation for researchers to explore and measure cognitive abilities along with physical functional capabilities.

Overall, a vast amount of research was performed on optimism, pessimism, and motivation; however, many of these studies used self-report questionnaires, which have been suspected of recall bias and memory distortion and are criticized for being subject to the current mood of participants (Steptoe, O'Donnell, Marmot, & Wardle, 2008). Only a limited number of studies have used observable physical activities with objective measurements. Notably scarce were studies on physical functioning or physical activities among the geriatric population. Detailed information of the statement of the problem, purpose of the study, research questions, theoretical basis, and the significance of the study are covered in greater detail in Chapter 1.

Background of the Study

The human body undergoes many physiological or biological changes. The body starts to decline after the age of 35 years when the cardiovascular system starts to deteriorate, and lung volume and muscle strength decrease (Renner, Spivak, Kwon, & Schwarzer, 2007). As the human body starts to decline, individuals become more susceptible to illnesses, which create a subjective and objective awareness of health goals (Renner et al., 2007). Among the declining physical abilities due to age are balance and stability, which leads to problems with a person’s ability to ambulate. The deterioration

of ambulation is noticeable because it is a complex skill that, after taking years to master, becomes automatic and effortless (Renner et al., 2007). The automatic factor diminishes which causes disturbances in a person's gait pattern and places the person at a risk for falling (Gschwind, Bridenbaugh, & Kressig, 2010). Psychomotor speed also decreases, causing a person to become slower in performing an activity. This is evident when a person needs to provide a motor response to an external stimulus. This difference is easily demonstrated by comparing the movements of a younger and an older person. The older person moves at a slower pace, and the movements are divided into several phases, which makes the movement appear less smooth or less fluid (Costarella, Monteleone, Steindler, & Zuccaro, 2010). In addition to the decreasing balance, muscle strength also decreases in the aging body. According to Gschwind et al. (2010), the human body experiences a decline in skeletal muscle mass, called sarcopenia, by approximately 1% to 2% per year after the 50th birthday, which leads to a decline in strength and function and an increasing frailty. According to Campbell, Borrie, and Spears (1989) and Rao (2005), approximately one third of the people over 65 years of age experience a fall once a year, and half of this one third experience more than one fall within a few months or a shorter time frame.

Furthermore, psychological and cognitive changes also occur over the human life span. When the human body starts to decline, the physical strain and stress from the aging body or from chronic illnesses affect cognitive well-being (Renner et al., 2007). According to Costarella et al. (2010), research has demonstrated that there is gradual and progressive loss of intellectual abilities, beginning at age 70 or 80 and definitely

noticeable around the age of 90 years. The human brain undergoes changes such as loss of brain volume, decrease in the number of neurons transmitting or firing in the brain, and a decrease of the production of dendrite arborization (Costarella et al., 2010).

Some of the major physical changes such as becoming shorter in stature, extreme weight loss, loss of balance, and increased stiffness in the joints can contribute to such psychological factors as low self-esteem, lack of motivation, and depression in the geriatric population. In addition, the human brain functions more slowly, and the ability to recall information becomes more difficult for some people (Costarella et al., 2010). This leads to stress, frustration, and anxiety, which may have an impact on individuals and determine whether they have a positive or negative outlook on life or if they can remain positive regardless of the situation they are experiencing (Umstattd et al., 2007).

The existing literature addressed some key psychological factors with importance to an aging population, namely, depression, self-esteem, coping skills, and social support. Lacking are studies that incorporate a focus on optimism, pessimism, and motivation and their relationship to physical activity. One important study by Hays et al. (1997) dealt with physical activity and its relationship to depression. Since the participants were experiencing depression, they demonstrated a decrease in physical function such as personal care abilities; muscle strength; range of motion; and the ability to ambulate, climb stairs, or perform heavy housework. People in a depressed mood were not able to move around in their environment and take care of their basic needs. In this particular study, people who had a good social support system exhibited a decrease in physical functioning because they received constant help (Hays et al., 1997). As a result of this

constant help, they learned to perceive themselves as incapable of performing physical activities, and they performed them less often. On the other hand, elders who provided support and assistance to other elders believed that they needed to continue with such services, which motivated them to preserve their functional capabilities for the sake of others as well as for their own well-being (Hays et al., 1997). This study also showed that people who had good socialization within a group were motivated to perform certain functional activities, whereas depressed persons lacked the motivation to interact or socialize within a group; consequently, they also lost the motivation to maintain their functional abilities (Hays et al., 1997).

Considering the extension of the human life span over the past century, it is important to study the quality of life of older people. Factors that are important to explore among the geriatric population are their level of independence, their physical ability to move about, and their ability to cope in spite of physical and mental changes that may affect their quality of life. Because the body undergoes developmental changes as the aging process proceeds, it is important to promote the idea that research among the geriatric population is necessary to explore and learn about physical limitations, physical and cognitive deficits, future and realistic goals, and the different outlook on life one may acquire thanks to the aging process. Individuals living and facing their state as elders recognize that they have different physical and cognitive capabilities than younger adults. According to Bowling, Banister, Sutton, Evans, and Windsor (2002), the main factors to consider and research among people over 65 years of age are “being able to move around physically without any restrictions or difficulties, being better off than other people,

being able to take care of oneself, and being able to achieve greater accomplishments than one ever thought possible" (p. 361). It is important to realize that a decline in physical function occurs as people age; the older people become, the more they decline physically and cognitively (Hays et al., 1997).

Problem Statement

People in the 20th century are living longer and often face a decline of their physical functions. Umstattd et al. (2007) reported that, in 2002, the National Center of Health Statistics found that 63% of individuals in the United States, aged 65 years, were experiencing some kind of functional limitation in the areas of walking, climbing, standing, sitting, stooping, reaching, grasping, carrying, or punching. Cardenas et al. (2009) wrote that the U.S. Census Bureau referred to this phenomenon as "the graying of America" (p. 41). In 1996, the U.S. Department of Health and Human Services warned that "sedentary living and physical inactivity in older adults can create health problems and diminish their quality of life" (as cited in Cardenas et al., 2009, p. 41). In 2005, the Centers for Disease Control and Prevention reported that

> Only a third of persons aged 65 years and older participate in regular sustained physical activity which consists of 30 minutes or more of moderate physical activity five or more days per week or vigorous physical activity for 20 minutes or more three or more days per week. (as cited in Cardenas et al., 2009, p. 41).

Brenes et al. (2002) noted that, from a cognitive overview, people's optimistic or pessimistic outlook on life can affect the choices they make regarding health, physical activities, and physical conditioning, which can lead to physical disabilities. This outlook

on life can have an impact on exploring different treatment choices, continuing with a treatment plan, or staying or becoming physically active to prevent or reduce physical disabilities in the first place.

According to Renner et al. (2007), one important factor is motivation because, as people transition through the different life phases of a long life span, their perspective on life changes. Based on changes in the human body, an individual undergoes motivational changes as well; for example, the aging adult (after 40 years of age) performs physical activity in order to maintain muscle tone and body shape because muscle tone starts to diminish at this age. Physical exercise is performed in order to stay physically fit. After middle adulthood, people will often work to maintain their physical abilities and physical function and tend to avoid loss and decline (Renner et al., 2007). Younger adults will have goals geared toward gaining and striving and not many objectives deal with fear of loss and avoidance. Older adults, by contrast, will shape and gear their life toward preventing loss. In addition, the older adult's motivation to participate in physical activities and to maintain physical function is based on the individual's drive and desire to stay healthy and minimize any health risks (Renner et al., 2007).

As physical activity declines in an aging body, there will come times when people are faced with physical difficulties such as not being able to climb out of bed, ambulate, or ascend and descend stairs. In order to get back to their previous level of physical functioning, people may avail themselves of physical therapy services, which consist in muscle re-education, strengthening, and training of functional activities such as ambulation, transfers, bed mobility, and stair training. Physical therapy services are

provided to people in a subacute facility with the goal of restoring their prior level of function, which may mean being able to perform functional activities such walking, transferring from a bed or chair, and ascending and descending stairs independently (McVey, Becker, Saltz, Feussner, & Cohen, 1989).

Individuals will reside in a subacute facility until they are well enough to go home either alone or with a caregiver if they are not able to perform functional activities independently. When an individual is discharged to home, physical therapy services are recommended at home so that the patient can continue to recover and be able to function in the home environment. It also allows the individual to transition more easily from the facility to the home environment. The goal of physical therapy services is to help patients stay independent as long as possible. However, when individuals do not achieve independence in performing functional activities and require assistance in this area, it is recommended that they live with a family member or caregiver who can provide the assistance needed (McVey et al., 1989).

Individuals who do not have family members or a caregiver to assist with physical activities such as transferring in and out of bed, ambulating, or ascending and descending stairs are referred to a long-term facility in which proper care can be provided by trained professionals. Long-term care facilities have become popular in the United States; approximately 1.8 million individuals reside in a long-term care facility because it provides the physical and emotional care, medication, and supervision that the patient would not be able to receive at home, especially when the prior level of functioning (i.e.,

performing physical activities independently) has not been achieved at the time the patient is discharged from the subacute facility (Kane, Yochim, & Lichtenberg, 2010).

Human beings undergo many developmental changes, or phases, throughout their life span. The aging process marks such a phase during which physical and cognitive abilities tend to decline. The professional literature showed a paucity of research in this area. This gap in the literature represents an opportunity for researchers to provide objective physical measurements of the aging process. A clear need for further investigation exists on the relationship between self-determination, motivation, optimism, and pessimism, and their effect on physical function in the geriatric population.

Purpose of the Study

The purpose of this quantitative study was to examine whether optimism, pessimism, self-determination, and motivation were associated with achieving physical activity goals in geriatric patients receiving physical therapy services. The research questions were derived from a review of the existing literature in the areas of optimism, pessimism, self-determination, motivation, and physical activity. The association between the variables of optimism, pessimism, motivation, self-determination, and their impact on achieving physical activity goals among geriatric participants receiving physical therapy services is discussed in greater detail in Chapter 3; also discussed is the nature of this research study.

Research Questions and Hypotheses

Research Question 1

Does self-determination/motivation play any part in achieving the greatest level of physical function, which is modified independence among geriatric patients receiving physical therapy treatment?

$H_0$1: There is no statistically significant difference in achieving modified independence between geriatric patients who are more self-determined/motivated, as measured by the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are less self-determined, as measured by a lower score on the Perceived Choice subscale of the Self-Determination Scale.

H_a1: There is a statistically significant difference in achieving modified independence between geriatric patients who are more self-determined/motivated, as measured by the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are less self-determined, as measured by a lower score on the Perceived Choice subscale on the Self-Determination Scale.

Research Question 2

Does optimism relate to achieving a greater level of physical function, which is modified independence, among geriatric patients receiving physical therapy treatment?

$H_0$2: There is no statistically significant difference in modified independence achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the scores on the Life Orientation Test-Revised.

H_a2: There is a statistically significant difference in modified independence achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the scores on the Life Orientation Test-Revised.

Research Question 3

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are less self-determined and geriatric patients who are more self-determined upon discharge from physical therapy services?

$H_0 3$: There is no statistically significant difference in achieving all three physical therapy goals between geriatric patients who are less self-determined, as measured by a low score on the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are more self-determined, as measured by a higher score on the Perceived Choice subscale on the Self-Determination Scale.

$H_a 3$: There is a statistically significant difference in achieving all three physical therapy goals between geriatric patients who are less self-determined, as measured by a low score on the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are more self-determined, as measured by a higher score on the Perceived Choice subscale on the Self-Determination Scale.

Research Question 4

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic upon discharge from physical therapy services?

$H_0$4: There is no statistically significant difference in achieving all three physical therapy goals between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the Life Orientation Test-Revised.

H_a4: There is a statistically significant difference in achieving all three physical therapy goals between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the Life Orientation Test-Revised.

Theoretical Foundation

In order to provide assistance or develop strategies to improve the physical well-being of older adults, it is important to explore motivational factors that can be successfully implemented and related to the geriatric population. This research study is supported by the transtheoretical model (TTM), or stages of change model, proposed by Prochaska and DiClemente, in 1982, and expanded by Ryan and Deci (2000) into their self-determination theory. This theory aims to explain how an individual utilizes personal and environmental characteristics to determine his or her behavior in a particular circumstance (Russell & Bray, 2010). It addresses various areas of motivation and how individuals can use controlled motivation to perform a particular behavior because it can fulfill a desire, earn a reward, or help to avoid punishment. Controlled motivation is based on factors that are either internal or external. An internal factor could, for example, pertain to avoidance of a negative feeling such as guilt. An external factor might pertain to a person's need to be wanted or gaining acceptance by others (Ryan, Patrick, Deci, & Williams, 2008).

According to Ryan et al. (2008), self-determined motivation is based on an individual's desire to take an active role in directing or determining his or her behavior. An individual undergoes internalization, which is based on the meaning or the level of importance a particular behavior has for the individual. The behavior is based on the person's value system and the specific needs that elicit this particular behavior. Although various forms of motivation can affect behavior, self-determined motivation is most correlated with changed behavior that is successfully maintained over a long period of time.

In 1992, Prochaska, DiClemente, and Norcross provided insight into motivation and physical activity through the stages of change model or TTM for predicting behavior that is related to health. The theory explains how individuals are moving through different stages, or phases, and how they change their behavior to meet the requirements of each successive stage of life. The stages of change theory is undergirding this research, which aims at studying individuals who are undergoing a change in behavior with the goal of becoming more physically active. In the TTM, or stages of change theory, individuals go through different stages, starting with precontemplation when the person expresses no desire to change; thus, no activity is performed within a 6-month time frame. Individuals may, in fact, try to justify why they are not ready to change, find value in their current behavior, and focus on any risks in changing their behavior (Prochaska et al., 1992).

According to Prochaska et al. (1992) the second stage is contemplation, in which individuals express a desire to change or are considering to make a change; however,

they do not take action to resolve their situation. At this stage, commitment to change or taking action is not taking place because the negative and positive aspects of the situation are being weighed. The third stage is preparation, which involves making a commitment or taking action within 30 days to change a particular behavior. The individual has established a plan to attempt a behavior change. Some physical activity has been initiated; however, the recommended guidelines for the activity are not being met. The fourth stage is taking action and meeting the recommended guidelines, which entails moderate activity for 30 minutes most days of the week for up to 6 months. The fifth stage is maintenance, in which the individual will sustain his or her new behavior. It usually starts after 6 months and can last up to 5 years. An individual will establish a support system, continue or reinforce internal rewards, and make specific plans in case of a relapse. The individual is meeting the recommended guidelines for the physical activity (Prochaska et al., 1992).The sixth and last stage is termination, in which an individual does not demonstrate a desire to return to the previous lifestyle or behavior. At this point, the individual feels confident and assertive about not returning to a previous lifestyle or behavior, meaning that the person has given up a particular negative habit or behavior.

The theories of Prochaska and DiClemente (1982) provided the foundation for the self-determination theory, formulated by Deci and Ryan in 2008. Deci and Ryan explained the self-determination theory as consisting of different types of motivation from amotivation, nonself-determined extrinsic motivation, self-determined extrinsic motivation, and intrinsic motivation. Amotivation is defined as having no motivation, especially when performing physical activity. The nonself-determined motivation is

performed when a specific behavior is performed to avoid a negative consequence. Self-determined extrinsic motivation is performing a behavior because of external factors such as rewards or bonuses (Prochaska & DiClemente 1982).The last concept is intrinsic motivation in which an individual performs an activity because it provides personal enjoyment or pleasure from performing the activity. An individual can develop his or her own motivation depending on internal or external factors such as wanting to feel good about oneself or wanting to impress a family member (Prochaska & DiClemente, 1982).

According to Deci and Ryan, 2008, self-determination theory is important to an aging population because it addresses three highly relevant factors: autonomy, competence, and relatedness. Individuals who are in an autonomy-supportive environment tend to develop self-determined motivation more easily than individuals who live in a controlled environment or situation. This may be due to the fact that individuals who live in an autonomy-supportive environment believe more readily that they are the originators of their behavior. Individuals feel that they are making their own decisions. In contrast, individuals who are living in a controlling environment believe that their behaviors are based on external factors, other people, circumstances, or rewards. They believe that they are not part of their decision making because decisions or choices are being made by others (Deci & Ryan, 2008). People also need to experience competence by seeing themselves efficiently performing what they want to perform (Kilpatrick, Herbert, & Jacobsen, 2002). Individuals believe in relatedness, which is defined by Kilpatrick et al. (2002) “as a factor that consists in being satisfied and able to be involved in society” (p. 37). According to Kilpatrick et al. (2002) people who embrace

any one of the three factors (i.e., autonomy, competence, and relatedness) will develop the motivation to participate in physical function or activities so that their needs can be met.

Russell and Bray (2010) demonstrated a positive relationship between self-determined motivation and its positive impact on an individual's initiating a new behavior and being able to maintain that behavior over time. The research study was conducted on cardiac patients who developed knowledge and understanding that being physically active and being able to stay active was an important component of their cardiac rehabilitation. In addition, the participants were able to develop motivation and understanding that they needed to carry their physical regimen from a supervised clinical environment to an independent exercise routine at home. Although much research has been conducted based on self-determination theory such as the effect of self-determination on weight loss, cessation of smoking, and cardiac rehabilitation among men, only minimal research has addressed physical activity among the elderly. This kind of research has indeed been scarce, and much needs to be learned in terms of improving physical function or preventing loss of physical function or activity in an aging population.

Even though the self-determination theory has been linked to positive physical function, cognition, and behavior in individuals who have undergone surgery or physical rehabilitation in cases of chronic illness or physical disability, the literature search produced few studies dealing with physical activity among the geriatric population. Factors of self-determined motivation have been shown positively to affect such

populations as adolescents, middle-aged adults, college students, and people who are suffering from an illness. Researchers have focused on many factors or concepts such as strong intentions to exercise or develop specific plans for staying active or exercising in the future. However, the elderly population continues to be underrepresented in the research in the area of physical function (Slovinec-D'Angelo, Reid, & Polletier, 2007).

Scheier and Carver (1985) researched optimism and pessimism and explained optimism as the belief that positive things would happen in the future. Pessimism, by contrast, leads to the expectation that negative things would always happen in the future. Abramson, Seligman, and Teadle (1978) treated optimism and pessimism in their theory of explanatory style as the basis for how individuals explain the positive and negative events of life. The concept of explanatory style involves three dimensions: internality, externality, and globality. Internality means "it's about me," externality focuses on the outside world, and globality holds that "it's going to affect everything I do" as opposed to specificity of effect" (Abramson et al., 1978, p. 1545). According to Seligman and Burns (1989) Individuals with a pessimistic personality style see negative events as internal, stable, and global which leads to blaming self for all negative events occurring in their lives. By contrast, individuals with an optimistic personality style see negative events as external, unstable, and caused by specific situations. Optimistic individuals tend to see negative situation as temporary, external, and probably short-lived, whereas pessimistic individuals see negative events as persistent, internal, and long-lasting. In addition, among the characteristics of optimistic individuals are holding positive expectations for the future, achievement, feeling physically well, and experiencing little anxiety or

depression. Furthermore, dispositional optimism is associated with positive physiological and psychological components such as recovering from an illness or surgery and battling or surviving cancer. Individuals with dispositional optimism tend to take care of any health issues and reduce their health risks (Seligman & Burns, 1989) Dispositional pessimism, by contract, is associated with feelings of depression and having difficulty with battling an illness, facing stress, or coping with negative situations in general (Umstattd et al., 2007).

Definitions

The following terms are operationally defined as used in this study:

Ambulation/Gait: The ability to walk. A patient may require assistance to walk from a therapist or an assistive device, secondary to illness or injury (Sears, 2011).

Close/distant supervision: There is no level of assistance or physical contact being provided to the patient. The therapist is standing by within an arm's reach if it is close supervision and a longer-than-arm's reach if it is distant supervision (Sears, 2011).

Contact guard assist: It is a level of assistance in which the therapist places a hand on the patient just in case the patient may require occasional assistance. This type of assistance can be provided with patients who may occasionally lose their balance or stability (Sears, 2011).

Controlled motivation: According to Deci and Ryan (2008), controlled motivation is an individual's desire to receive rewards or to avoid punishment as a result of participating in a particular behavior. It can be internal motivation (e.g., to avoid feeling guilty) or external motivation (e.g., to be accepted by others).

Dispositional optimism: Dispositional optimism is defined by Scheier and Carver (1987, 1992) as an individual's expectations of positive outcomes in different situations of his or her life. Optimistic individuals tend to work harder, achieve their health goals sooner, and expect a positive outcome.

Dispositional pessimism: Dispositional pessimism is defined by Scheier and Carver (1987, 1992) as a negative outlook on life and an expectation of negative outcomes in several of life's situations. For the purpose of this study, dispositional optimism and pessimism are operationally measured by the scores obtained on the Life Orientation Test-Revised (LOT-R), which contains 10 statement to which individuals respond to what extent they agree or disagree with the statement on a 5-point Likert scale.

Elderly: People over the age of 65 (Horton & Johnson, 2010).

Geriatric population: For the purpose of this study, participants over the age of 65 receiving physical therapy services.

Maximal assistance: This is a level of assistance in which the therapist provides at least 75% of assistance to the patient to perform a skill. The patient is able to contribute 25% of the effort needed to execute the activity (Sears, 2011).

Minimal assistance: This is a level of assistance in which the therapist provides at least 25% of assistance to the patient to perform a skill. The patient is able to contribute 75% of the effort needed to execute the activity. When a therapist performs an activity with a patient, the patient assumes his or her body weight, and the therapist provides assistance with initiation, balance, or stability (Sears, 2011).

Moderate assistance: This is a level of assistance in which the therapist provides at least 50% of assistance to the patient to perform a skill. The patient is able to contribute 50% of the effort needed to execute the activity. When a therapist performs an activity with a patient, the patient assumes half of his or her body weight, and the therapist provides half of the assistance of weight bearing, stabilization, initiation, or completion of an activity or task (Sears, 2011).

Modified independence: There is no assistance provided and no physical contact made by the therapist. However, the patient needs an assistive device to perform the activity, requires more than a reasonable time period to perform the activity, or requires that certain risk or safety issues be considered (Sears, 2011).

Motivation: Motivation is defined as an internal condition that activates behavior and gives it direction; motivation energizes and directs goal-oriented behavior. It is a condition that comes from within the individual and assists in performing a type of behavior or in pursuing a goal in life. Motivation can entail an individual's desires or wants, which direct him or her to perform a specific behavior (Carles et al., 2007, p. 369).

Physical activity/physical function: Physical activity has been defined in many ways. The Centers for Disease Control and Prevention, as reported by Cardenas et al. (2009), defined physical activity as "30 minutes or more of moderate physical activity five or more days per week or vigorous physical activity for 20 minutes or more three or more days per week" (p. 41). Dacey, Baltzell, and Zaichkowsky (2008) defined physical activity as "any movement of major muscle groups resulting in energy expenditure" (p. 572). For the purpose of this study, physical activity/physical function is defined as the

ability of being able to move major muscle groups to perform certain physical activities such as transferring in or out of bed or a wheelchair or a regular chair, ambulating a certain distance with or without an assistive device, and being able to ascend and descend four steps.

Self-determination: Self-determination is defined by Wehmeyer, Kelchner, and Richards (1996),

> as the attitudes and abilities required to act as the primary causal agent in one's life and to make choices regarding one's actions free from any external influence and interference. A person acts autonomously, regulates his/her own behaviors, initiates and responds to events in a manner indicating psychological empowerment, and behaves in a manner that is self-realizing. (p. 632)

Self-determined motivation: According to Deci and Ryan (2008), this type of motivation develops from within a person. It is the person's will to take on an active role in participating or directing a particular behavior through a process of internalization in which the individual establishes meaning and level of importance and takes into account his or her own value system or beliefs. Such motivation provides that the behavior is established from within the individual.

Stair negotiation: The ability to ascend/descend a step or steps with correct placement of each lower extremity on each step with the use of handrail or handrails. The patient may require the assistance of a therapist in order to negotiate each step (Sears, 2011). For the purpose of this study, participants will at least ascend/descend 4 steps.

Stand-by-assist: This is a level in which the physical therapist does not touch the patient or provide any assistance; however, the therapist stands by to provide a safety environment in case the patient loses his/her balance, or the therapist stands by to help the patient maintain a safety environment while performing a task (Sears, 2011).

Subacute care facility: Subacute care facility refers to a facility that provides nursing care, physical therapy, occupational therapy, and speech therapy to patients who have had surgery, suffer from a medical condition, or have other physical debilitating ailments. Patients who are in subacute care usually stay at the facility to receive rehabilitation services until they have reached their prior level of function or are well enough to go home.

Total assistance: This is a level of assistance in which the therapist provides 100% of assistance to the patient to perform a skill. The patient lacks the physical or cognitive ability to perform any part of the activity on his or her own (Sears, 2011).

Transfers: It is the act of a person moving from one surface to another. It is the act of moving from bed to wheelchair and vice versa or from one chair to another chair or to an assistive device (Sears, 2011).

Assumptions

I assumed that individuals meeting the criteria for participation were willing to participate in the study and answered the questions on the two questionnaires honestly. I assumed that the individuals participated in physical therapy services for 60 minutes, 6 days a week for a period of 1 month.

Limitations

This study had four potential limitations. The first limitation was the use of a convenience sample or population in which male and female patients from diverse ethnic backgrounds and receiving physical therapy treatment in a subacute unit in the Northeast part of the United States were recruited as respondents for this study. While this sampling technique was deemed appropriate for this study, randomly choosing a larger population of more than 86 participants could have been used to obtain a larger pool of participants. Participants could have been randomly selected through the use of the main office computer in which all the names of patients residing in various subacute facilities are entered from the present to 3 years ago. Through the use of a computer program, the names of the participants could be provided with random numbers either lowest to highest or highest to lowest. Through the use of a larger number of participants, a different outcome could have been provided in this research study with a larger number of participants.

The second limitation was the age of participants, which included patients between 65 and 80 years of age. If the age of participants were between 55 and 70, it might produce a different effect or outcome on optimism, pessimism, motivation, and self-determination and the achievement of physical therapy goals. The physical capacities and psychological needs of a 65-year-old are different from a 95-year-old person (Laidlaw & Pachana, 2009).

The third limitation was the use of two measureable instruments consisting of survey questionnaires. This posed a limitation to the study because participants provided

self-reported answers on each questionnaire pertaining to the research topic. The limitation particularly referred to the fact that the answers given by the respondents might have been inaccurate or biased. There was no way to know if a participant was answering each statement or question truthfully or how much thought he/she had provided to each statement or question. Participants may have interpreted each statement or question differently; there was room for subjectivity. However, several research studies covered in the literature review employed measureable instruments, including the 2007 study by Umstattd et al.

The fourth limitation was the research design used in this study. In this quantitative study design, I used a multiple regression analysis that indicated the existence of a relationship between two or more variables. However, it did not provide any clues to the causal relationship between two or more variables. This affected the overall generalizability of the findings because the results were not representative of the entire population.

Significance of the Study

In this study, I sought to provide information about a growing problem in society, that is, the increase of physical disabilities in an aging population and the limitations the elderly experience regarding activities of daily living (Marsh, Rejeski, Lang, Miller, & Messier, 2003). This study can provide information that could help society identify factors that lead to a decrease in function among the elderly. Being able to identify such factors, caregivers and relatives can develop interventions that may prevent the loss of independence in the elderly with the result of being placed in a nursing home. According

to Marsh et al. (2003), some important factors that need to be identified include muscle strength, leaning, stooping, reaching, transferring, and ambulation, which can diminish an elderly person's independence.

This research can help establish community-based exercise programs that can be geared to attract the elderly population and allow them to experience enjoyment and motivation to socialize with other people in their age group. The elderly can feel a sense of accomplishment by being able to participate in an exercise program (Gschwind et al., 2010). The establishment of an exercise program in the community can assist the elderly in maintaining muscle strength, mobility, balance, endurance, and physical function. According to Marsh et al. (2003), muscle strength, aerobic capacity, flexibility, and physical function can be modified through exercise, which leads to improvement in physical function. In addition, exercise programs can be geared to enlist family support and caregiver training or implement a motivation component from a friend, family member, or relative to help the individual establish a long-term commitment and adhere to the exercise program.

This research study not only provides information to the field of psychology but to the field of physical therapy as well. The information obtained through this research will help to educate the elderly population and establish a motivational approach to coping with physical and cognitive changes due to the aging process. This information will help clinicians, caregivers, and society to develop or improve strategies to help prevent loss of independence, loss of motivation, and loss of physical mobility, and prevent premature death among the geriatric population. This can be developed through

community-based motivation programs and educational services. This research study can assist with educating the general public about the importance of motivation and an optimistic versus a pessimistic outlook regarding mental and physical outcomes and a better quality of life for the elderly.

The research can also contribute to a better understanding of the mind-body connection and its impact on activities of daily living in the geriatric population. It can contribute to positive outcomes and influence older adults to live life to the fullest by remaining active and engaged. Cardenas et al. (2009) demonstrated that aging adults can live an active life, replete with pleasure and vitality right up to the time of death. When older adults maintain a physically active lifestyle and enjoy their life, they can adapt to their aging bodies and develop a healthy outlook. The results of the study can encourage the elderly to work on goals of increasing physical function, improving cognitive abilities such as memory and enhancing their quality of life throughout the aging process. Through a better understanding of the aging process and associated changes in cognitive and physical functioning, elderly individuals can identify and deal with negative and positive beliefs regarding aging. Such understanding can help them to maintain or obtain the best possible level of function as they age gracefully.

Summary and Transition

Chapter 1 provided an overview of the research study, statement of the problem, purpose of the study, research questions, theoretical basis, operational definitions, assumptions, limitations, and significance of the study. The purpose of this quantitative study was to examine whether optimism, pessimism, self-determination, and motivation

were associated with achieving physical activity goals in geriatric patients receiving physical therapy services. People in the 20th century are living longer and often face a decline of their physical functions. In 2002, the National Center of Health Statistics found that 63% of individuals in the United States, aged 65 years, were experiencing some kind of functional limitation in the areas of walking, climbing, standing, sitting, or reaching (as cited in Umstattd et al., 2007). This research study is supported by the TTM, or stages of change model, proposed by Prochaska and DiClemente, in 1982, and expanded by Ryan and Deci (2000) into their self-determination theory. Optimism and pessimism is supported by the research conducted by Scheier and Carver in 1985, who explained optimism as the belief that positive things would happen in the future, and pessimism, by contrast, leads to the expectation that negative things would always happen in the future. The research questions were derived from a review of the existing literature in the areas of optimism, pessimism, self-determination, motivation, and physical activity, which are discussed in greater detail in Chapter 2. The examination of whether the variables of optimism, pessimism, self-determination, and motivation are associated with or have an impact on achieving physical activity goals among geriatric participants receiving physical therapy are discussed in greater detail in Chapter 3. In addition, the nature of this research study is discussed in great detail in Chapter 3.

Chapter 2: Literature Review

A literature review was conducted on the topic of optimism, pessimism, motivation, and physical activity in diverse populations, notably among the elderly. The effect of optimism and pessimism has been studied in many areas dealing with physical disabilities, coping skills, and accomplishments over the years; however, research on physical activity among the geriatric population has been sparse in the last 10 years, especially research that employed objective measurements. According to Steptoe et al. (2008), many researchers used self-report questionnaires, which have been criticized for recall bias, memory distortion, and current mood. This review of the literature focused on three factors: optimism, pessimism, and motivation, as they pertain to physical activity among different populations. I explore the overuse of self-report questionnaires and the rare use of objective measurements in the area of physical activity among diverse populations.

Literature Search Strategy

I searched peer-reviewed journals and other scholarly sources through the Walden University Library full-text databases: EBSCO, Academic Premier, PsycARTICLES, PsycINFO, and CINAHL. In addition to the scholarly journals, I used the key words *optimism/pessimism, physical activity, motivation, self-determination, elderly,* and *geriatric population.* I also explored various tools and instruments for use during interviews. Research studies published since the beginning of the new millennium were obtained. The Walden database for dissertations was searched for dissertations written on any of the aforementioned topics.

Literature Review

Physical Function

There are many definitions of physical function; however, for the purpose of this study, I used the definition provided by Dacey et al. (2008): "Any movement of major muscle groups resulting in energy expenditure" (p. 572). Umstattd et al. (2007) reported that, according to the National Center of Health Statistics, 63% of individuals in the United States who were 65 years old in 2002 stated that they were experiencing some kind of functional limitation in the areas of walking, climbing, standing, sitting, stooping, reaching, grasping, carrying, or punching (p. 107). In addition, the decline in physical function due to age was noted especially in older women (average age 69 years) and people suffering from a chronic disease.

Inactivity is prevalent among the geriatric population, which leads to wasting away of muscle mass, decrease in balance, and an overall decrease in muscle strength. According to Umstattd et al. (2007), research studies have defined frailty as "limited self-report of functional activity, decrease in participation of any physical activity, feeling of tiredness, lethargy or exhaustion, and weight loss that was not intentional" (p. 107). Umstattd et al. further wrote, "This occurs more often among the geriatric population because they have a tendency to suffer from frailty, which leads to disability" (p. 107). Furthermore, Morey et al. (2008) pointed out that a decline in physical function can increase an individual's risk of mortality, disability, and difficulty in performing the activities of daily living, and it can increase social isolation (pp. 31-32). Aging is a normal part of life that leads to a decline in function.

Current society has experienced an expansion of the human life span: People are living longer. Cardenas et al. (2009) pointed out that, according to the U.S. Census Bureau report of 2007, the population over the age of 65 was growing rapidly: In 2000, over 12% of the population in the United States was over the age of 65. Furthermore, this percentage is expected to double, to 21%, by the year 2050 (p. 41). In 1996, the U.S. Department of Health and Human Services, as cited by the authors, found that older adults who lead a sedentary life and become physically inactive develop health problems and a poor quality of life (p. 41). The Centers of Disease Control and Prevention discovered, in 2005, according to Cardenas et al., that only a third of people around the age of 65 and older perform or maintain a physically activity routine consisting of 30 or more minutes of moderate physical activity for 5 or more days per week or vigorous physical activity of 20 or more minutes for 3 or more days a week (p. 41). Although the American population is living longer, they run the risk of living in poor health, which will affect the quality of life particularly in the geriatric population.

As people age, the quality of life becomes important to them; it is understood as their level of independence, ability to move around, level of contributions made to society, and ability to cope with the physical and mental developmental changes occurring at this stage of life. According to Bowling et al. (2002), “older age people tend to rate their quality of life as good if they have good health, good income, and many friends who form a positive support system in their life” (p. 355). Other studies on older people have focused on different factors that seem to influence the quality of life such as “self-esteem, having control of their life, values held by society, social and personal beliefs, and future

goals or outcomes" (p. 355). According to the authors, people aged 65 years or older tended to rate their quality of life based on the expectations that society had for them, their personality, and psychological traits such as optimism and pessimism, health, and functional status. People belonging to a high social class, who rated their quality of life as very good, received a high income, owned a home, left their full-time education for later in life, and were either married, divorced, or separated. People who rated their quality of life as it could not be better exhibited a high level of optimism, higher level of efficacy, and regarded life as being better than what other people expected it to be. People who rated their quality of life as good had a positive support system consisting of family or friends and were able to participate in social activities. Individuals who rated their quality of life as very good also lived in good neighborhoods with no graffiti, pollution, or environmental noises; these individuals enjoyed going out for a walk in their neighborhood, had public transportation, and had stores available for shopping. Overall, the older population rated quality of life based on their support system, physical function, accomplishments, and psychological well-being.

The importance of physical ability, psychological well-being, and quality of life among the geriatric population has been addressed in previous research. Many of these studies called for further research on the geriatric population because the goals and outlook on life are very different from that of the younger generations (Cardenas, et al., 2009). Research results can lead to positive outcomes and influence people to live their life to the fullest by continuing to remain as active as possible. Cardenas et al. (2009) demonstrated that aging adults can live an active life that is filled with vitality and

pleasure right up to the time of death. In addition, older adults do not always lose vitality and energy, especially if they remain physically active and enjoy leisure activities. Such individuals can usually adapt to physical changes in the course of life and maintain a healthy psychological outlook throughout the life span.

Optimism, Pessimism, and Health Conditions

An important psychological aspect to consider is the influence of optimism versus pessimism on many areas of life. Research has provided a great deal of information about optimism and pessimism and how they relate a health of mind and body. According to Carver and Scheier (1987, 1992), people who have a high level of optimism tend to work harder, achieve their health goals sooner, and expect a positive outcome. In contrast, Milam, Richardson, Marks, Kemper, and McCutchan (2004) wrote that "pessimism is usually associated with poor health conditions, poor health behaviors, and poor outcomes" (p. 168).

Some researchers focused on specific diseases and how the participants functioned in everyday life with family, friends, job, and social interactions. According to Milam et al. (2004), a major health issue in today's society is HIV because it is a chronic disease with many side effects from treatment; it entails difficult decisions regarding different treatment options, difficulty with disclosure of having the disease, and possible discrimination due to having the disease. Milam et al. recruited HIV patients who were receiving antiretroviral therapy (ART) for their study to determine if there was a relationship between dispositional optimism versus pessimism and the progression of HIV disease. The researchers used the Life Orientation Test (LOT) to determine if a

patient was optimistic or pessimistic. Low scores on the LOT indicated pessimism; high scores indicated optimism. Milam et al.'s first hypothesis was that "individuals with high optimism expected positive outcomes, worked harder and achieved outcomes sooner than low optimistic individuals" (p. 168). The second hypothesis was that "high scoring optimistic individuals expected positive outcomes so they were less likely than low or moderate scoring optimistic individuals to work toward obtaining goals" (Milam et al, 2004, p. 168). According to the researchers, high scoring optimistic individuals would believe they were not susceptible to negative consequences. Overall, the objective of this study was to measure the level of optimism in patients suffering from HIV who received ART to help them live longer. The progression of the HIV disease was examined in light of the effect exerted by psychological factors instead of being simply considered a mystery.

In the Milam et al. (2004) study, the HIV RNA plasma viral load measured the replication of the virus in an individual's bloodstream. If the HIV virus had progressed in an individual's body, the replication of the virus would be high, and the CD4 T lymphocyte cell count would be low. When an individual adhered to the ART regimen, it helped to promote an effective treatment with suppression of the virus. Milam et al. found that individuals with a high level of optimism were susceptible to experiencing progression of the HIV disease. Patients with a moderately high level of optimism had a higher CD4 count at their follow up visit than patients with low levels or very high levels of optimism. From these results, Milam et al. concluded that patients with high optimism demonstrated a decrease in their immune system when they experienced conflict with

their goals and uncontrollable chronic stress. HIV patients on an ART regimen with low levels of pessimism or moderately high levels of optimism experienced some protection from progression of the disease; however, the protection lasted only a short period of time.

Physiological and psychological factors are considered particularly important with cancer patients. Kung et al. (2006) explored the relationship between psychological and physiological factors in individuals with head, neck, and thyroid cancers. The researchers sought to determine the relationship between optimism versus pessimism and quality of life. The research involved 190 patients who were separated into quartiles based on their scores on the Minnesota Multiphasic Personality Inventory Optimism-Pessimism Scale. The results of the study showed that optimism was associated with a better quality of life among individuals who had survived thyroid cancer when compared to individuals who had survived head and neck cancer. When the researchers adjusted for age, sex, and stage of disease, optimism was not associated with quality of life among patients who had survived head and neck cancer (Kung et al., 2006). Based on the results by Kung et al. (2006), optimistic individuals suffering from thyroid cancer related their quality of life to their mental state rather than to their physical state.

Optimism and pessimism have also been researched with respect to stress and digestive disorders. Armata and Baldwin (2008) conducted a study on optimism, stress, resiliency, and salivary cortisol in a group of participants who were experiencing recurrent symptoms or were diagnosed with a digestive disorder and a control group of healthy individuals. The study was performed on 134 college students between the ages

of 18 and 26 years. The LOT instrument was used to measure dispositional optimism; the Cognitive-Somatic Anxiety Questionnaire was used to measure the level and type of perceived stress. Cognitive or somatic and symptoms were measured with the Cohen-Hoberman Physical Symptoms Checklist, which determined the type of symptoms the participants were experiencing for the previous month; this helped to determine which participants had two or more digestive symptoms. Stress was measured with the College Life Stress Inventory, and resilience was measured with the Resilience Scale for Adults. The participants provided a saliva sample in a sanitized 50 ml tube once every minute for 3 minutes. The samples were placed in microtubes and stored at 200 Celsius awaiting analysis. The saliva was analyzed for total cortisol concentration by the High Sensitivity Salivary Cortisol Enzyme Immunoassay Kit, used to detect cortisol levels from .03 to 3.0 ug/dl. The participants were placed into two groups, one group was the control group and the other was the digestive-disorder group.

Armata and Baldwin (2008) demonstrated with this study that stress was negatively correlated to optimism and resiliency. Furthermore, participants who were optimistic reported fewer physical symptoms. Individuals who were optimistic and resilient reported less stress. This study demonstrated that individuals with digestive problems perceived and experienced stress. On the other hand, individuals with digestive problems also had higher levels of salivary cortisol, which is an important hormone that regulates stress as well as the immune system. Overall, Armata and Baldwin (2008) demonstrated how individuals who are undergoing stress in their lives can experience a

low level of antibodies, which help the body to fight of any illness or germ. Since the body is missing the protective components, it has a difficult time fighting off infections.

Heart disease can cause psychological and physiological distress in patients. Contrada et al. (2008) studied individuals who underwent a coronary artery bypass grafting procedure. Patients with low dispositional optimism experienced a great deal of anxiety; they were less educated, higher in trait anger, younger, and mostly female. Social support was another factor, or variable, explored in this study. Individuals who possessed dispositional optimism and high levels of religious beliefs also were associated with higher levels of support. This study indicated that social support was greater among married women than married men. Furthermore, Contrada et al. (2008) demonstrated that physiological and psychological factors can influence the length of the hospital stay. Individuals who stayed longer in the hospital were also associated with depression and with having less social support. On the other hand, length of stay was not associated with optimism, religion, and anxiety.

When people experience physiological or psychological difficulties due to illness or surgery, coping skills or coping mechanisms are important. Researchers have explored the effects of a negative and positive affect on a person's physiological or psychological well-being. Steptoe et al. (2008) found that positive affect was associated with psychosocial factors such as “social connectedness, social support, optimism, and adaptive coping” (p. 223). The researchers also reported that, by contrast, “negative affect was associated with exposure to chronic stress, having a depressed mood, not having a

positive social support, pessimism, and using maladaptive psychological coping skills" (Steptoe et al., 2008, p. 223).

Steptoe et al. (2008) also included socioeconomic status based on educational attainment and income. Men and women who were married demonstrated a higher positive affect than people who were single, divorced, widowed, or separated, but there were no differences in negative affect or depression. Men who were not working demonstrated a greater positive affect than men who were working. On the other hand, women who were not working demonstrated a lower positive affect than women who were working. Individuals who had high positive affect also had greater social connectedness and positive social support, whereas individuals with a high negative affect had few friends and a poor support system. Negative mood was also associated with individuals who had chronic stress. Individuals with a positive affect were optimistic and coped with stress by problem engagement and seeking support from others. In contrast, individuals with negative affect experienced low optimism and used avoidant coping skills. In this study, the notion of negative affect as being linked to exposure to stress, lack of a positive social support system, poor mental health, pessimism, and avoidance was thought to be a form of coping. Negative affect can cause or increase the risk of illnesses.

Optimism, Pessimism, and Physical Functioning

Physical function is important to individuals and of particular concern to older adults in order to maintain independence, positive well-being, proper weight, energy, and good quality of life. Brenes et al. (2002) conducted research on optimism, pessimism, and

physical function with older adults who lived in a community and suffered from knee pain. The research included 480 participants, recruited through the Observational Arthritis Study in Seniors. The participants were given a self-report questionnaire to measure their knee pain when they performed functional activities such as walking, lifting an object, climbing stairs, and getting in and out of a car. The questionnaire consisted of 12 items in which the participants rated the frequency of their pain on a 5-point Likert scale consisting of 1 = *always in pain* to 5 = *never having pain*. The participants also rated intensity of pain on a 6-point Likert scale ranging from 1 = *no pain* to 6 = *excruciating pain*. The participants' physical functioning was measured objectively with the Physical Activity Restriction measure, in which walking, lifting, carrying a weight, climbing and descending five steps, and getting in and out of a car were observed and measured with each participant.

The outcome measure was the time each participant took to perform each functional activity. If the participant took longer to complete a task it was considered a poor performance on the functional activity. When the participants were finished with each task, they were asked to rate the intensity of their pain on a 10-point scale; the higher the score, the more pain they had experienced with each task. The severity of osteoarthritis was documented by X-ray for each participant's knee. The severity of osteoarthritis ranged from 0 to 21, with a high number indicating that the participant had severe osteoarthritis. The participants were able to report their personal health issues pertaining to hypertension, diabetes, and heart disease. Participants were asked to answer questions about any fractures they might have had in their upper or lower extremities. In

addition, they were instructed to number their arthritic joints, ranging from zero to seven, osteoarthritis joints included neck, hands, feet, back, shoulders, hips, and knees. Participants were instructed to rate their health by using a 5-point Likert scale ranging from 1 = *excellent* to 5 = *poor*. The body mass index (BMI) was also measured for each participant.

Pessimism was related to the physical functions, even after controlling for pain, but not for optimism (optimism was not related to physical function in this research). Brenes et al. (2002) concluded that pessimistic individuals may not seek treatment as often as individuals who are optimistic. The researchers wrote, "Pessimistic individuals find it difficult to maintain a treatment regimen and may not like to be physically active which leads to poor health, poor physical conditioning, and an increase in disability" (Brenes et al., 2002, p. 220). This study demonstrated that individuals who performed poorly on each physical activity were predominantly female, older in age, had a high BMI, and experienced a great deal of pain. This study demonstrated that pessimistic individuals scored significantly poorer in all the functional activities. Walking was significantly correlated with optimistic individuals. Overall, the study provided important information such as pessimistic individuals tend to have poor coping skills, especially if they are in pain. Such individuals may find it difficult to seek medical assistance to decrease their pain or to adhere to a treatment or exercise plan, which leads to even greater physical inactivity (Brenes et al., 2002).

Umstattd et al. (2007) used objective measurements in their study on physical function relative to psychological factors such as optimism and pessimism. The

researchers explored the relationship of dispositional optimism and pessimism, self-efficacy, and physical activity in 231 older Midwestern American women, aged 60 to 85 years, using the Life Orientation Test-Revised (LOT-R). Gait speed was objectively measured by having the participants walk along a 7-meter pathway at normal speed while negotiating a 32 cm-tall obstacle placed in the center of this 7-meter pathway. Participants were also timed while negotiating a flight of stairs with 15 stair steps. The participants underwent the 8-foot Up and Go test, which is a timed test in which the participant starts from a sitting position, then walks 8' as quickly as possible and returns back to the sitting position. A small number of participants achieved good physical performance (i.e., a good time), whereas a large number achieved poor physical performance on this timed test. Each activity was performed and timed twice, and the better score was used in the research study.

The Gait Efficacy Scale was provided to each participant in the Umstattd et al. (2007) study to measure the participants' belief about being able to perform the stair test and overcoming obstacles in their path. This scale is able to measure an individual's confidence level from 0% (no confidence) to 100% (high confidence). In addition, the Activities-Specific Balance Confidence Scale was used to measure each individual's confidence in being able to perform each activity without compromising balance. Confidence is measured on a 100% confidence scale where the maximum total score of 100 can be achieved for efficacy.

The Umstattd et al. (2007) study used a social cognitive perspective, which made it easier to understand the relationship between optimism/pessimism and physical

activities in women aged 60 to 85 years. This study is important because it corroborated the findings of Brenes et al. (2002), who reported that pessimism was independently and objectively associated with physical function or physical activities when certain variables were controlled for (e.g., demographics and self-reported health issues). The Umstattd et al. (2007) study provided objective measurements of the physical changes individuals undergo as they age such as decrease in muscle strength, range of motion, and balance. The study also showed that the onset of a medical condition or illness can affect physical function and hasten the decrease in physical function.

Methodology in the Literature

Optimism, Pessimism, and Physical Activity

The literature demonstrated that some quantitative research studies used objective measurements and self-rating questionnaires in order to obtain data in the area of optimism, pessimism, and physical activity. One such study by Brenes et al. (2002) used a 12-item knee pain scale to measure pain when participants were walking, lifting, carrying a weight, ascending and descending stairs, and transferring in and out of a car. The objective measures consisted of the time required by each participant to perform each activity and the distance, in feet, that each individual walked during 6 minutes. The severity of osteoarthritis was identified by having each participant undergo a bilateral knee X-ray. The results of the knee X-rays were read by two different people: a bone/joint radiologist and a rheumatologist. The participants were provided with a self-report questionnaire that had to be marked with either yes or no to questions pertaining to any health issues such as high blood pressure, diabetes, and heart conditions. Brenes et al.

(2002) used a variable ranging from zero to four, assigned to the history of fractures in the hip, spine, forearm, and lower leg. The number of arthritic joints reported by the participants was represented by a variable ranging from zero to seven, represented neck, hands, feet, back, shoulders, hips, and knees. The participants' BMI was determined by computing their weight in kilograms divided by height in square meters. Last, the participants rated their overall health on a 5-point Likert scale ranging from 1 = excellent to 5 = poor. Overall, objective data were obtained for the performance of physical activities in addition to the answers provided by participants on self-report questionnaires.

Umstattd et al. (2007) also used objective measurement to assess gait speed as the participants walked on a 7-meter pathway and walked around a 32 cm-tall obstacle placed in their path and performed on a flight of 15 stair steps. The 8-foot Up and Go test was also administered to the participants for objective data, collected by timing participants as they rose from a seated position, walked 8' as quickly as they could, and returned to the seated position. The participants performed this activity twice while being timed. The better of the two scores for each physical activity was used in the study.

Three self-report questionnaires were also used: the LOT-R, the Gait Efficacy scale, and the Activities-Specific Balance Confidence scale. The LOT-R is scored on a 5-point Likert scale; it consists of 10 statements for which the respondent indicates the extent of his or her agreement or disagreement. The Gait Efficacy scale consisting of six items that measure an individual's belief about being capable of performing on the stairs and being able to walk around objects encountered on the pathway. The scale measures

an individual's confidence level from 0 = no confidence to 100 = highly confident. The Activities-Specific Balance Confidence scale consists of 16 items that measure confidence levels with respect to various activities of daily living without compromising balance. The questionnaire has a 100% confidence scale.

Additionally, the participants provided current demographics and reported any diseases they were suffering from such as diabetes, heart conditions, pulmonary diseases, skeletomuscular illness, or high blood pressure. The participants coded each illness with 1 = present and 0 = absent. Umstattd et al. (2007) provided a value or status of the disease condition with a number ranging from zero to five, where the higher numbers indicated that the participant was suffering from more comorbid conditions.

Motivation and Physical Activity

In studies reviewed to prepare for this research (i.e., mainly studies conducted in the new millennium), researchers used self-report questionnaires extensively in the areas of motivation and physical activity. Dacey et al. (2008) used a modified version of the Exercise Motivation Inventory-2 (EMI-2) with 645 adult participants to determine the range of physical activities that were motivated by self-determination. The EMI-2 instruments contains 44 statements on a 6-point Likert scale ranging from 0 = *not all true for me* to 6 = *very true for me*. These statements require respondents to answer with true for me if the statement pertains to them personally or would be true if they exercised. In addition, the Exercise Stage-of-Change scale was used to determine the stage of physical activity a specific respondent might fit into; the categories range from precontemplation through to maintenance, as used in the TTM, or stages of change model. This

questionnaire was modified to determine if a participant had exercised regularly for 6 months to 1 year or longer.

Dacey et al. (2008) determined that an increase of intrinsic and self-determined external factors were associated with being more physically active among the older adult population. This study demonstrated that older adults were motivated to perform physical activities because they enjoyed them. The study also showed that the participants felt external factors provided motivation such as the enjoyment of socializing or being able to listen to music while exercising.

On the whole, few research studies have used physical capabilities as a means to obtain objective data regarding optimism, pessimism, and self-determination, motivation, and their effect on physical activity. An abundance of studies have used self-report questionnaires in the past, which creates a need for researchers to conduct more research concerning physical activities with objective measurements. There also continues to be a gap in the literature pertaining to research studies among the geriatric population. The limited number of studies extant about the geriatric population used mostly self-report questionnaires, so that not enough objective data are available regarding physical activity among the elderly.

Motivation, Physical Activity, and Health Conditions

Several studies have explored motivation, physical activity, and health conditions. Russell and Bray (2009) recruited 68 participants from a hospital-based cardiac rehabilitation program to measure motivation by using three types of questionnaires: (a) The first scale used was the Psychological Need Satisfaction in Exercise Scale to answer

the question: Is the individual's need for competence, autonomy, and relatedness being satisfied in the exercise environment? (b) The second scale was the Behavioral Regulation in Exercise Questionnaire-2 to measure the individual's motivation to exercise and answer the question: How much motivation does the participant have to engage in physical exercise? (c) The third questionnaire was the 7-Day Physical Activity Recall questionnaire to measure the individuals' recall and estimation of how often and for how long they had performed physical activities during the preceding 7 days to determine whether the exercise program had been transferred from a supervised structured facility to a self-regulated home exercise program.

The Psychological Need Satisfaction in Exercise Scale uses a 6-point Likert scale ranging from 1 = false to 6 = true. The second questionnaire used was the Behavioral Regulation in Exercise Questionnaire-2 which is also used to determine the motivation of each participant to exercise. It contains subscales that measure amotivation, external regulation, introjected regulation, identified regulation, and intrinsic motivation. It consists of 19 items and uses a 5-point Likert scale where 0 = not true for me and 5 = very true for me. The third self-report questionnaire was the Physical Activity Recall in which participants who needed to attend cardiac rehabilitation were asked to write the estimated times and duration of each activity they were able to participate in during the preceding 7 days.

The participants were initially asked to perform their exercises in a supervised facility for 6 weeks; then, they progressed to a self-managed program they had to carry out at home. The self-managed program would be performed at home for a period of 6

weeks. After this 6-week period, the participants were assessed to determine if they had been successful in transferring the exercise program from the facility to home. The research study determined that participants who were self-determined were able to transition without difficulty and were able to take charge of their exercise program. These participants were able successfully to transfer their exercise routine to their home environment. In addition, the participants developed a sense of autonomy as they had successfully accomplished a task.

Carles et al. (2007) used the motivational interviewing technique to assist 55 obese participants to lose weight. The participants were encouraged to take control and take action to improve their health. The motivational interviewing techniques involved limited physical activity and a change in the interviewees' diet. The study was designed as a 24-week weight-loss program in which the weight loss would be gradual through physical activity and a decrease in fat intake. The participants met with a clinical psychologist for individual sessions, for 45 - 60 minutes per week, to discuss motivational interviewing strategies, role playing, reading, and watching videos about the main points, or principles, of motivational interviewing. The participants' progress was measured by their completing an exercise test that consisted of walking on a treadmill while their heart rate was monitored and maintaining a journal in which each activity and its duration were recorded. The journal was also used to record the type and amount of food consumed over a period of 4 days. The participants were educated on calorie intake, calories from fat, carbohydrates, and proteins. The participants' body mass was measured with a digital scale. The researchers concluded that the group that had received

motivational interviewing had a more positive behavior change and exercised an additional 68 minutes per week compared to the group who did not receive motivational interviewing.

Motivational interviewing was initially used with addiction problems, but it has now expanded into other areas of health involving physical activity and dieting. In 2007, Carles et al. expanded their earlier research, in which participants were motivated to change their behaviors to lose weight. In order to achieve better results, the researchers added motivational interviewing to their stepped-care approach. The new approach aimed at helping individuals to change certain behaviors while encouraging them to participate actively in their treatment. In this particular study, participants were recruited for a behavioral weight loss program that took a stepped-care approach. However, some participants received not only the stepped-care approach but also motivational interviewing.

In their earlier study, Carles et al. (2007) found that participants who were involved in the behavioral weight-loss program using the stepped-care approach were able to achieve their minimum weight loss goal better than participants who did not receive the stepped-care approach. The difference between the 2007 study and the earlier study, conducted in 2005, was the addition of the motivational interviewing technique. In the Carles et al. (2007) study, some of the participants enrolled in the behavioral weight-loss program received both the stepped-care approach and the motivational interviewing technique. At the conclusion of the study, the participants who had received both the stepped-care approach and the motivational interviewing techniques had lost significantly

more weight and were physically more active than the participants who had received only the stepped-care program. Participants who had a difficult time losing the weight were provided with motivation and encouragement to change their negative behavior (Carles, et al, 2007).

Theoretical Framework

Theories Regarding Optimism and Pessimism

Scheier and Carver (1985) noted that optimism and pessimism have been researched for several decades. The authors defined optimism as "believing that positive things instead of negative things will happen in the present and future. On the other hand, pessimism is associated with expecting negative things to always occur in the present and future" (p.219)

Another important theorist in this area of research was Seligman, who defined optimism and pessimism through the theory of explanatory style (Seligman & Burns, 1989, p. 471):

> [This theory] is based on how an individual explains positive and negative events. There are three dimensions involved in the concept of explanatory style which is internality (meaning it's me) versus externality (meaning it's the outside world) and globality (meaning it's going to affect everything I do) versus specificity. Individuals with pessimistic personality style see negative events as internal, stable, and global which leads to blaming themselves for the negativity occurring in their life. On the other hand, individuals with optimistic personality see negative events as external, unstable, and its causes are due to specific events.

> Optimistic individuals tend to see any negative situation as temporary, external, and may be short lived. In contrast, pessimistic individuals tend to see negative events as persistent, internal, and long lasting. In addition, the characteristics of optimistic individuals involve "positive future expectations, achievement, feeling physically well, experience decreased anxiety and decreased depression". (Seligman & Burns, 1989, p. 471).

Furthermore, dispositional optimism is associated with positive physiological and psychological components such as recovering from an illness or surgery and battling or surviving cancer. Optimistic individuals tend to take care of any health issues and reduce health risks. Dispositional pessimism is "associated with feelings of depression, having difficulty with battling an illness, experiencing stress, and difficulty with coping with negative situations" (Umstattd et al., 2007, p. 108).

Optimism and pessimism have aroused the interest of many researchers over the years: Optimistic and pessimistic individuals hold contrasting believes and face life events either with a positive or a negative outlook. In addition, optimistic and pessimistic individuals have divergent experiences with respect to coping, stress, anxiety, and recovery from illness. They also experience negative as well as positive psychological issues differently.

Motivational Theories

Motivation can be defined in different ways. A popular definition holds that motivation is an inner drive that provides an outside force to achieve a specific goal. An excellent definition was provided by Carles et al. (2007), who wrote: "[Motivation is] an

internal condition that activates behavior and gives it direction; motivation energizes and directs goal-oriented behavior" (p. 369). Motivation is a condition that comes from within the individual and assists in performing a type of behavior that leads to the realization of a goal. Motivation can entail an individual's desires or wants, which direct the individual to perform a specific behavior (Carles et al., 2007).

Because the topic of motivation has been of interest to many researchers, it has given rise to diversified techniques and strategies in the field of psychology. In 1982 Prochaska and DiClemente introduced the stages of change model, or the TTM, as it is alternatively called, for predicting behaviors related to health. This theory is based on the concept that people are going through different stages, or processes, in order to change a behavior such as smoking or losing weight. The stages of change model are applied to physical activities in which the individual experiences a process of change. The stages of this model are as follows:

According to Prochaska and DiClemente (1982), the first stage is precontemplation, which is characterized by the absence of behavioral changes or any activity or expressed desire to change. This stage can take up to 6 months. An individual may think about the disadvantages of changing a behavior might entail, instead of the advantages. For example, if an individual is attempting to lose weight, the disadvantages would be muscle soreness, difficulty of getting to a gym, and the sweating. The second stage is contemplation, in which an individual takes no action to resolve the situation but expresses a desire or consideration to change. At this point, an individual is not making

any commitment to change his or her behavior. Thoughts about positive and negative factors of changing are still present (Prochaska & DiClemente, 1982).

According to Prochaska and Diclemente (1982), the third stage is preparation in which an individual makes a commitment to take action to change a particular behavior usually within 30 days. At this point, the individual has established plans to change; for example, in order to lose weight, the individual is joining a gym. The physical activity has been initiated; however, the recommended physical activity guidelines are not met by the individual. The fourth stage is taking action and meeting the recommended physical activity guidelines, which are moderate activity for 30 minutes, at least 3 to 4 days per week, for up to 6 months. The fifth stage is maintenance, or continuing the physical activity according to the recommended guidelines for at least 6 months before the individual terminates the physical activity. The sixth and last stage is termination in which there is no desire in the individual to return to the previous lifestyle or behavior. The individual feels confident and assertive in performing the new behavior and has completely given up on the negative behavior such as, for example, eating unhealthy food that would cause an increase in weight (Prochaska & Diclemente, 1982).

In 1992 Prochaska and DiClemente (as cited in Dacey, Baltzell, & Zaichkowsky, 2008), promoted the formulation of other theories such as the self-determination theory (SDT), which is often used to motivate individuals to perform physical activity. Dacey et al. (2008) noted that this theory posits four different types of motivation, which span the gamut from extreme to extreme as amotivation, nonself-determined extrinsic motivation,

self-determined extrinsic motivation, and intrinsic motivation. The authors explained the first two types by stating,

> [The first step is] amotivation which consists of having no motivation, especially in performing any type of physical activity. The second type is non self-determined motivation which consists of an individual who performs an activity or demonstrates a specific behavior to avoid a negative consequence. (p. 571)

Dacey et al. (2008) illustrated this type of motivation by providing the example of an older man who wants to get some ego-enhancement by impressing a younger man through showing off that he can perform a certain activity that is considered difficult to do at his age. The third and fourth type is also explained by Dacey et al. (2008): The third type is self-determined extrinsic motivation, which the authors defined as "performing a behavior because of external factors, such as rewards or bonuses; in contrast, the fourth type of motivation pertains to a specific behavior or activity being performed due to personal gratification" (p. 572).

Although motivation is defined as an inner force that drives an individual to perform a particular activity or behavior toward a goal, external factors can affect an individual's motivation as well. According to Deci and Ryan (1985), individuals who are in an autonomy- supportive environment are able to have self-determined motivation more easily than individuals living in controlling environments or situations. Individuals who are in an autonomy-supportive environment believe that they are the origin of their behavior. (p. 131). On the other hand, individuals who are in controlling environments believe that their behaviors are based on external factors, people, circumstances, and

rewards. According to Deci and Ryan (1985), “individuals who experience positive psychological needs within a positive environment (i.e., one in which they can integrate and adapt) will have greater motivation; they will also experience greater well-being. On the other hand, an environment that is stifling does not promote opportunities for growth, nor does it satisfy an individual’s psychological needs. It will cause a decrease or lack of motivation; stifling environments and unmet psychological needs will lead to unhealthy outcomes for an individual” (p. 131).

Summary of the Literature Review

Optimism and Pessimism

Most of the literature about optimism, pessimism, and motivation relative to health dealt with illnesses such as cancer and HIV, whereas very little research has been undertaken where optimism, pessimism, and motivation were studied in connection with physical activity, especially with activities that people must perform as part of their daily living. Further, there seems to be a great deal of research performed with college students and young adults and very little with older adults or the geriatric population. Most of the research on the topics of optimism, pessimism, motivation, and physical activity has been explored through the use of self-report questionnaires, and not enough research studies have focuses on measurable physical activities. The literature review on optimism has highlighted how important the component of optimism can be in regard to quality of life, coping with difficult situations, reaction to stress, and facing physical deterioration or physical disabilities. Optimism and pessimism are two concepts that go hand in hand like night and day. They are characteristics of an individual's personality and they can be

shaped through emotional, physical, intrinsic, extrinsic, and environmental circumstances.

Motivation

The factor of motivation in individuals has been addressed to a certain degree through the use of techniques such as the stepped-care approach or motivational interviewing. In addition, motivation has inspired the formulation of a number of theories such as self-determination theory. A drawback regarding the research on motivation and physical activity is that it has focused predominantly on young adults. An obvious gap exists in the professional literature regarding research on motivation and physical activity in older adult and the geriatric population.

Summary and Conclusions

One recommendation gleaned from this review of the literature was that it is important to continue the exploration of physical activity because it can prevent many physical limitations and chronic diseases in older adults and the geriatric population (Morey et al., 2008). Although the topic of motivation and physical activity has been researched in different ways and in combination with various other concepts, specific research on older adults and the geriatric population is lacking. Existing research has used mainly self-report questionnaires for data collection; very few studies have used objective physical measurements on which to base their conclusions. In this quantitative study, I examined objective evidence or results of participants who achieved or did not achieve physical activity goals when they received physical therapy services. I accomplished this by examining whether optimism, pessimism, motivation, and self-determination were

associated with achieving physical activity goals among geriatric participants who received physical therapy. In addition, I collected data with self-report questionnaires.

Chapter 3 presents the research methods conducted for this study, including research design and approach, the research questions that guided the study, and the hypotheses formulated that were tested in order to answer the research questions. A description of the setting and sample is provided, data collection, and data analysis procedures are described, as well as the instrumentation used for data collection. Chapter 3 ends with ethical considerations and a description of the measures taken to ensure the protection of participants' rights and anonymity.

Chapter 3: Research Method

This chapter contains a discussion of the research design and approach and a description of the setting and the participants who were recruited for this study. The research questions and hypotheses are presented. I present the research questions and hypotheses and describe the instrumentation used for data collection. I discuss the methods employed in the data analysis and explain the limitations of the study, as well as the rationale behind the selection of this particular topic. The chapter ends with a discussion of ethical considerations and the protection of the participants' rights and anonymity.

Research Design and Rationale

A search of the literature revealed the dearth of empirical information on the geriatric population. To expand research into this area and take a first step toward closing the gap in the professional literature, I used a quantitative study and multiple regression analysis to examine whether the psychological factors of optimism, pessimism, motivation, and self-determination (as independent variables) had an impact on achieving physical activity goals (as the dependent variable) in geriatric participants who were receiving physical therapy treatment in a subacute facility. Physical activity or physical function was defined as moving major muscle groups to perform certain activities such as transferring in and out of bed, a wheelchair, or a regular chair; ambulating a certain distance with or without an assistive device; and ascending and descending four steps. These physical activities among the geriatric population were transformed into physical therapy goals for the purpose of this study.

Previous researchers had examined the effect of optimism and pessimism in individuals who suffered from diverse illnesses or were terminally ill. Milam et al. (2004) conducted a study with HIV patients to determine if there was a possible relationship between dispositional optimism versus pessimism among individuals receiving ART. Kung et al. (2006) explored the relationship between psychological and physiological factors as they pertained to individuals who had health problems such as head, neck, and thyroid cancer. Patients were recruited to determine if there was a relationship between optimism, pessimism, and quality of life. Armata and Baldwin (2008) conducted research on optimism, stress, resiliency, and salivary cortisol levels in participants who were experiencing recurrent symptoms of a digestive disorder and a control group of healthy participants. A few researchers used objective measurements such as physical function. Brenes et al. (2002), in particular, examined the relationship between optimism, pessimism, and objective measurements of physical function. However, Brenes et al. (2002) addressed a specific population, namely, participants experiencing knee pain, and a limited set of specific activities such as walking, lifting an object, climbing stairs, and getting in and out of a car. The study conducted by Brenes et al (2002) has served as a foundation and opened the door for further researchers using objective physical measurements. Overall, the literature review has provided me with the knowledge that there is a need for research in the area of optimism, pessimism, motivation, self-determination, and physical function among the geriatric population.

Research Questions and Hypotheses

Research Question 1

Does self-determination/motivation play any part in achieving the greatest level of physical function, which is modified independence among geriatric patients receiving physical therapy treatment?

$H_0$1: There is no statistically significant difference in achieving modified independence between geriatric patients who are more self-determined/motivated, as measured by the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are less self-determined, as measured by a lower score on the Perceived Choice subscale on the Self-Determination Scale.

H_a1: There is a statistically significant difference in achieving modified independence between geriatric patients who are more self-determined/motivated, as measured by the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are less self-determined, as measured by a lower score on the Perceived Choice subscale on the Self-Determination Scale.

Research Question 2

Does optimism relate to achieving a greater level of physical function, which is modified independence, among geriatric patients receiving physical therapy treatment?

H_o2: There is no statistically significant difference in modified independence achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the scores on the Life Orientation Test-Revised.

H_a2: There is a statistically significant difference in modified independence achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the scores on the Life Orientation Test-Revised.

Research Question 3

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are less self-determined and geriatric patients who are more self-determined upon discharge from physical therapy services?

H_o3: There is no statistically significant difference in achieving all three physical therapy goals between geriatric patients who are less self-determined, as measured by a low score on the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are more self-determined, as measured by a higher score on the Perceived Choice subscale on the Self Determination Scale.

H_a3: There is a statistically significant difference exists in achieving all three physical therapy goals between geriatric patients who are less self-determined, as measured by a low score on the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are more self-determined, as measured by a higher score on the Perceived Choice subscale on the Self-Determination Scale.

Research Question 4

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic upon discharge from physical therapy services?

H_o4: There is no statistically significant difference in achieving all three physical therapy goals between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the Life Orientation Test-Revised.

H_a4: There is a statistically significant difference in achieving all three physical therapy goals between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the Life Orientation Test-Revised.

The independent variables in this study were optimism, pessimism, motivation, and self-determination. The dependent variable was the achievement of three specific physical therapy goals based on physical function, namely, the ability of being able to move major muscle groups to perform specific physical activities, consisting of transferring in and out of bed, a wheelchair, or a regular chair; ambulation of certain distances with or without an assistive device; and ascending or descending four steps. These three physical therapy goals were set for geriatric participants receiving physical therapy services for a period of 1 month. The achievement of a specific physical therapy goal was the patient's ability to perform the highest level of function, which was modified independence in each physical activity. The results of achieving physical therapy goals were collected at the time of discharge from physical therapy services. I sought to determine if optimism, pessimism, motivation, and self-determination were associated with achieving the specified physical therapy goals among geriatric patients receiving physical therapy services.

Setting and Sample

Setting

The setting for this research was a subacute care facility in the northeastern United States in which patients resided while they were receiving physical therapy services and from which they would eventually be discharged to return to their previous living arrangements (e.g., a private home, assisted living facility, or long-term care facility). Patients who resided at the subacute facility received physical therapy services six times per week (Monday through Saturday) for 60 minutes each day. Overall, the patients participated in physical activities such as transfers, ambulation, and stair training, performed during physical therapy. This activity was documented daily in a Progress Note by the physical therapist or the physical therapist assistant until the patient was discharged from the facility and a Discharge Summary was added to the already existing Physical Therapy Evaluation, taken at the time of intake (see Appendix A). Patients usually participated in physical therapy for 1 month; however, there were some exceptions, and a patient could be discharged sooner or stay longer than 1 month, depending on his or her medical status.

Sample and Sample Size

I collected the data for this study from a convenience sample of male and female patients between the ages of 65 and 80 years, from diverse ethnic backgrounds, and receiving physical therapy treatments in a subacute unit in northeastern United States Even though I am employed in the physical therapy department, I did not have any involvement with the patients' treatment or documentation of progress, as progress was

documented daily on a progress form by the patients' physical therapist or physical therapist assistant, and there was a discharge summary. I sought permission to conduct the study from the rehabilitation company (see Appendix B) and the subacute facility located in the northeastern United States (see Appendix B). The sample size was $N = 86$, as a total of 86 participants was needed to reach a .80 power level of significance.

Inclusion Criteria

I established the following inclusion criteria:

1. Participants were drawn from an accessible population at the location where the study was conducted.
2. Participants were adults and legally able to provide informed consent.
3. Participants received physical therapy treatment while they resided at the subacute facility.
4. Participants were able to read and write in English to complete the questionnaires.
5. Participants were able to participate in 60 minutes of physical therapy services 6 days per week.

Due to the nature of the study, individuals were excluded from participation in the study if any of the following physical limitations were present: difficulty breathing, cardiac instability, hemiplegic or paraplegic conditions, tracheotomy, limitations preventing seeing and writing, as well as if the patient suffered from severe dementia with an inability to provide informed consent.

Procedures

I obtained permission to conduct the study from the administrator in charge at the subacute facility, located in the northeastern United States (see Appendix B). I also obtained permission from the rehabilitation company (see Appendix B). This permission granted me, as the researcher, access to information about every individual who was admitted to the facility for physical therapy treatment. As a therapist, I had access to all the information in the patients' medical files (doctors' orders, nurses notes, lab reports, rehabilitation notes, medication logs, and social service notes); however, as the researcher, I accessed only the physical therapy section (i.e., physical therapy evaluation form, physical therapy notes, and physical therapy discharge summary) needed for this study (see Appendix A).

The patients on my schedule were not part of my research study. This could easily be arranged because the facility promotes consistency so that the patients are treated by the same therapists until time of discharge. This condition was executed by the physical therapy department supervisor who performed scheduling on a daily basis. I also abided conscientiously by the conditions set forth by the Institutional Review Board (IRB) of Walden University regarding informed consent and confidentiality, after obtaining permission (IRB approval #05-21-15-0105278, expiration date May, 20, 2016) to conduct the study under the aegis of the university. One of the condition required by the IRB was that I would not meet face-to-face with the participants to reduce social desirability bias (i.e., swaying participants to provide answers that might please the researcher), but rather have informed consent forms and questionnaires delivered, together with the regular

welcome packet of the facility, by the Patient Care Liaison, and have participants deposit their completed paperwork in the rehabilitation department mailbox. The informed consent form informed the participants that they could complete the questionnaires at their convenience. They were also informed that it would take approximately 20 to 30 minutes to fill out the questionnaires. After completion of the Informed Consent Form and two questionnaires, the participants placed these items in a prelabeled yellow envelope, sealed it, and deposited it in the rehabilitation department mailbox.

The physical therapy evaluation form included medical condition, prior level of function, current level of function, and physical therapy goals (see Appendix A). Participants were between the ages of 65 and 80 years and received physical therapy services with treatment goals that consisted in transfers from sitting to standing, from chair to assistive device and vice versa, or from bed to wheelchair or regular chair and vice versa. Participants also had a goal for ambulation, with or without an assistive device, and a goal for stair training.

The Informed Consent Form, the Volunteer Flyer (see Appendix C), a copy of the LOT-R (see Appendix D), a copy of the SDS questionnaire (see Appendix E) were provided to the patients in a separate red folder, along with the usual welcome packet, which is always provided in a manila-colored folder. The two different-colored folders were provided to each individual by the Patient Care Liaison who was in charge of distributing the welcome packet at the facility as soon as the patient was brought into his or her room.

The participants were informed that participation was entirely voluntary and that participation in this research would not interfere or have any impact on any physical therapy decisions, their receiving physical therapy services, or any discharge decisions pertaining to their physical therapy services. The participants were informed that the research study was completely separate from their treatment process at the facility. They were informed that being part of the research was strictly on a "voluntary basis" and that they could discontinue their participation at any time without adverse consequences.

Each participant who consented to participate in the study was assigned a number from 1 to 86, which was the identifying number placed on all the forms provided or related to the patient to prevent any confusion and allow accurate counting of 86 participants. The participants filled out the questionnaires at their convenience in their rooms. Individuals could choose a private or a semiprivate room at the facility. The semiprivate rooms had two separate privacy curtains that could have been drawn around to cover half of the room to provide privacy at any time to each person. In the consent form, I informed the participants that if they had any questions regarding the study, they could reach me at any time via telephone or e-mail.

I stored the signed informed consent forms, the LOT-R, the SDS, and other collected data in a locked filing cabinet in my home office. I kept any medical or facility records in a private, locked cabinet at work (i.e., at the facility). There was no need for me to take any other records than the aforementioned ones to my home. During the course of physical therapy treatments, each patient's progress was documented daily on a progress form (see Appendix A) by the physical therapist or physical therapist assistant.

At the end of one month, the physical therapist wrote up the discharge status of each participant. This document listed each physical therapy goal (i.e., transfers, ambulation, and stair training) and addressed the discharge status of each goal (see Appendix A). I reviewed the participants' medical file to determine if the participant had met his or her physical therapy goals. The discharge status section included the status at the time of initial evaluation and the status at the time of discharge for the physical activities goals of transfers, ambulation, and stair training.

Data Collection

I collected the outcome data from the participants' medical files; these data were contained in the physical therapy section of each participant in which the physical therapy evaluation, physical therapy progress notes, and physical therapy discharge summary were located (see Appendix A). The participants' age, gender, medical diagnosis, physical therapy goals, and the outcome of physical therapy goals were documented. Potential participants were excluded if one of the initial diagnoses was respiratory insufficiency, tracheotomy, cardiac instability, hemiplegic, paraplegic, or severe dementia. I gathered this information at the subacute facility after the 1-month period of physical therapy services had been completed. Psychological data were collected with the LOT-R (see Appendix D) and the SDS (see Appendix E) survey instruments described in the following section.

Instrumentation

Life Orientation Test-Revised (LOT-R)

The LOT-R is a self-report questionnaire, designed by Scheier, Carver, and Bridges in 1994. It is a 10-item Likert-scale measure of optimism and pessimism. Optimism is represented by three statements phrased in a positive way such as the following: In uncertain times, I usually expect the best. Pessimism is represented by three statements phrased in a negative way such as the following: If something can go wrong for me, it will. The remaining statements of the scale are fillers and not used in the scoring process, which uses a 5-point Likert scale, in which 0 = *strongly disagree*, 1 = *disagree*, 2 = *neutral*, 3 = *agree*, and 4 = *strongly agree*. The LOT-R is an abbreviated version of the original Life Orientation Test (Scheier & Carver, 1985).

Scheier et al. (1994) demonstrated a strong correlation with the original Life Orientation Scale with test-retest reliability (R = .095), internal consistency of the optimism and pessimism subscales, and alpha ranging from .65 to .75 (Umstattd et al., 2007). Statements 2, 5, 6, and 8 were filler items and not utilized in the scoring. The responses to the scored items were coded to demonstrate that high values implied optimism. According to Scheier and Carver (1985), the ranges in the scale were based on a scale of 0 to 24, with 0 being extreme pessimism, and 24 extreme optimism. The average score is 15, which indicates slight optimism. According to C. S. Carver (personal communication, June 9, 2010), the permission granted on the Website with the statement: This instrument may be used “for your own research projects [but not] for any commercial purposes” was sufficient to use the LOT-R in this study.

Self-Determination Scale (SDS)

The SDS is a self-report questionnaire that assesses the degree to which adults tend to be self-determined in their lives. It is a short 10-item scale with two 5-item subscales. The Awareness-of-Self subscale assesses the degree to which an individual has a sense of self and is aware of his or her feelings. The Perceived-Choice subscale assesses the degree to which an individual feels that he or she has a choice with respect to behavior. The questionnaire consists of 10 items, in which individuals are asked to indicate which of two statements is more true for them; for example, Statement A says: I sometimes feel that it is not really me choosing the things I do. Statement B says: I always feel like I choose the things I do. Participants respond on a scale from 1 to 9, where 1 = *Only A feels true,* and 9 = *Only B feels true*. In order to score these scale items 1,3,5,7,9 are reverse-scored so that the higher score on each item indicates a higher level of determination. In order to reverse-score this scale, the response on each item is subtracted from 6, and the answer becomes the item score. The five items specific to the Awareness-of-Self subscale are 2,4,6,8,1, and the five items specific to the Perceived-Choice subscale are 1,3,5,7,9, which are averaged to calculate the scores of these subscales.

According to Sheldon, Ryan, and Reis (1996), the SDS "is a strong predictor of a wide variety of psychological health outcomes such as self-actualization, empathy, and life satisfaction" (p. 1273). After reverse-scoring the participants' responses, I computed the self-determination index. The scale was shown to have good internal consistency with

alphas ranging from .85 to .93 and a test-retest reliability of $R = .77$. Permission to use this instrument for personal, or noncommercial, reasons was granted on the Website.

Data Analysis

A power analysis revealed that, for a one-tailed test with a significance level of $p < .05$ to detect a medium expected effect size of .30 with a power of at least .80, the study would require a sample of at least 86 participants. I used convenience sampling to achieve $N = 86$. For this quantitative study, I used a multiple regression research design. The hypotheses set forth for testing in order to answer the research questions suggested this type of statistical analysis. The instruments used to measure the variables and the collected data allowed for a multiple regression analysis.

I scored the completed questionnaires by hand and cleaned and coded all variables in preparation for data analysis with the SPSS statistical software. The three main dependent variables of interest— level of transferring ability, ambulation of certain distances, and ascending/descending 4 stair steps—were coded on a scale from 1 = *maximal assistance* to 7 = *modified independence*, with higher numbers indicating lower levels of assistance needed to complete the task. In other words, higher numbers for each of the three dependent variables represented greater achievement of the given physical therapy goal. For a second set of analyses, the dependent variables were recoded as binaries (e.g., 0 = *did not achieve modified independence,* 1 = *did achieve modified independence*) in order to enable a more explicit testing of the hypotheses formulated with respect to Research Questions 1 and 2. For a third set of analyses, the three dependent variables were aggregated in three ways. First, the variables with the 7-point

scales were summed to give a continuous measure of overall physical activity (from 1 to 21, with higher numbers indicating higher levels of independence). Second, the recoded variables with the binary scales were summed to give an indication of the number of goals achieved (e.g., 0, 1, 2, or 3). Third, the variables created by the preceding method were recoded into a binary variable to show whether the patient either achieved all of the goals or did not achieve all of the goals. The measurements of each of the independent variables, optimism and self-determination, are described in further detail in the Instrumentation section. This constellation of variables enabled testing of the following questions:

1. Was greater optimism and self-determination associated with more independent transferring ability, ambulation, and ascending/descending, separately?
2. Was greater optimism and self-determination associated with greater overall physical activity independence, considering the three activities together?
3. Was greater optimism and self-determination associated with higher goal achievement for transferring ability, ambulation, and ascending/descending, when considered separately? In these analyses, achievement for each activity is defined as demonstrating (at least) modified independence.
4. Was greater optimism and self-determination associated with a higher overall number of goals achieved across all three physical activities?

5. Was greater optimism and self-determination associated with whether the patient achieved all three goals (i.e., transferring, ambulating, and ascending/descending with modified independence)?

The type of assistive device used by the patient was recorded as a categorical (nominal) variable. The variable was a dummy coded for regressions, using 0 = *no assistive device* as the reference level. Analysis was statistically adjusted for the type of device used, thereby reducing any potential confounding effect it may have.

I used a variety of statistical techniques to test the stated questions and associated hypotheses. I used three multiple linear regressions to test whether greater optimism and self-determination were associated with more independent transferring ability, ambulation, and ascending/descending (one for each dependent variable, as indicated by Question 1). These linear regressions included self-determination and optimism in the same block in order to assess the relative importance of these two dispositional variables in predicting each of the physical therapy outcomes. A fourth multiple regression examined whether self-determination and optimism were associated with an overall level of required assistance across the three physical activities combined (Question 2).

I conducted three binary regressions to test whether greater optimism and self-determination were associated with higher goal achievement for each of the three activities, separately: transferring ability, ambulation, and ascending/descending (Question 3). Three ordinal regressions were used to assess whether greater optimism and self-determination were associated with higher numbers of overall goals achieved (Question 4). Finally, I used one binary logistic regression to test whether greater

optimism and self-determination, considered together, predicted whether the patient achieved all three activity goals or not (Question 5). The type of device used by the patient was included as a covariate in all of the described analyses.

The described analyses presumed that the two main independent variables—optimism and self-determination—were measured using a continuous scale. However, it was also possible to conduct the same analyses with the use of dichotomized versions of the variables. For example, the optimism scale could have been recoded to reflect patients who were "high" and "low" in optimism using a median split, or mean split. The same could have been applied to the SDS.

Ethical Considerations

Ethical considerations were observed throughout the study. I provided potential participants with a brief, clear explanation in writing of the nature of the study, its purpose, and any possible risks involved in the Informed Consent Form. This form was provided to each potential participant, as well as the opportunity to ask questions about specific issues and procedures involved in participating in the study. Participants were assured of complete confidentiality and the voluntary nature of their participation, and they were informed of the benefits of participating in the study. The participants were given information on how to contact me, as the researcher of this study, as well as my university research adviser, if question should arise concerning the study.

The participants were provided with information regarding confidentiality. As stated in the informed consent form, all data or records obtained as part of this research study were kept confidential. The data could be obtained and accessed only by me as the

researcher. I added a signed Confidentiality Agreement (see Appendix G). The participants were informed that participation was entirely voluntary and that participating or not participating in this study would in no way affect the physical therapy services they were receiving. In addition, there were no known physical risks or benefits associated with participation in this study. In order to maintain confidentiality, as well as proper organization of the data, the information pertaining to each participant was coded with numbers from 1 to 86. Before data collection commenced, I submitted an application to the Institutional Review Board (IRB) of Walden University to obtain permission to conduct the study under the aegis of the university. Permission was granted (IRB#05-21-15-010527, expiration date May 20, 2016). I conscientiously followed all applicable ethical and federal guidelines. If participants were interested in the results of the study, they could request a copy of the results either from me or from Walden University upon completion of the study. This information was communicated to each participant on the consent form with a space for participants to write the address where the results should be mailed.

Summary

In this chapter, I described the importance of expanding research about the geriatric population. In order to expand research in this area, I took a first step toward closing a gap in the professional literature by using a quantitative approach and multiple regression analysis to examine whether the psychological factors of optimism, pessimism, motivation, and self-determination have an impact on achieving physical activity goals among geriatric participants who were receiving physical therapy treatment

in a subacute facility. I discussed the research methods, study design, ethical considerations, and purpose of this research. In Chapter 4, I present the results of the study.

Chapter 4: Results

The main purpose of this quantitative study was to examine whether optimism, pessimism, motivation, and self-determination were associated with achieving physical activity goals in a sample (N = 86) of geriatric patients who were receiving physical therapy services in a subacute facility. The research questions were derived from a review of the existing literature in the areas of optimism, pessimism, self-determination, motivation, and physical activity. The association between the variables of optimism, pessimism, motivation, and self-determination and their potential impact on achieving physical activity goals in geriatric participants receiving physical therapy services is discussed in this chapter. Further, I review the research questions and hypotheses used to explore the topic. Demographics of the sample, as well as a summary of the study variables used in the statistical analysis are discussed in detail, and the results of the data analysis are presented. I conclude the chapter with a summary.

Results

This section provides a summary of the sample, the participants' demographic background, and the study variables used for exploring the topic. Further, I discuss the results of the statistical analysis performed to answer the following research questions posed for the study.

Research Question 1

Does self-determination/motivation play any part in achieving the greatest level of physical function, which is modified independence among geriatric patients receiving physical therapy treatment?

H_o1: There is no statistically significant difference in achieving modified independence between geriatric patients who are more self-determined/motivated, as measured by the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are less self-determined, as measured by a lower score on the Perceived Choice subscale on the Self-Determination Scale.

H_a1: There is a statistically significant difference in achieving modified independence between geriatric patients who are more self-determined/motivated, as measured by the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are less self-determined, as measured by a lower score on the Perceived Choice subscale on the Self-Determination Scale.

Research Question 2

Does optimism relate to achieving a greater level of physical function, which is modified independence, among geriatric patients receiving physical therapy treatment?

H_o2: There is no statistically significant difference in achieving modified independence between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the scores on the Life Orientation Test-Revised.

H_a2: There is a statistically significant difference in achieving modified independence between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the scores on the Life Orientation Test-Revised.

Research Question 3

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are less self-determined and geriatric patients who are more self-determined upon discharge from physical therapy services?

H_o3: There is no statistically significant difference in achieving all three physical therapy goals between geriatric patients who are less self-determined, as measured by a low score on the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are more self-determined, as measured by a higher score on the Perceived Choice subscale on the Self-Determination Scale.

H_a3: There is a statistically significant difference in achieving all three physical therapy goals between geriatric patients who are less self-determined, as measured by low score on the Perceived Choice subscale on the Self-Determination Scale, and geriatric patients who are more self-determined, as measured by a higher score on the Perceived Choice subscale on the Self-Determination Scale.

Research Question 4

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic upon discharge from physical therapy services?

H_o4: There is no statistically significant difference in achieving all three physical therapy goals between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the Life Orientation Test-Revised.

H_a4: There is a statistically significant difference in achieving all three physical therapy goals between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the Life Orientation Test-Revised.

Participants' Demographics

The sample consisted of 86 geriatric patients receiving physical therapy services in a subacute facility. Their demographic information was as follows: 6.3% (n = 57) were female; 33.7% (n = 29) were male. Ages ranged from 65 to 80 years, with an average age of 75.5 (SD = 5.6). Most were Caucasians (74.4%, n = 64), followed by 10.5% (n = 9) Hispanics, 9.3% (n = 8) African Americans, 2.3% (n = 2) Asians, and 3.5% (n = 3) Other. For length of physical therapy (PT) treatment, 14.0% (n = 12) were in PT for 3 weeks, 68.6% (n = 59) for 4 weeks, and 17.4% (n = 15) for 5 weeks (see Table 1).

Table 1

Sample Demographics (N = 86)

	N	Percentage
Gender		
Male	29	33.7
Female	57	66.3
Race		
Caucasian	64	74.4
Hispanic	9	10.5
African-American	8	9.3
Asian	2	2.3
Other	3	3.5
Length of PT Treatment		
3 weeks	12	14.0
4 weeks	59	68.6
5 weeks	15	17.4
Age	Mean	*SD*
	74.5	5.6

Study Variables

The study variables used to answers the research questions are self-determination/motivation, optimism, modified independence, and number of physical therapy goals achieved. To calculate self-determination/motivation, I used the participants' responses to the SDS questionnaire. The questionnaire consists of 10 items that ask individuals which of two statements is more true for them; for example, Statement A says: I always feel like I choose the things I do; Statement B says: I sometimes feel that it is not really me choosing the things I do. Participants respond on a scale from 1 to 9, where 1 = *Only A feels true* and 9 = O*nly B feels true*. An SDS total score was first created in this study by taking a sum of the 10 items (reverse-scoring of Items 1, 3, 5, 7, and 9). Then, an SDS binary score was created for analysis, where the average overall SDS total score was used as a low/high cut point. Low self-determination/motivation was defined as an SDS total score of 32 or less, and high self-determination/motivation was defined as a SDS total score greater than 32. Table 2 shows a summary of the SDS binary score used for analysis, where 46.5% (n = 40) were classified as low self-determination, and 53.5% (n = 46) were considered high self-determination.

Table 2

Summary of Binary Self-Determination Score

Self-Determination	*N*	Percentage
Low	40	46.5
High	46	53.5

To measure optimism, a total optimism score was obtained by adding participant responses to 10 Likert-scale questions of the LOT-R questionnaire. This total score was then used to create a categorical score, using the following cut points: total score 0 to 13 = low optimism, total score 14 to 18 = moderate optimism, and total score 19 to 24 = high optimism. Table 3 shows a summary of the categorical optimism score used for analysis, where 19.8% (n = 17) were grouped as low optimism, 72.1% (n = 62) as moderate optimism, and 8.1% (n = 7) were considered as highly optimistic.

Table 3

Summary of Optimism Score

	N	Percentage
Low	17	19.8
Moderate	62	72.1
High	7	8.1

Modified independence (MODI) is defined as the achievement of a specific PT goal, that is, the ability of the patient to be able to perform the greatest level of function. Table 4 shows a summary of modified independence, where 15.1% (n = 13) achieved modified independence, and 84.9% (n = 73) did not achieve modified independence.

Table 4

Summary of Modified Independence (MODI)

	N	Percentage
Achieved MODI	13	15.1
Did not achieve MODI	73	84.9

Lastly, Table 5 shows a summary of the number of PT goals achieved by each participant in the study. The three goals consisted of transfer training, gait training, and stair training. Most participants achieved two goals (52.3%, $n = 45$), followed by no goals achieved (24.4%, $n = 21$), then three goals achieved (14.0%, $n = 12$), and one goal achieved (9.3%, $n = 8$).

Table 5

Summary of the Numbers of PT Goals Achieved

Number of PT goals	*N*	Percentage
None achieved	21	24.4
1 achieved	8	9.3
2 achieved	45	52.3
3 achieved	12	14.0

Note. PT = physical therapy.

Statistical Analyses

Research Question 1 asked the following: Does self-determination/motivation play any part in achieving the greatest level of physical function, which is modified independence among geriatric patients receiving physical therapy treatment? I used a binary logistic regression to determine if low/high self-determination/motivation (as the independent variable) was associated with modified independence (as the dependent variable). Table 6 shows the summary of low/high self-determination and whether a patient achieved modified independence. Results of the binary logistic regression showed no significant difference in modified independence between those with low versus high

self-determination/motivation ($\chi 2 = 2.98$, $df = 1$, $p = 0.084$). The odds ratio (and 95% confidence interval) of achieving modified independence by those with low self-determination versus those with high self-determination was 3.05 (0.86 - 10.81), which is the opposite of what one would expect. Nonetheless, this estimate was not statistically significant ($p = 0.084$) and thus unreliable. This implies that the null hypothesis could not be rejected, meaning that there is no statistically significant difference in achieving modified independence between geriatric patients who are more self-determined/motivated and geriatric patients who are less self-determined/motivated.

Table 6

Summary of Self-Determination and MODI

	Modified independence	
Self-determination	Achieved	Not achieved
Low	9 (69.2%)	31 (42.5%)
High	4 (30.8%)	42 (57.5%)

Note. MODI = modified independence. Numbers in parentheses represent the column percentage.

Research Question 2 asked the following: Does optimism relate to achieving a greater level of physical function, which is modified independence, among geriatric patients receiving physical therapy treatment? I used a binary logistic regression to determine if low/moderate/high optimism (as the independent variable) was associated with modified independence (as the dependent variable). Table 7 shows a summary of optimism and modified independence. Results of the binary logistic regression showed no significant difference in modified independence between those with low/moderate/high

optimism scores ($\chi 2 = 0.34$, $df = 2$, $p = 0.843$). The odds ratio (and 95% confidence interval) of achieving modified independence for those with moderate optimism versus those with low optimism was 1.62 (0.32 - 8.12); however, this comparison was not statistically significant ($p = 0.559$). When comparing those with high optimism to those with low optimism, reliable estimates could not be achieved owing to low numbers of those with high optimism and achieving independence (see Table 7). This implies that the null hypothesis could not be rejected, meaning that there was no statistically significant difference in achieving the greatest level of physical function (i.e., modified independence) between geriatric patient who were more optimistic and geriatric patients who were less optimistic, as measured by the scores on the LOT-R.

Table 7

Summary of Optimism and MODI

	Modified independence	
Optimism	Achieved	Not achieved
Low	2 (15.4%)	15 (20.5%)
Moderate	11 (84.6%)	51 (69.9%)
High	0 (0.00%)	7 (9.6%)

Note. MODI = modified independence. Numbers in parentheses represent the column percentage.

Research Question 3 asked the following: Is there a difference in the number of physical therapy goals achieved between geriatric patients who are less self-determined and geriatric patients who are more self-determined upon discharge from physical therapy services? To assess this question, I used ordinal logistic regression to determine if the number of PT goals achieved (as the dependent variable) was associated with

low/high self-determination/motivation (as the independent variable). Table 8 shows a summary of the numbers of PT goals achieved with self-determination. Results of the ordinal logistic regression showed no significant difference in increasing the numbers of PT goals achieved between geriatric patients who were less self-determined and geriatric patients who were more self-determined upon discharge from PT services ($\chi 2 = 3.31$, $df = 1$, $p = 0.069$). The odds ratio (and 95% confidence interval) for those with low self-determination having increased numbers of PT goals achieved was 2.14 (0.94 - 4.87), that is, more than for those with high self-determination. However, this association was not statistically significant. This implies that the null hypothesis could not be rejected, meaning that there was no statistically significant difference in achieving all three PT goals between geriatric patients who were less self-determined (as indicated by a low score after summation of the five items on the Perceived Choice subscale on the SDS) and geriatric patients who were more self-determined (as indicated by a higher score after summation of the five items on the Perceived Choice subscale on the SDS).

Table 8

Summary of Number of PT Goals Achieved by Self-Determination

	Self-determination	
Number of PT goals	Low	High
None achieved	8 (20.0%)	13 (28.3%)
1 achieved	9 (7.5%)	5 (10.9%)
2 achieved	20 (50.0%)	25 (54.3%)
3 achieved	9 (22.5%)	3 (6.5%)

Note. PT= physical therapy. Numbers in parentheses represent the column percentage.

Research Question 4 asked: Is there a difference in the number of physical therapy goals achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic upon discharge from PT services? To assess this question, I used ordinal logistic regression to determine if the number of PT goals achieved (as the dependent variable) was associated with low/moderate/high optimism (as the independent variable). I used ordinal logistic regression because the dependent variable (number of PT goals) has three levels, instead of two. Analysis results were in terms of the "odds of increased numbers of PT goals achieved." Table 9 shows a summary of numbers of PT goals achieved by low/moderate/high optimism groups. Results of the ordinal logistic regression showed no significant difference in the number of PT goals achieved as a function or result of having low/moderate/high optimism ($\chi 2 = 2.59$, $df = 2$, $p = 0.275$). The odds ratio (and a 95% confidence interval) of increasing numbers of PT goals for those with low optimism versus those with high optimism was 2.46 (0.46 - 13.00); however, this comparison was not statistically significant ($p = 0.290$). For those with moderate optimism versus those with high optimism, the odds ratio (and a 95% confidence interval) was 3.52 (0.79 - 15.54); this comparison was also not statistically significant ($p = 0.098$). This implies that the null hypothesis could not be rejected, meaning that there is no statistically significant difference in achieving all three PT goals between geriatric patients who are more optimistic and geriatric patients who are less optimistic, as measured by the LOT-R.

Table 9

Summary of Number of PT Goals Achieved by Optimism Groups

Number of PT goals achieved	Low	Moderate	High
None	4 (23.5%)	13 (21.0%)	4 (57.1%)
1 Goal	3 (17.6%)	5 (8.1%)	0 (0.0%)
2 Goals	8 (47.1%)	35 (56.5%)	2 (28.6%)
3 Goals	2 (11.8%)	9 (14.5%)	1 (14.3%)

Note. PT = physical therapy. Numbers in parentheses represent the column percentage.

Additional Analyses

As a post-hoc analysis, I added age and gender, along with age/gender interactions with each independent variable, to each regression for Research Questions 1, 2, and 3 to determine if adding age/gender had a significant impact on the associations between the independent and dependent variables.

For Research Question 1—Does self-determination/motivation play any part in achieving the greatest level of physical function, which is modified independence, among geriatric patients receiving physical therapy treatment— I added age, gender, and interactions of age x self-determination and gender x self-determination to the model. Results of adding these additional covariates showed no difference in the association between self-determination/motivation and modified independence. The association was still not statistically significant ($p = 0.223$). Additionally, no significant associations were found for age, gender, or the interactions (see Table 10).

Table 10

Logistic Regression Model for MODI With the Addition of Age and Gender With Self-Determination

Self-determination	Estimate	*SE*	*p*-value
Low	12.30	10.09	0.223
High	1.0	--	--
Age	0.001	0.12	0.992
Gender			
Male	1.0	--	--
Female	0.29	1.30	0.822
Age x self-determination			0.289
Gender x self-determination			0.589

Note. MODI = modified independence.

For Research Question 2—Does optimism relate to achieving a greatest level of physical function which is modified independence, among geriatric patients receiving physical therapy treatment?—I added age, gender, and interactions of age x optimism, and gender x optimism to the model. Results of adding these additional covariates showed no difference in the association between optimism and modified independence. The association was still not statistically significant ($p = 0.695$). Additionally, no significant associations were found for age, gender, or the interactions (see Table 11).

Table 11

Logistic Regression Model for MODI With the Addition of Age and Gender With Optimism Groups

Optimism	Estimate	*SE*	*p*-value
Low	1.0	--	--
Moderate	59.85	70.15	0.394
High	39.18	875.3	0.964
Age	0.60	0.88	0.492
Gender			
Male	1.0	--	--
Female	-0.28	1.71	0.871
Age x optimism			0.680
Gender x optimism			0.967

Note. MODI = modified self-determination.

For Research Question 3—Is there a difference in the number of physical therapy goals achieved between geriatric patients who are less self-determined and geriatric patients who are more self-determined upon discharge from physical therapy services?—I added age, gender, and interactions of age x number of PT goals and gender x number of PT goals to the model. Results of adding these additional covariates showed no difference in the association between number of PT goals and self-determination. The association was still not statistically significant ($p = 0.289$). Additionally, no significant associations were found for age, gender, or the interactions (see Table 12).

Table 12

Logistic Regression Model for Number of PT Goals With the Addition of Age and Gender

	Estimate	*SE*	*p*-value
Self-determination			
Low	6.00	5.66	0.289
High	--	--	--
Age	-0.12	0.122	0.310
Gender			
Male	0.37	1.45	0.798
Female	--	--	--
Age x self-determination	0.07	0.08	0.406
Gender x self-determination	0.22	0.92	0.814

Note. PT = physical therapy.

For Research Question 4—Is there a difference in the number of physical therapy goals achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic upon discharge from physical therapy services?—I added age, gender, and interactions of age x number of PT goals and gender x number of PT goals to the model. Results of adding these additional covariates showed no difference in the association between number of PT goals and optimism. The association was still not statistically significant ($p = 0.745$ for low vs. high optimism and $p = 0.847$ for moderate vs. high optimism). Additionally, no significant associations were found for age, gender, or the interactions (see Table 13).

Table 13

Logistic Regression Model for Number of PT Goals With the Addition of Age and Gender

Optimism	Estimate	*SE*	*p*-value
Low	-4.06	12.51	0.745
Moderate	-1.19	6.21	0.847
High	--	--	--
Age	0.07	0.17	0.687
Gender			
Male	1.63	1.72	0.344
Female	--	--	--
Age x optimism	-0.05	0.09	0.538
Gender x optimism	0.88	0.90	0.328

Note. PT = physical therapy.

Summary

The main purpose of this quantitative study was to examine whether optimism, pessimism, self-determination, and motivation were associated with achieving physical activity goals in geriatric patients receiving PT services in a subacute facility. Results of the analyses showed that there were no significant differences in the achievement of modified independence between patients who had low versus high self-determination/motivation or between patients who had low versus high optimism. Additionally, the number of PT goals achieved by geriatric patients did not differ between those who had low versus high self-determination or motivation or between those who had low, moderate, or high optimism. When adding age, gender, and age-gender interactions with each independent variable, results of the models showed no difference in the independent/dependent variable associations and no significant associations for age, gender, or any interaction effects.

Chapter 5: Discussion, Conclusions, and Recommendations

The effect of optimism versus pessimism in many areas of life and human endeavor has often been studied. It has been an area of interest for more than 200 years (Chang, 1996). Since the beginning of this century, the optimism-versus-pessimism question has inspired researchers to explore these concepts in the areas of personality and in social, clinical, and health psychology. According to Scheier and Carver (1987), the terms *optimism* and *pessimism* can be generalized to stand for a person's positive or negative outcome expectancies; these terms further represent, promote, or lessen an individual's psychological and physiological well-being (Chang, 1996).

Optimism and pessimism have often been researched with participants who provided self-report measures concerning their state of health and well-being. Past studies have demonstrated that dispositional optimism is correlated with physiological and psychological outcomes such as health symptoms, depressive symptomatology, coping, adjusting to breast cancer, and the ability to recover from surgery (Brenes et al., 2002).

The main purpose of this quantitative study was to examine whether there was an association between the variables of optimism, pessimism, motivation, and self-determination and their impact on achieving physical activity goals among geriatric participants receiving PT services. The respondents in this study were 86 patients between the ages of 65 and 80 years and of both genders; they came from diverse ethnic backgrounds and were receiving PT treatment in a subacute unit in the northeastern United States. I used a convenience sampling technique to allow for the inclusion of the

widest range of respondents. Outcome data were collected from the participants' PT evaluation, progress notes, and PT discharge summary. I also collected data on the participants with the LOT-R, a 10-item self-report questionnaire that measures optimism and pessimism with a Likert-type scale. The LOT-R was designed by Scheier et al. in 1994. Another questionnaire used was the SDS, a self-report questionnaire that assesses the degree to which adults tend to be self-determined in their lives. It is a short 10-item scale with two 5-item subscales. The Awareness-of-Self subscale assesses the degree to which an individual has a sense of self and is aware of his or her feelings. The Perceived-Choice subscale assesses the degree to which an individual feels that he or she has a choice with respect to behavior. In order to examine whether optimism, pessimism, motivation, and self-determination were associated with achieving physical activity goals in geriatric patients receiving PT services, I used a multiple regression research design.

The remainder of this chapter includes an interpretation of the findings, limitations of the study, recommendations for future research, implications for social change, and a conclusion.

Interpretation of Findings

Research Question 1

Does self-determination/motivation play any part in achieving the greatest level of physical function, which is modified independence among geriatric patients receiving physical therapy treatment?

Regarding this research question, I found that no statistically significant difference existed in modified independence between those with low self-

determination/motivation and those with high self-determination/motivation. Dacey et al. (2008) had determined that an increase of intrinsic and self-determined external factors were associated with being more physically active among the older adult population. It demonstrated that older adults were motivated to perform physical activities because they enjoyed them; they were able to socialize or listen to music while exercising.

In the present study, I provided a different view or outlook than the previous theoretical findings of Ryan and Deci (2000) on self-determination and motivation, in which these two independent variables were correlated in achieving greatest levels of physical function. The different findings of the present study may be attributable to the fact that Ryan and Deci's theories may not appertain to the elderly population of today. The current research contradicts the earlier findings in that no statistically significant difference could be detected between low versus high self-determination/motivation toward achieving a level of modified independence—a finding that could be due to a different outlook on life by this geriatric population compared to previous generations. What researchers assumed and reported in the past may not hold true for the changing geriatric population in today's society (Cardenas et al., 2009).

Research Question 2

Does optimism relate to achieving a greater level of physical function, which is modified independence, among geriatric patients receiving physical therapy treatment?

Regarding this research question, I found that no statistically significant difference existed in achieving modified independence between those with low/moderate/high optimism scores. Previous researchers concluded that pessimistic

individuals may not seek treatment as often as individuals who are optimistic, and they demonstrated that pessimistic individuals scored significantly poorer in all functional activities. In addition, previous researchers indicated that pessimistic individuals tended to have poor coping skills, especially if they were in pain. Such individuals may find it difficult to seek medical assistance to decrease their pain or to adhere to a treatment or exercise plan, which leads to even greater physical inactivity (Brenes et al., 2002).

Research Question 3

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are less self-determined and geriatric patients who are more self-determined upon discharge from physical therapy services?

Regarding this research question, I found that no statistically significant difference existed in the numbers of PT goals achieved upon discharge from PT services between low/high self-determination/motivation in the geriatric participants. This result seems to contradict the theories of Ryan and Deci (2000), who found that self-determined individuals are better able to reach their goals. However, in the present study, the findings showed the opposite of Ryan and Deci's beliefs. This contradiction suggests that a different theory may need to be explored to explain the results. It is possible that the geriatric population has changed over time and that a different perspective or theory may provide a better fit and deliver more suitable explanations for the outcomes of the current study.

Research Question 4

Is there a difference in the number of physical therapy goals achieved between geriatric patients who are more optimistic and geriatric patients who are less optimistic upon discharge from physical therapy services?

Regarding this research question, I found that no statistically significant difference existed in the numbers of PT goals achieved upon discharge from PT services between geriatric patients who were optimistic and geriatric patients who were pessimistic. This finding is also contrary to the theoretical basis researched by Scheier and Carter, in 1985, in which optimistic individuals found meaning in their life by seeing negative events as external, unstable, and caused by specific situations. They tended to see their medical health or any other life situation as temporary, external, and probably short-lived. On the other hand, pessimistic individuals tended to see their negative health issues or any other situation as persistent, internal, and long-lasting. In 2007, Umstattd et al. reported that optimistic individuals tended to take care of any health issues and thus reduce health risks and that dispositional optimism was associated with positive physiological and psychological components such as recovering from an illness or surgery and battling or surviving cancer. By contrast, in the current study, I contradicted this theory, as optimism and pessimism did not seem to affect the process of recuperating from sickness, the decline in medical status, or participation in PT services. In regards to this research study, the participants may have different coping skills, different values in life, and different stressors, which may be pertinent only to the geriatric population.

In this study, I found that no statistically significant difference existed in modified independence between those with low and those with high self-determination/motivation. In addition, there was no significant difference in modified independence between those with low/moderate/high optimism scores. I also found that no significant difference existed in the numbers of PT goals achieved upon discharge from PT services between low/high self-determination/motivation in geriatric patients. Lastly, I found that no significant difference existed in the numbers of PT goals achieved upon discharge from PT services between geriatric patients who were optimistic and those who were pessimistic.

With this study, I sought to close a gap in the professional literature, which showed a paucity of research in the area of the aging process, a phase during which physical and cognitive abilities tend to decline. I found that all the null hypotheses tested in order to answer the four research questions posed for this study had to be accepted. The findings of this study were either incongruent with or stood in contrast to the findings of related earlier studies found through a review of the literature. Those findings were able to shed light on the relationship between self-determination, motivation, optimism, and pessimism and their effect on physical function in the geriatric population. These dissimilar results are further detailed in the following sections of this chapter.

This study provides a contradictory view to the theoretical findings of Scheier and Carver (1985), pertaining to optimism and pessimism. This contradiction may be due to the present population consisting of so-called Baby Boomers, which represent 20% of the American population. Baby Boomers were born after War World II, 1946 to 1964, and

are, at the time of this writing, 52 to 70 years old. It is a generation that holds that being physically fit is an important component of life. Baby Boomers tend to experience the aging process as part of life, and they prevent their physical decline by staying active as much as possible. This is the generation that seeks medical treatment, participates in PT treatments to prevent physical deterioration, and continues an exercising routine to maintain the highest level of independence as long as possible. They have access to better health, which leads to longevity, and they adopted a healthier life style than previous generations did (Munk, 2007).

Relating the Findings of This Study to the Literature

In this study, *physical function* has been used to mean the establishment and achievement of PT goals, consisting in transfer training, gait training, and stair training without any regard to obtaining the knowledge of the participants' enjoyment of participating with PT services. Dacey et al. (2008) demonstrated that older adults were motivated to perform physical activities because they enjoyed them. They also showed that the participants felt that external factors provided motivation such as the enjoyment of socializing or being able to listen to music while exercising. In my study, participants receiving PT treatment participated with services because they had to be able to improve their physical function in order to be able to function at home. They had to achieve their level of modified independence in order to be able to return to living alone. The fact that the participants did not like to perform exercises or be physically active was not taken into account, in my study, which is an important component because it could have yielded information or possible explanations why functional goals were met or not met.

This cognitive component could have provided additional information as to the participants' personal views on participating with PT services. With this study, it would have been helpful to explore different reasons why patients felt that they had to participate or perform these physical activities. Some participants may have felt obligated to participate with PT services in order to improve their endurance, balance, and muscle strength. Other participants may have felt that they participated with PT services as an enjoyment or as a way of improving their quality of life.

Umstatted et al. (2007) used objective measurements of physical function relative to psychological factors such as optimism and pessimism. The researchers explored the relationship of dispositional optimism and pessimism, self-efficacy, and physical activity in 231 older midwestern American women, aged 60 to 85 years, using the LOT-R. Gait speed was measured objectively by having the participants walk along a 7-meter pathway at normal speed while negotiating obstacles. Participants were also timed while negotiating a flight of 15 steps. They underwent the 8-foot Up and GO Test, which is a timed test in which the participant starts from a sitting position, then walks 8 feet as quickly as possible, and returns to the sitting position. The Gait Efficacy Scale was used to measure the participants' belief about being able to perform the stair test and overcome obstacles in their path. The Activities-Specific Balance Confidence Scale was used to measure each individual's confidence in being able to perform each activity without compromising balance. Umstattd et al. (2007) provided support to the present research study as it provided objective measurements of the physical changes individuals underwent as they aged such as decrease in muscle strength, decrease in mobility, and

decrease in joint range of motion. They confirmed that advancing age often coincides with the onset of a medical condition or illness that can affect physical function and decrease physical activity.

Umstattd et al.'s research of 2007 contained some differences with the current study. One of the main differences was shown relative to the cognitive component in that the former researchers reported that pessimism was independently and objectively associated with physical function or physical activities when variables were controlled (e.g., demographics and self-reported health issues).The overall difference with Umstattd et al.'s (2007) study was that the participants were all women, whereas, in the present study, participants were both men and women. In the current study, participants were not asked to report their confidence level or personal beliefs about being able to perform each functional activity in order to achieve each PT goal. This would have been an important cognitive component to explore because it could have providing additional information or reasons why participants did not meet their PT goals.

Limitations of the Study

This study had four potential limitations. The first limitation was the use of a convenience sample. While this sampling technique was deemed appropriate for the study, randomly choosing a larger population from a greater number of facilities could have produced a larger pool of potential participants and potentially different results. The second limitation was the age of the participants, who were patients between the ages of 65 and 80 years. If the age of participants had been between 55 and 70 years, it might have produced a different effect or outcome of optimism, pessimism, motivation, and

self-determination on the achievement of PT goals in that the physical capacities and psychological needs of a 65-year-old are different from those of a 95-year-old person (Laidlaw & Pachana, 2009).

The third limitation was the use of instruments consisting of survey questionnaires. This posed a limitation to the study because participants provided self-reported answers on each questionnaire pertaining to the research topic, which may have been inaccurate or biased. I had no way of knowing if a participant answered each statement or question truthfully or how much thought he or she devoted to each statement or question. Participants may have interpreted each statement or question differently as there was room for subjectivity. However, several research studies included in the literature review employed measureable instrumentation, including the 2007 study by Umstattd et al.

The fourth limitation was the research design used in this quantitative study. I performed multiple regression analysis, which indicated the existence of a relationship between two or more variables. It did, however, not provide any indication of a causal relationship between two or more variables.

Recommendations for Further Research

The main purpose of this quantitative study was to examine whether optimism, pessimism, motivation, and self-determination were associated with achieving PT goals in geriatric patients receiving PT services. With respect to all four research questions posed for the study, the null hypotheses tested to answer the questions had to be accepted. This means that none of the alternate hypotheses for these four research questions could

be accepted. Because of the limitations identified in this study, it would be useful for future researchers to conduct further studies on this topic with the following recommendations:

Consider expanding research to other large facilities and a larger sample of patients to determine whether there is a difference in the effect of optimism, pessimism, motivation, and self-determination among the geriatric population receiving PT services. This would be important because one of the limitations of the current study was its focus on a single subacute facility in the northeastern United States. The results of this study may not be generalizable to other facilities in other parts of the country.

Change the outcome assistance level required at the time of discharge from PT services; it should be changed from *modified independence* to *close supervision* to make the level of assistance more realistic with the age and medical conditions in this population. Because patients may have medical conditions that compromise their physical abilities, a level of close supervision may be more attainable than a level of modified independence.

Last, an additional consideration or option would be to replace stair training with bed mobility because bed mobility is a function that has to be performed on a daily basis and is thus a necessary physical function. It is also a functional goal covered in all PT treatments. Stair training, on the other hand, may not be a desired goal; it is a physical function not attainable by every patient because he or she may have decreased balance, decreased endurance, and decreased muscle strength in both lower extremities. Stair

training is considered a high-level, or advanced, physical function because it can be difficult for some patients to perform as a result of their compromised medical condition.

One recommendation for future research is to continue with male and female participants, but to utilize different research theories as the theoretical foundation, which might provide a better perspective on the findings. The use of different theories could be helpful in future research because of increasingly greater differences exhibited in the attitudes and beliefs of the geriatric population as time goes by.

In addition, a qualitative study or a qualitative approach in the initial evaluation, progress reports, and discharge summaries would be useful, which are already available as objective data in the field of PT. Yet, a psychological intervention or personal interviewing might be more useful to both the research and the participant for determining an outcome. The inclusion of a psychological intervention or interview would allow the researcher to gain a better understanding of a participant's motivations, goals, feeling, opinions, and their personal outlook on life. What emerged as an important insight from this study is this: What could be assumed or explored in prior research with prior generations of elders, may no longer be applicable in a changing, more modern world with a rapidly increasing geriatric population, composed of the Baby Boomer generation.

Implications for Social Change

The geriatric population is increasing as the generation of Baby Boomers (i.e., people born after War World II, between 1946 and 1964) is now reaching the age range of 52 to 70 years). In 2007, Munk reported that Baby Boomers represent 20% of the

American population. This generation is presently leaving the workforce. The Baby Boomers are a group of individuals for whom physical fitness is an important component of life. They experience their aging process as part of life, and they aim to prevent their physical decline by staying active as long and as much as possible (Munk, 2007) This is the generation that seeks medical treatment, participates in PT treatments to prevent physical deterioration, and continues an exercising routine to maintain the highest level of independence as long as possible. This generation has had access to better health, which leads to greater longevity. According to Laidlaw and Pachana (2009), this is the population that will consist of 9.6 million in 2030, and it will double to 20.9 million by 2050.

Furthermore, aging is gender-related. Women continue to outnumber men at every age band; men have been experiencing death 7 to 8 years younger than women do. According to Laidlaw and Pachana (2009), 14.4 % of women over the age of 65 live to age 85 in the United States, compared to 8.4% of men, depicting a gender ratio of more than two women for every man. This signifies that, at age 55 and over, there are 81 men for every 100 women; however, at age 85 and over, there are 49 men for every 100 women (Pachana, 2009). This information needs to be taken into account in psychology and in the medical field because aging is experienced differently and affects men and women differently. Society needs to create support systems, stronger family relationships, and support groups as women are widowed more than men. Women will tend to face chronic illnesses. It is estimated that, in the United States, 7.5 million older women will live alone, compared to 2.5 million older men (Laidlaw & Pachana, 2009).

It is also possible that, regardless of the specific quantitative research methods applied, an individual's degree of optimism does not always correlate, much less explain, his or her treatment outcome. This idea should be kept in mind by clinicians, physical therapists, doctors, family members, and caregivers in designing treatment options in the area of PT, any type of functional activities, or exercise programs. It is essential to consider or introduce psychological interventions or an alternative support system to the elderly so that they can become or remain motivated in achieving their full potential or highest level of function. This concept was presented in a research study by Carles et al. (2007), who concluded that a group who had received motivational interviewing had a more positive behavior change and exercised an additional 68 minutes per week, compared to a group who did not receive the motivational interviewing. Carles et al.'s (2007) conclusions support the supposition of the current study, namely, that the participants might have benefited from a motivational component or a motivational technique. It would have helped the participants in case they felt frustrated, stressed, or anxious about achieving their PT goals. Furthermore, this might have given a boost to participants who were tempted to abandon their goals, had stopped working to their full potential, or thought that their goals were too difficult or impossible to achieve. Having obtained the aforementioned results in this study, the main implication appears to be that policies and funding in companies and in subacute and long-term care facilities need to incorporate alternative methods, programs, and psychotherapeutic interventions to help the elderly stay motivated or encourage motivation to achieve short- and long-term goals in their lives, as well as in their PT treatments.

Conclusion

Considering the extension of the human life span over the past century, it is important to improve the quality of life in the elderly population. The elder population has expanded because the Baby Boomers are aging, and they have acquired a better understanding of staying physically fit, living life to the fullest, understanding the importance of exercising, and seeking medical treatments to stay healthier longer (Munk, 2007). There is a need for clinicians, doctors, physical therapists, psychologists, caregiver, and relatives to understand and educate themselves about the elderly population, and to understand the cognitive and physical decline or negativity that may occur with the aging process. As people age, their bodies and minds undergo developmental changes, and it is important to promote the idea that research among the geriatric population is necessary to explore and learn more about physical limitations, physical and cognitive deficits, future and realistic goals, and the different outlook on life one may acquire in the aging process.

The main purpose of this study was to examine whether optimism, pessimism, motivation, and self-determination were associated with achieving PT goals by geriatric patients receiving PT services. The outcomes of this study did not confirm the ideas that were promoted decades ago, in which optimism, motivation, and self-determination was correlated with physiological outcomes. On the contrary, the present study revealed that there was no difference due to optimism, motivation, and self-determination in achieving PT goals in the geriatric sample ($N = 86$) studied. This demonstrates that, what has worked in previous years, may not necessarily work at present, possibly because people

now have more years of life than previous generations had, as well as changes in lifestyle, attitudes toward aging, and different social support systems (Laidlaw & Pachana, 2009).

As my review of the literature disclosed, not enough research is being published about the geriatric or elderly population. There is a need for researchers to expand their focus to the area of gerontology by addressing the aging process along with its physical and cognitive deficits. Therefore, there is a need for future researchers to continue addressing more thoroughly the outcomes of this present study. This study demonstrated that there may be a need for a psychological therapeutic component along with physiological treatments among the geriatric population in order for them to maintain or achieve motivation, optimism, and self-determination in terms of achieving their personal or PT goals. Providing only a physical component through PT may no longer be enough among the present-day elderly population. The elderly population can no longer be ignored because it will continue to grow in numbers and change in knowledge, attitude, and beliefs over the next 30 years (Munk, 2007). Researchers and society at large have to keep abreast of changing times and address the needs of the geriatric population appropriately to meet society's needs.

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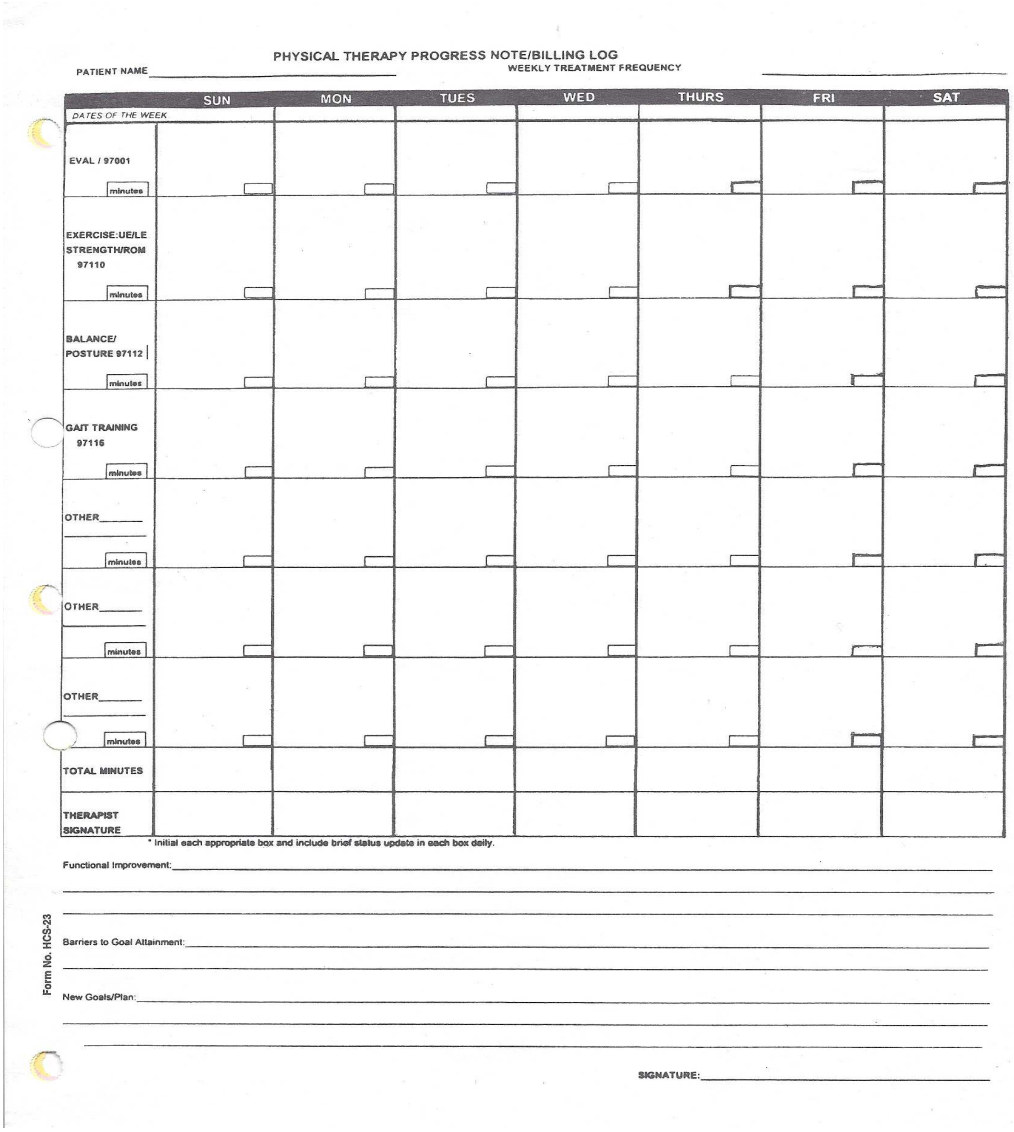
https://eric.ed.gov/?id=EJ524478

Appendix A: Physical Therapy Section of the Patient File

Physical Therapy Progress Notes



PHYSICAL THERAPY PROGRESS NOTE/BILLING LOG

PATIENT NAME_____ WEEKLY TREATMENT FREQUENCY _____

DATES OF THE WEEK	SUN	MON	TUES	WED	THURS	FRI	SAT
EVAL / 97001 minutes							
EXERCISE:UE/LE STRENGTH/ROM 97110 minutes							
BALANCE/ POSTURE 97112 minutes							
GAIT TRAINING 97116 minutes							
OTHER_____ minutes							
OTHER_____ minutes							
OTHER_____ minutes							
TOTAL MINUTES							
THERAPIST SIGNATURE							

* Initial each appropriate box and include brief status update in each box daily.

Functional Improvement:_____

Barriers to Goal Attainment:_____

New Goals/Plan:_____

SIGNATURE:_____

Form No. HCS-23

Physical Therapy Evaluation Form

HCFA 700 Form: PHYSICAL THERAPY EVALUATION ☐ Part A ☐ Part B ☐ Other_____

1. PATIENT'S LAST NAME	2. FIRST NAME	3. PROVIDER NO.	4. HICN
5. PROVIDER NAME	6. RECENT HOSPITALIZATION DATES FROM TO ☐ N/A	7. ONSET DATE	8. SOC. DATE
9. FREQUENCY & DURATION	10. PRIMARY DIAGNOSIS (pertinent medical DX)	11. TREATMENT DIAGNOSIS	12. VISITS FROM SOC.

13. PLAN OF TREATMENT FUNCTIONAL GOALS
Short Term Goals **(For _____ wks)**

OUTCOME *Long Term Goals* (For _____wks)

14. PLAN OF CARE

15. I CERTIFY THE NEED FOR THESE SERVICES FURNISHED UNDER THIS PLAN OF TREATMENT AND WHILE UNDER MY CARE.
PHYSICIAN NAME: _____ **DATE** _____
PHYSICIAN SIGNATURE: _____ ☐ **N/A ON FILE**

16. SIGNATURE (therapy signature/ discipline/ license #)

17. CERTIFICATION
FROM THROUGH ☐ **N/A**

18. INITIAL ASSESSMENT

AGE:_____ **M/F REFERRED BY:** _____ **REHAB POT: (circle one) Excellent Very Good Good Fair**

REASON FOR REFERRAL / HISTORY OF PRESENT ILLNESS (Justification for treatment services) :_____

PLOF:_____ **PMH:**_____

D/C PLAN/ Pt GOAL:_____ **PRECAUTIONS:**_____

RECENT THERAPY SERVICES: D/C Dates / Status ☐ **N/A** _____

EVALUATION:

ROM: UE: (circle) WFL / LIMITED_____ **LE:WFL/LIMITED**_____

STRENGTH: UE: R_____ **L**_____ **LE: R:**_____ **L:**_____

BED MOB: Rolling:_____ **sup←→sit:**_____ **TRANSFERS: sit ←→ stand:**_____ **stand pivot:**_____

BALANCE: SIT: static_____ **dyn**_____ **STAND: static**_____ **dyn**_____ **Balance Test Scores:**_____

AMB: Distance:_____ **Asst dev:**_____ **Amt of Asst:**_____

GAIT PATTERN/POSTURE:_____

_____ **PAIN/EDEMA:**_____

OTHER:_____

COGNITION: (circle one) ALERT / ORIENTED FOLLOWS COMMANDS: (circle) TACTILE CUES NEEDED / 1 STEP / 2 STEP / MULTI STEP

RECOMMENDATION/IMPRESSION:_____

Physical Therapy Discharge Summary

HCFA 701 ☐ RE-CERTIFICATION ☐ DISCHARGE ☐ PT ☐ OT ☐ SLP ☐ Part A ☐ Part B ☐ Other _____

1. PATIENT'S LAST NAME	2. FIRST NAME	3. PROVIDER NO.	4. HICN
5. PROVIDER NAME	6. PRIOR HOSPITALIZATION DATES FROM TO ☐ N/A	7. ONSET DATE	8. SOC. DATE
FREQUENCY & DURATION ☐ N/A	10. PRIMARY DIAGNOSIS (pertinent medical DX)	11. TREATMENT DIAGNOSIS	12. VISITS FROM SOC.

13. FUNCTIONAL GOALS *(Specify Updated Goals)* ☐ N/A
Short Term Goals (For _____weeks)

OUTCOME *Long Term Goals* (For _____ weeks)

14. PLAN OF CARE ☐ N/A

15. I HAVE REVIEWED THIS PLAN OF TREATMENT AND:
☐ RECERTIFY A CONTINUING NEED FOR THERAPY SERVICES
☐ DISCHARGE THERAPY SERVICES
PHYSICIAN NAME _____ DATE _____
PHYSICIAN SIGNATURE:_____ ☐ N/A ON FILE

16. SERVICE DATES FOR LAST BILLING PERIOD
FROM THROUGH

17. RECERTIFICATION DATES FOR NEXT BILLING PERIOD
FROM THROUGH ☐ N/A

18. FUNCTIONAL LEVEL - END OF BILLING PERIOD: DATE _____

☐ CONTINUE SERVICES OR ☐ DC SERVICES

RESIDENT RECEIVED _____ VISITS THIS BILLING PERIOD & HAS MADE _____ PROGRESS TOWARD GOALS.

LAST CERTIFICATION STATUS: (DATE_____)	PRESENT STATUS:	GOAL MET?
		Y / N / Partial
2.		Y / N / Partial
3.		Y / N / Partial
4.		Y / N / Partial
5.		Y / N / Partial

REASON TO: (Circle) CONTINUE or DISCHARGE SERVICES :

_____

_____

RECOMMENDATIONS: _____

_____

19. SIGNATURE (therapy signature/discipline/license #)

Form No. HCS-13

Appendix B: Permission Letters

alarishealth
at The Chateau

BRIDGING CARING & INNOVATION

April 16, 2015

Dear Leslie Bodnar,

I give permission for you to conduct the study entitled **"The Effect of Self-Determination, Motivation, and Dispositional Optimism on Physical Activity Goals in Geriatric Patients Receiving Physical Therapy Services."** As part of this study, I give you permission to provide surveys/questionnaires to participants/patients, and have access to their physical therapy evaluation, progress notes, and their physical therapy discharge summary, upon their completion of physical therapy services.

In order to preserve integrity of the study, and as you are one of the valued providers at our institution, we also understand and agree that those whom you serve as provider, will not be approached for study participation.

The study may include, on a voluntary basis only and at their own discretion, participants/patients who temporarily reside at the Chateau while obtaining physical therapy services. The decision to be/not be part of this research study will not interfere with obtaining physical therapy services at our facility. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Susan Roman
Administrator

April 16, 2015

Dear Leslie Bodnar,

I give permission for you to conduct the study entitled **"The Effect of Self-Determination, Motivation, and Dispositional Optimism on Physical Activity Goals in Geriatric Patients Receiving Physical Therapy Services"** at the Chateau, located at 96 Parkway, Rochelle Park, NJ 07662. As part of this study, I authorize you to provide surveys/questionnaires to participants/patients, and have access to their physical therapy evaluation, progress notes, and their physical therapy discharge summary, upon their completion of physical therapy services.

In order to preserve integrity of the study, and as you are one of the valued providers at our institution, we also understand and agree that those whom you serve as provider, will not be approached for study participation.

The study may include, on a voluntary basis only and at their own discretion, participants/patients who temporarily reside at the Chateau at Rochelle Park while obtaining rehabilitation services from our company, Advantage Rehabilitation Services, LLC. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Romilda Pulido, RPT
Regional Rehabilitation Director

Appendix C: Research Study Flyer

Volunteers Wanted For Research Study

Name of Study:
Effect of Self-Determination, Motivation, and Dispositional Optimism with Physical Therapy In Geriatric Patients.

Eligible Participants:

- Male/Female
- Age 65-80 years
- Residing at the Chateau in Rochelle Park for physical therapy
- Meets inclusion Criteria (being free of paralysis, cardiac instability, heart monitors, pacemakers, tracheotomy, limitations preventing seeing and writing, and dementia.

Purpose:
The purpose of this study is to examine if there is a relationship between the perspective that an individual holds and the progress or achievement made in physical therapy.

Time Involved:
Complete two different questionnaires regarding your perspectives of self-determination and optimism. The questionnaires can be completed at your convenience, and generally takes 20-30 minutes.

Benefits of Participation:
Your participation will be beneficial in determining how certain factors such as self-determination, motivation and optimism, pessimism play a role in improving physical function and attaining the functional goals in physical therapy.

This research study is being conducted by Leslie Bodnar who is a doctorate student at Walden University. All information is kept confidential and participation is strictly voluntary.

Appendix D: Life Orientation Test-Revised (LOT-R)

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

A = I agree a lot
B = I agree a little
C = I neither agree nor disagree
D = I disagree a little
E = I disagree a lot

1. In uncertain times, I usually expect the best.

[2. It's easy for me to relax.]

3. If something can go wrong for me, it will.

4. I'm always optimistic about my future.

[5. I enjoy my friends a lot.]

[6. It's important for me to keep busy.]

7. I hardly ever expect things to go my way.

[8. I don't get upset too easily.]

9. I rarely count on good things happening to me.

10. Overall, I expect more good things to happen to me than bad.

Note to scorer: Items 2, 5, 6, and 8 are fillers. Responses to "scored" items are to be coded so that high values imply optimism. Researchers who are interested in testing the potential difference between affirmation of optimism and disaffirmation of pessimism should compute separate subtotals of the relevant items.

Appendix E: Self-Determination Scale (SDS)

Instructions: Please read the pairs of statements, one pair at a time, and think about which statement within the pair seems more true to you at this point in your life. Indicate the degree to which statement A feels true, relative to the degree that Statement B feels true, on the 5-point scale shown after each pair of statements.

If statement A feels completely true and statement B feels completely untrue, the appropriate response would be 1.

If the two statements are equally true, the appropriate response would be a 3. If only statement B feels true and so on.

1.
A. I always feel like I choose the things I do.
B. I sometimes feel that it is not really me choosing the things I do.
Only A feels true
1
2
3
4
5
Only B feels true

2.
A. My emotions sometimes seem alien to me.
B. My emotions always seem to belong to me.
Only A feels true
1
2
3
4
5
Only B feels true

3.
A. I choose to do what I have to do.
B. I do what I have to, but I don't feel like it is really my choice.
Only A feels true
1
2
3
4
5

Only B feels true
4.
A. I feel that I am rarely myself.
B. I feel like I am always completely myself.
Only A feels true
1
2
3
4
5
Only B feels true

5.
A. I do what I do because it interests me.
B. I do what I do because I have to.
Only A feels true
1
2
3
4
5
Only B feels true

6.
A. When I accomplish something, I often feel it wasn't really me who did it.
B. When I accomplish something, I always feel it's me who did it.
Only A feels true
1
2
3
4
5
Only B feels true

7.
A. I am free to do whatever I decide to do.
B. What I do is often not what I'd choose to do.
Only A feels true
1
2
3
4
5
Only B feels true

8.
A. My body sometimes feels like a stranger to me.
B. My body always feels like me.
Only A feels true
1
2
3
4
5
Only B feels true

9.
A. I feel pretty free to do whatever I choose to.
B. I often do things that I don't choose to do.
Only A feels true
1
2
3
4
5
Only B feels true

10.
A. Sometimes I look into the mirror and see a stranger.
B. When I look into the mirror I see myself.
Only A feels true
1
2
3
4
5
Only B feels true

Scoring Information for the SDS. First, items 1, 3, 5, 7, 9 needs to be reverse scored so that higher scores on every item will indicate a higher level of self-determination. To reverse score an item, subtract the item response from 6 and use that as the item score. Then, calculate the scores for the Awareness of Self subscale and the Perceived Choice subscale by averaging the item scores for the 5 items within each subscale.
The subscales are:
Awareness of Self: 2, 4, 6, 8, 10
Perceived Choice: 1, 3, 5, 7, 9

Appendix F: Confidentiality Agreement

Name of Signer: _____

During the course of my activity in collecting data for this research, titled The Effect of Self-Determination, Motivation, and Dispositional Optimism on Physical Activity Goals in Geriatric Patients Receiving Physical Therapy Services, I will have access to information that is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement, I acknowledge and agree that:

1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge copy, release, sell, loan, alter, or destroy any confidential information except as properly authorized.
3. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification, or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the job that I will perform.

6. I understand that violation of this agreement will have legal implications.
7. I will access or use only systems or devices that I am officially authorized to access, and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

In signing this document, I acknowledge that I have read the agreement and that I agree to comply with all the terms and conditions stated above.

Signature: Leslie Urias-Bodnar Date: 4/16/15