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The Experiences of Physical Therapists Trained in Instrument Assisted Soft Tissue Mobilization for Self-Care

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This is to certify that the doctoral dissertation by

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and that any and all revisions required by
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Abstract

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Physical therapists and physical therapy students are susceptible to overuse and postural-related injuries related to computer work, lifting, and transferring patients. An effective technique for musculoskeletal dysfunction is instrument assisted soft tissue mobilization (IASTM) self-care. The purpose of this phenomenological qualitative study was to better understand the lived experiences of physical therapists and physical therapy students who are trained in IASTM self-care. The theoretical foundation for this study was the health belief model (HBM), which proposes that one's beliefs strongly influence behavior change. In alignment with HBM, research questions related to the participants' beliefs regarding the perceived threat of not performing IASTM self-care, barriers to performing IASTM self-care, perceived benefits of performing IASTM self-care, and an individual's self-efficacy to perform IASTM self-care. Data were collected using semi-structured interviews with eight physical therapists and five physical therapy students. The themes that emerged from this research were cues to action, fear, motivation, and self-efficacy. These findings indicate that the internal and external cues, fear of injury or reinjury, motivation toward a future goal, and beliefs about abilities to perform IASTM may drive physical therapists and physical therapy students to adopt the positive health behavior change of IASTM self-care. This information can help in designing environments that encourage physical therapists and physical therapy students to utilize IASTM self-care. A positive social change may occur by patients adopting these behaviors that are modeled by their physical therapists.

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Chapter 1: Introduction to Study

Introduction

Physical therapists and physical therapy students have a high incidence of musculoskeletal injuries due to poor posture, prolonged postures and overuse (Darragh et al., 2009; Tanveer & Shahid, 2017). Physical therapists are trained in how to avoid and treat these postural and overuse dysfunctions for their patients, yet many physical therapists do not make these positive behavioral changes when it comes to their own self-care (Holder et al., 1999). instrument assisted soft tissue mobilization (IASTM) has been shown to be an effective technique to prevent and treat musculoskeletal postural and overuse dysfunctions (Cheatham et al., 2019). The intervention of IASTM can be adapted to be used for self-care. The ability to treat oneself might make the benefits of the intervention more accessible to busy physical therapy students and physical therapists who do not have time to see a clinician to perform IASTM. In addition, the ability to perform IASTM self-care may have the added benefit of improving one’s self-efficacy. A better understanding of the lived experiences of individuals who are trained in IASTM self-care would help in determining the variables that promote and diminish the likelihood of adopting this positive behavioral change. This understanding will inform how to promote this behavioral change to physical therapists and physical therapy students to decrease their incidence of disability. It has also been shown that the behaviors a physical therapist models are often adopted by their patients which would then create positive social change to a broader population.

Background

Researchers found that 52% of physical therapy students suffer from posture related pain with the main cause being poor posture (Tanveer & Shahid, 2017). These dysfunctions often come from prolonged seated postures involved with studying (Khan & Omar, 2012). Psychosocial stress may also play a role in promoting these poor postures. This dysfunction often leads to disability and decreased quality of life. Students will often have cervical and upper quarter disability and decreased pulmonary capacity secondary to this positioning (Hussain et al., 2022). In addition, doctor of physical therapy students report higher levels of depression and decreased self-efficacy when compared to their aged, matched peers (Bogardus et al., 2021).

This trend towards dysfunction and musculoskeletal dysfunction is also seen in practicing physical therapists (Holder et al., 1999). Researchers found that 91% of physical therapists experience work-related injuries over the course of their profession (Darragh et al., 2009). These injuries are due to faulty posture and overuse. The injuries tended to occur in the low back 62% of the time and the upper back and hand 23% of the time (Holder et al., 1999). Researchers found that the incidence of work-related injuries was consistent across experience levels and age of the physical therapists (King et al., 2009). Even though physical therapists and physical therapy students are trained in preventing postural and overuse injuries, they are still at risk of sustaining these dysfunctions.

IASTM is a technique where an individual uses a tool to massage and stretch soft tissue. The different types of soft tissue dysfunction that can be positively influenced and prevented by IASTM include decreased muscle flexibility, trigger points, musculotendinous microtrauma, scar tissue, and peripheral neurodynamics (Baker et al., 2013). Tools that are used include a variety of instruments such as stainless-steel massage tools, carved jade, or even something as simple as a soup spoon, coin, or tennis ball. This technique has been shown to decrease the incidence of postural related dysfunctions and to improve individual self-efficacy (Finch & Bessonnette, 2014; Keirautret et al., 2020.). IASTM may be an effective intervention to improve strength, range of motion (ROM), and posture (Kim et al., 2017). In addition, massage to oneself has been found to be an effective intervention to regain an internal locus of control and promote self-efficacy in medical students (Binstock et al., 2020). The impact of better understanding this population may have an exponential societal impact by promoting this health behavior in physical therapists' current and future patients (Binstock et al., 2020).

In regards to a positive health behavior change such as physical activity there are various social and belief motivators (Cho et al., 2020). The barriers to health behavior changes can be lack of time and lack of motivation. Unfortunately, doctor of physical therapy students and physical therapists are susceptible to these dysfunctions. University students are less likely to undertake positive health behavior changes (Colman et al., 2016). Physical therapists are susceptible to these dysfunctions due to the demands of clinical care, including working in awkward positions, sustained postures, performing manual therapy, and transferring patients (Holder et al., 1999). There is limited research on lived experiences regarding the performance of self-applied IASTM in doctor of physical therapy students and physical therapists.

The significance of this qualitative study is to understand the lived experiences of doctor of physical therapy students and practicing physical therapists who are trained in utilizing a soft tissue mobilization tool to perform self-care, including tissue mobilization and stretching. The physical therapists and physical therapy students' beliefs regarding the perceived threat of not performing IASTM self-care, barriers to performing IASTM self-care, perceived benefits of performing IASTM self-care, and an individual's self-efficacy to perform IASTM self-care were explored. This type of qualitative study is comparable to one designed to understand the lived experience of compliance with a home program by patients with knee osteoarthritis (Campbell et al. 2001). The participants were aware that for a successful outcome, they would need to perform the exercises regularly. The individuals who adopted a long-lasting behavioral change reported that the effectiveness of the intervention and how easily they could incorporate it into their day were the main drivers for this behavior change. This may drive funding to pay for education and access to tools to help with performing self-massage. Physical therapists who model these behaviors will encourage more of their patients to adopt these positive behaviors and, in turn, will improve societal health and decrease the cost burden of preventable postural pathologies for individuals and the health care system. In this way this research will be able to create positive social change.

Problem Statement

There is a gap in the literature regarding the lived experience of physical therapists and student physical therapists who are trained in IASTM for self-care. Although physical therapists have extensive training in preventing and treating postural dysfunction a high percentage develop these musculoskeletal dysfunctions (Darragh et al., 2009; Tanveer & Shahid, 2017). Physical therapy students and physical therapists in the first 4-5 years of clinical care are at the highest risk of developing work-related strain injuries (Glover, 2002). The lifetime work-related injury rate is 90% with one in six physical therapists leaving the profession because of these injuries. Physical therapists tend not to take time off from work and do not seek out care from a doctor of occupational health department (Campo et al., 2008). The majority of physical therapists self-treat or have a colleague treat them for work-related strain injuries.

These postural dysfunctions have a large impact on the economy and the healthcare system. Low back pain is the number one global cause of disability, accounting for 42.5 million individuals living with postural disability in 2017 (Buchbinder et al., 2020). In the United States, over $134.5 billion was spent on the treatment of neck and low back pain (Dieleman et al., 2020). There is evidence that IASTM is an effective intervention to treat these dysfunctions, but there is a lack of research regarding physical therapists and physical therapy students' beliefs regarding the perceived threat of not performing IASTM self-care, barriers to performing IASTM self-care, perceived benefits of performing IASTM self-care, and an individual's self-efficacy to perform IASTM self-care.

Purpose of the Study

The purpose of this qualitative study is to better understand the lived experiences of physical therapists and physical therapy students who are trained in IASTM self-care. This understanding may provide insight into the health beliefs that promote this positive behavioral change in physical therapists and physical therapy students. In addition, this understanding may provide information on how to better facilitate the adoption of self-IASTM in physical therapy patients. There is a paradoxical social problem with physical therapists and physical therapy students who are trained in IASTM self-care to prevent overuse and postural dysfunction, but do not use these interventions and develop overuse and postural dysfunction (Darragh et al., 2009; Tanveer & Shahid, 2017). The intent of this study is to better understand physical therapists' and physical therapy students' beliefs regarding the perceived threat of not performing IASTM self-care, barriers to performing IASTM self-care, perceived benefits of performing IASTM self-care, and an individual's self-efficacy to perform IASTM self-care.

Research Question

RQ1: What are the lived experiences of physical therapists and physical therapy students who are trained in the performance of IASTM self-care?

Theoretical Framework for the Study

The health belief model (HBM) was developed by Irwin M. Rosenstock, Godfrey M. Hochbaum, Stephen Kegeles, and Howard Leventhal (1952). This team of social psychologists worked for the U.S. Public Health Service. They developed this theoretical framework to better understand why individuals were not participating in disease detection and prevention programs (Rosenstock, 1974). Since that time, the HBM has been applied to a broad range of applications related to behavioral change in diverse populations and health behaviors.

There are several constructs contained in the HBM that are believed to influence an individual's ability to create a positive health behavior change (Janz & Becker, 1984). These constructs are personal characteristics, perceived susceptibility, perceived benefits, self-efficacy, and cues to action. Personal characteristics include gender, age, ethnicity, socioeconomic status, education, and personality. These characteristics are believed to influence perceptions such as perceived severity, susceptibility, benefits, barriers, and self-efficacy. Perceived severity and susceptibility together are combined under the umbrella term of "perceived threat". Perceived benefits of a behavior change interact with perceived threat. The higher the perceived benefit, the less likely a perceived threat will inhibit the change. Cues to action include what is in their environment that will trigger action. Self-efficacy is the belief in oneself that an individual can be successful in the necessary actions to create the desired behavior change. The HBM may be a useful conceptual framework to better understand the problem, purpose, and revelations from my qualitative study. By better understanding the lived experience of physical therapists and physical therapy students who are trained in self-IASTM may provide insight for facilitating this behavior in others. The HBM emphasizes the importance of one's beliefs, characteristics, believed control, barriers to behavior change and self-efficacy. In this case, it will be of interest to determine physical therapists' and physical therapy students' beliefs regarding the perceived threat of not performing IASTM self-care, barriers to performing IASTM self-care, perceived benefits of performing IASTM self-care, and an individual's self-efficacy to perform IASTM self-care. This connection may help in determining demographics and barriers that may limit the adoption of self-IASTM in physical therapists and physical therapy students, as well as beliefs and cues to action that may encourage physical therapists and physical therapy students to perform IASTM self-care.

Nature of the Study

The lived experiences of physical therapists and physical therapy students who are trained in IASTM self-care were studied qualitatively. This qualitative research involved in-depth semistructured interviews with physical therapists and physical therapy students who are trained in IASTM self-care. These interviews were analyzed to better understand and develop themes (Lincoln & Denzin, 2018). This provided information to better understand the beliefs regarding the perceived threat of not performing IASTM self-care, barriers to performing IASTM self-care, perceived benefits of performing IASTM self-care, and an individual's self-efficacy to perform IASTM self-care that physical therapists and physical therapy students have.

A phenomenological approach, which focuses on the shared experiences of physical therapists and physical therapy students trained in IASTM, was used (Creswell & Poth, 2018). The phenomenological approach involves better understanding the real-world experiences of individuals from their own perspective. (Creswell & Poth, 2018). This approach is often used in the field of nursing and health sciences such as physical therapy (Nieswiadomy, 1993, Oiler 1986). A phenomenologist creates a description of what the common essence is for individuals that experience a specific phenomenon. In this case the phenomenon is that of physical therapists and physical therapy students trained in self-IASTM for treating and preventing postural and overuse dysfunctions and adoption of this health behavior change to prevent and treat postural and overuse dysfunction.

In a phenomenological approach, a systematic interpretation of the interview transcripts will be completed to extract themes that are unique and common with the goal of creating a conceptual link (Creswell & Poth, 2018). This type of approach is most appropriate for this study to best understand the shared experiences of this population. The defining features of phenomenology are that the research is focused on a single idea or concept. This phenomenon is explored with a group who have all experienced it. The group sizes typically range from 3-15 individuals. These groups had subjective experiences related to the phenomenon of being trained in self-IASTM and whether they adopted the technique. The researcher must be able to identify their own personal experiences related to the phenomenon so that they can set them aside, so the focus can remain on the shared experiences of the participants. The data analysis follows a systematic approach from narrower to broader concepts of the description of the essence of the experience.

Individuals were interviewed to better understand what promotes and what decreases the likelihood of a physical therapist adopting the behavior change of utilizing IASTM self-care to care for and prevent overuse injuries and postural dysfunctions. This type of qualitative study is similar to one designed to understand the lived experience of compliance with a home program by patients with knee osteoarthritis (Campbell et al., 2001). The participants were aware that for a successful outcome, they would need to perform the exercises regularly. The individuals who adopted a long-lasting behavioral change reported that the effectiveness of the intervention and how easily they could incorporate it into their day were the main drivers for this behavior change.

To investigate the lived experience of physical therapists trained in IASTM self-care, the use of semistructured and in-depth interviews helped foster the data collection. The participants were physical therapy students and physical therapists that have been trained in IASTM self-care. Codes and categories were applied to common words and phrases in the transcript. Assessment of the codes and categories helped formulate themes. Pre and post-participant motivation were utilized to determine the potential for biases.

Definitions of Key Terms

Instrument Assisted Soft Tissue Mobilization: The use of specially designed tools to mobilize scar tissue and myofascial adhesions. This in turn promotes improved posture and healing through extracellular matrix protein production including collagen (Kim et al., 2017).

Maladaptive Perfectionism: Individuals having elevated standards and utilizing hypercritical self-evaluation (Richardson et al., 2022).

Musculoskeletal Disorders: Injuries to the musculoskeletal system including muscles, bones and connective tissue. These injuries are often the result of postural dysfunction, overuse, repetitive motion and repetitive stress (Motaqi & Ghanjal., 2019).

Physical Therapy: A healthcare profession that specializes in restoring and promoting optimal physical health. Physical therapists work in a variety of practice settings to enhance physical and functional abilities (American Physical Therapy Association, 2016b).

Self-efficacy: The belief in oneself that an individual can perform or successfully learn a skill that will produce a desired outcome (Bandura, 1977).

Assumptions

Assumptions associated with this qualitative study are that the participants understood the questions in the semistructured interview and answered honestly without bias. Interviews were conducted remotely through video conferencing, so it was assumed that participants were able to use a computer.

Scope and Delimitations

The scope of this qualitative study relates to the lived experiences of physical therapists and physical therapy students who are trained in IASTM self-care. This understanding of this group will be a starting point to better understand not only physical therapists, but also how these positive behavior changes can be nurtured in the general population. There is a gap in the literature relevant to the necessary behavior changes to successfully integrate IASTM self-care in a physical therapist's health routine.

Limitations

A limitation of this qualitative study is that the population is specific to physical therapists. Having been trained in preventing and managing musculoskeletal postural dysfunctions, it is likely that physical therapists are more likely to make a positive behavioral change regarding IASTM self-care. Therefore, the findings may be limited to just physical therapists and not transferable to a larger population.

Significance

This qualitative research study explores the lived experiences of physical therapists and physical therapy students trained in IASTM self-care. Physical therapists and physical therapy students are susceptible to physical complications from posture and overuse as well as psychological stressors (Darragh et al., 2009; Tanveer & Shahid, 2017). IASTM self-care is a technique that can improve posture and treat musculoskeletal pathologies (Cheatham et al., 2019).

In addition to being able to care for one's physical body through IASTM self-care there may also be an impact on an individual's mental health (Finch & Bessonnette, 2014). This could be of value to physical therapists and physical therapy students to help with stress, anxiety, depression, and self-efficacy. Physical therapy students tend to be under increased stress and are more susceptible to the negative impacts of stress. Physical therapy students who are maladaptive perfectionists are especially vulnerable (Richardson et al., 2022). Maladaptive Perfectionism entails having elevated standards and being hypercritical with self-evaluation. Having the resources to independently manage one's individual physical health may positively impact stress, anxiety, and self-efficacy.

A physical therapist modeling positive behavioral changes may benefit the patients they work with. It was found that physical therapists and physical therapy students see the benefit in creating behavior change in their patients based on the behaviors that they model for their patients (Black et al., 2012). Since patients tend to adopt the positive behavior changes demonstrated by their physical therapists, a better understanding of how to facilitate this behavior change in physical therapists may also positively influence this behavior change in physical therapy patients.

Summary

The present research is a phenomenological qualitative design using in-depth semi-structured interviews. This design was chosen to better understand the lived experiences of physical therapy students and physical therapists who are trained in IASTM self-care. Physical therapists and physical therapy students are vulnerable to posture and overuse musculoskeletal disorders (Darragh et al., 2009; Tanveer & Shahid, 2017). IASTM self-care is effective at treating and preventing these conditions. Utilizing IASTM self-care may also have a mental health benefit with individuals experiencing improved self-efficacy (Finch, & Bessonnette., 2014). Insight into the behaviors that promote this behavior and inhibit this behavior will be of benefit. Currently there is little research on this subject. Physical therapists are in a unique position to model behaviors that can influence the greater public (Black et al., 2012). For this reason, this research may have strong positive social implications for changing behavior for the greater population.

Chapter 2: Literature Review

Introduction

The purpose of this qualitative study was to examine the lived experience of physical therapists and physical therapy students who are trained in IASTM self-care. IASTM is a technique that utilizes specialized instruments to improve the health and mobility of soft tissue (Kim et al., 2017). When the tissue is massaged with the instrument, there is a positive impact on the extra cellular matrix, including fibroblastic and fibronectin proliferation, which is caused by localized inflammation that helps to reorient collagen fibers and synthesize additional collagen fibers (Davidson et al., 1997). These positive changes help with tissue healing and the promotion of increased ROM. This intervention can be used on individuals who have postural deficits and overuse injuries. Often, this technique is done by a practitioner on a patient; however, this technique can also be used by an individual on themselves through a technique of IASTM self-care.

Physical therapy students are at an increased risk of having postural changes due to limitations in soft tissue mobility (Soliman et al., 2020). Professional physical therapists are also at a risk of postural and overuse injuries (Darragh et al., 2009; Tanveer & Shahid, 2017). Therefore, a better understanding of the lived experiences of physical therapists and physical therapy students who are trained in IASTM self-care to treat and prevent postural soft tissue imbalances and the barriers and facilitators to this self-care technique could help other physical therapists and physical therapy students who currently have or are susceptible to postural impairments. In addition, a better understanding of the lived experiences of physical therapists and physical therapy students who are successful in performing this self-care may provide insight into how to remove barriers and facilitate this behavior change throughout society. The patients that these students and clinicians interact with may also benefit from the positive behaviors that their physical therapist models.

Poor posture has been found to be related to musculoskeletal dysfunctions in elementary students (Gheysvandi et al., 2019), adolescents (Ozdemir et al., 2021), university students (Mustafaoglu et al., 2021), professionals (Ojule et al., 2020), and the senior population (Mahmoud et al., 2019). In addition to the physical dysfunctions, posture has also been found to impact an individual's psychological state, affecting depression (Feldman et al., 2020), self-esteem (Körner et al., 2021), low arousal negative affect, systolic blood pressure, pain, sleepiness, and feelings of power (Hackford et al., 2019).

Soft tissue mobilization with a tool has been shown to be effective in correcting postural faults (Mubashar et al., 2022; Mylonas et al., 2020). Although self-massage has been shown to be beneficial for several conditions, it has not been widely adopted as a standard of care (Atkins & Eichler, 2013). Overwhelmingly, sport and orthopedic physical therapist professionals believe that massage with a soft tissue mobilization tool is beneficial for pain reduction, increased soft tissue mobility, and increased ROM (Perlman et al., 2006). Physical therapy professionals and, to a greater extent, physical therapy students believe that role modeling is a powerful teaching tool to improve patient compliance with positive health behavior changes (Black et al., 2012). There is a gap in the literature regarding how often clinicians use these techniques for themselves. There is also a gap in the literature regarding the barriers to individuals performing these techniques and what facilitates individuals performing these techniques (see Cheatham et al., 2018).

Literature Search Strategy

I searched the following databases accessible through the Walden University Library to locate sources for this literature review: CINAHL Plus, EBSCOHost, ERIC, MEDLINE, Proquest Central, PsycINFO, PubMed, SAGE Premier, and SOCINDEX. The key words used for this search were *instrument assisted soft tissue mobilization, posture, healthy lifestyle (adherence to health practices), health belief model, self-efficacy, locus of control, doctor of physical therapy students, physical therapist, self-massage, personal health beliefs, role modeling, depression, anxiety, stress, lived experiences, neck pain, shoulder pain, health belief model, sitting posture, stretching, neuromuscular exercises,* and *forward head posture.*

The articles included in this literature review contained aspects related to personal health and positive behavioral change in physical therapists and physical therapy students related to soft tissue self-care. The articles were published in peer-reviewed journals. Most of the articles were published in the past 5 years, except for older articles that were seminal works and of great importance to this topic.

Theoretical Foundation

The HBM grounds this study and was developed by Rosenstock (1974). The HBM posited that demographics, beliefs, and barriers influence success in performing a behavior change. The HBM has four main constructs that are perceived susceptibility and perceived severity, which are seen together as threats, and perceived benefits and barriers. Since the theory's inception there have been additional constructs added including self-efficacy and cues to action (Rosenstock et al., 1988).

The HBM has been thoroughly studied over time, and this research has yielded extensions, adaptations, and expanded applications to the fields of political science and public health. Perceived social approval from significant others and perceived behavioral control had a significant impact on public health behavioral change (Bosnjak et al., 2020). This research frames the current study in that social approval and perceived behavioral control may be important for physical therapists and physical therapy students to adapt the positive behavioral change of using a soft tissue mobilization tool on themselves.

The HBM has been applied in previous research on decision making between conservative care and surgery (Peterson et al. 2021). In this qualitative study based on the HBM, an individual's perception of the underlying pathoanatomical dysfunction was a strong influence. Those who chose surgery had a lower level of perceived control over their symptoms and course of care. Limited education and poor prior outcomes with conservative care were barriers to future conservative treatment.

The HBM has been used to promote behavior change at a university (Khodaveisi et al., 2021). It was shown that education on physical activity based on the HBM had a significant impact on an individual's likelihood to adopt these health behavior changes. The variables that were assessed were perceived severity, perceived susceptibility, perceived self-efficacy, perceived benefits, perceived barriers, and cues to action. Two populations were randomly selected from the university staff with similar demographics. The intervention group received education on the benefits of physical activity and the risks of a sedentary lifestyle. It was found that the intervention group showed a significant improvement in self-efficacy and activity level.

Individuals in a college environment are susceptible to lower extremity injuries (Gabriel et al., 2019). There are Exercise-Related Injury Prevention Programs (ERIPP) that are effective at decreasing the risk of these injuries (Hübscher 2010). The challenge is getting these college students to be compliant with the positive behavioral change of the ERIPP (Gabriel et al., 2019). This research determined that the HBM provides a viable paradigm to determine an individual's likelihood of adopting this positive behavioral change. Individuals who had high susceptibility and severity, while understanding the benefits and ability to overcome barriers, were most likely to adopt this positive behavioral change.

Additional research found that individual self-efficacy, subjective norms, perceived benefit of the intervention, and perceived severity of the disease process if they did not perform the preventative health behavior impacted an individual's likelihood to perform the positive prevention health behavior of receiving a COVID-19 vaccine (Shmueli, 2021). If an individual believed there was a high potential for benefit from having the vaccine, they were more likely to adopt that positive behavior. The HBM theory further reinforces this characteristic. Individuals are more likely to complete a behavior change when that change is likely to have the desired outcome (Maiman &

Becker, 1974). The perceived level of disability that is associated with contracting a disease was also an important driver of health behavior change.

Common Postural Impairments for University Students

Kwon and Kim (2015) found that faulty-flexed postures are common in doctoral students who spend a large amount of time sitting, studying on handheld devices, and in classroom settings. Like the results of Kwon and Kim (2015) it was found by Nair et al. (2015) that prolonged seated postures lead to postural impairments. Consistent with the findings from Kwon and Kim (2015), it was found by Cuéllar & Lanman (2017) that the use of technology, such as handheld devices, that university students encounter can contribute to postural impairments. Korner et al. (2021) reported results consistent with the seated findings of Kwon and Kim (2015) and Nair et al. (2021) but demonstrated that the effects of poor posture on university students are also noted in standing postures.

Common Musculoskeletal Dysfunctions for Physical Therapists

Physical therapists undergo a great deal of strain to their musculoskeletal system throughout the day (Holder et al., 1999). The profession involves prolonged postures, repetitive movements, challenging patient transfers, and overuse injuries (Darragh et al., 2009). Physical therapists suffer from postural related low back pain, cervical pain, and wrist and hand dysfunction (Holder et al., 1999).

Physical therapists are trained in how to avoid postural and overuse injuries, yet they still suffer from these dysfunctions. With 91% of physical therapists experiencing work-related injuries, there is clearly a behavioral change that needs to occur to avoid this disability (Darragh et al., 2009). The injuries were in the lumbar spine 62% of the time and the cervical spine, forearm, wrist, and hand 23% of the time (Holder et al., 1999). These overuse injuries and postural deficits can be prevented and treated with IASTM self-care. As an example, to treat rounded shoulders IASTM self-care can be used to lengthen the pectoralis minor. By lengthening this tissue, the individual will be able to hold their body in correct postural alignment.

Posture and Mental Health

An investigation by Kwon and Kim (2015) found that mental health has been linked to posture. Their investigation was performed in a laboratory setting to compare psychological differences between individuals presenting with normal posture and those presenting with a forward-flexed posture. They found that being in a faulty-flexed posture had a detrimental impact on individuals, leading to increased stress and self-deprecating thoughts as well as decreased creativity. Canales et al. (2010) reported results consistent with the findings from Kwon and Kim (2015) in that during depressive episodes, individuals presented with increased thoracic kyphosis, forward head, and pelvic retroversion.

Körner et al. (2021) investigated the psychological impact of a flexed, contracted posture versus a more properly aligned, expansive posture among 120 students from a university in Germany. Most of the participants (74%) were female, and the age range was between 23 and 27 years old. The researchers used a pre-/posttest design to assess the psychological impact of these different postures and results were calculated with a repeated measures ANOVA. The pretest included measures of self-esteem. The participants were randomly assigned to be in either a contracted posture group, an expansive, normally aligned posture group, or a control group. The flexed posture presented with rounded shoulders and forward head, while the expansive group was instructed to stand with their shoulders retracted and chest pushed forward. The participants held the posture for two minutes. The state self-esteem scale was used to measure participants' self-worth and social anxiety. Individuals who posed in correct posture reported higher levels of self-esteem than individuals who posed in the faulty posture.

Prolonged seated, flexed postures are associated with negative emotions (Nair et al., 2015). Nair et al. (2015) reported that individuals with normal upright posture had higher self-esteem, better mood, more arousal, and lower fear when confronted with a stressor. Deaver (1933) found that, like Nair et al., those with poor posture have more negative emotions. Nair et al. found that individuals with slumped posture verbalized more affective process words, sadness words, negative emotion words, and fewer positive emotions words, which demonstrated that a seated upright posture positively impacts speech; reduces self-focus; and, therefore, may make individuals more resilient to stress. In addition, Nair et al. found that autonomic and muscular states are negatively impacted by poor posture and are associated with negative emotional states.

The negative impact of faulty posture on psychological states has been noted not only in static positions, such as sitting, but also during dynamic activities, such as walking (Hackford et al., 2019). Hackford et al. (2019) found that when individuals are in a slumped posture during dynamic tasks, they also experience negative emotional states, including low arousal, negative affect, sleepiness, increased pain, and fewer feelings of power. Participants who were in proper alignment and not in a chronically forward, flexed posture had lower skin temperature, lower galvanic skin response, and significantly decreased systolic blood pressure. Additional research on active postures was performed by Michalak et al. (2015). They found that individuals who walked with a slumped posture, decreased arm sway, and small amplitude vertical motions had more depressive thoughts. The findings from these research articles indicate the impact that poor posture has on psychological and physical states while carrying out functional movement activities of daily living, such as walking.

Posture and Physical Fitness

College-aged students have a high incidence of postural related dysfunction (Ahmed et al., 2021). Ahmed et al. (2021) conducted a cross-sectional study with 119 randomly sampled university students in India who completed three questionnaires: the Nomophobia Questionnaire (NMP-Q), Neck Disability Index (NDI), and the Cornell Hand Discomfort Questionnaire Index (CHDQ). The NMP-Q assesses an individual's fear of being detached from one's phone (Jahrami et al., 2023). Ahmed et al. found that 46.9% of college students have postural-related neck pain, and 42.5% of these individuals reported having severe neck disability. This dysfunction in college-age students can translate into long-term disability. Much of the postural-related dysfunction was connected to technology and smart phone use. Close to 80% of this age group frequently use their smart phones, and this reliance on technology causes forward shoulders and rounded head posture (Shah & Sheth, 2018). With increased technology use, there is an increase in the incidence of postural dysfunction.

Joshi et al. (2019) conducted a systematic review to determine if there is a link between faulty thoracic spine posture and cervical spine mobility deficits and pain. They searched for literature in the PubMed, Web of Science, and CINAHL databases and collected only studies published from 1990 to 2017 that involved human participants. They screened 2,077 articles, and from this number, they considered 20 of the research articles for review. Joshi et al. quantitatively synthesized the studies, considering design, objective measures, study population, and outcomes. Their review revealed strong correlations between the thoracic spine function and cervical spine health. They also established a positive correlation between a larger upper thoracic postural angle and neck pain. Another finding was a strong relationship between decreased thoracic mobility and increased neck dysfunction. In addition, individuals with increased thoracic kyphosis were found to have increased forward head posture, and these postural changes are often associated with prolonged computer work that is experienced by college students performing long hours studying in front of a computer.

When work and study involved maintaining forward flexed postures, there was a higher incidence of postural dysfunction (Kasaw et al., 2020). In a cross-sectional study conducted for five months, these researchers focused on 307 bankers whose work duties involve extended hours sitting in a flexed posture in front of a computer. Data was collected from participants through questionnaires that covered demographic information, ergonomics, job satisfaction, and neck disability. Most of the participants were male, single, and had a mean age of 29 +/- 5 years. Most participants were not physically active. The participants' posture at work was found to be faulty in 78.5% of the participants. The participants reported tending to sit in the same posture throughout the day, with 86.6% of them not taking breaks during the workday. Of the 307 participants, 201 reported some work-related musculoskeletal dysfunction in the past year. The highest prevalence was low back and cervical disorders at 40% and 35%, respectively. The prevalence of these disorders decreased in individuals with good posture. Multivariable logistical regression analysis indicated that poor posture, older age, lack of physical exercise, and increased stress were all associated with a higher incidence of developing musculoskeletal impairments.

Anna et al. (2020) investigated the link between quality of life and posture among first-year university students. Data were collected through a theoretical analysis and synthesis of data from methodological and scientific literature combined with anthropometric testing, video recording, and analysis of bio geometric profiles of students' postures. Participants performed physical and mental fitness exercises biweekly for 9 months. Physical fitness levels and posture were assessed before and after the study was completed, indicating that students who had postural disorders had decreased physical fitness. Participants were especially susceptible to postural dysfunction secondary to their prolonged time spent studying in flexed, sitting postures, and these individuals were also less physically active. Those participants who had improved posture, reported improved quality of life.

Goncharova et al. (2019) studied 94 college-aged women between the ages of 22 and 24 years old attending the National University of Physical Education and Sport of Ukraine to determine their risk for postural dysfunction. Their study included analysis of methodological and scientific literature, pedagogical observation, sociological methods, and pedagogical experimentation. The participants had postural deviations in the frontal plane, and of those 94 participants, 33 participated in the pedagogical experimentation, 17 were in the experimentation control group, and 16 were in the intervention group. Their results revealed that rounded-shoulder posture caused by tight anterior musculature, such as the pectoralis minor, was common in 21.28% of the women tested. Lack of physical fitness and rounded-shoulder posture were correlated. Interventions were completed to improve the participants' muscle balance and increase their activity. The targeted exercises were stretching tight tissue and strengthening of core musculature and identified weak muscles. These interventions were performed for 60 minutes three times a week. Significant postural improvements and fitness metrics occurred after from the interventions to restore normal muscle balance and posture.

Most physical therapy students will become health care workers, and the habits they develop in school can impact how they perform in the clinic (Potthoff et al., 2019). Health care workers are particularly susceptible to musculoskeletal postural disorders (Letafatkar et al., 2020). Forward head posture and rounded shoulders are often the cause of these dysfunctions. The researchers randomly divided a sample of 48 female dentists between the ages of 40 and 45 years old who had a chief complaint of chronic neck pain into two equal study groups of 24 participants each: a corrective exercise group and a control group that received no corrective exercises. The corrective exercise group received therapeutic exercises to improve cervical, thoracic, and scapula muscle strength; coordination; proprioception; and endurance. The beneficial exercises were designed to restore normal muscle length anteriorly and strengthen the opposing posterior musculature. The corrective exercise interventions in their study lasted for 8 weeks. The postural objective measurements that were collected before and after the intervention were photogrammetry of the forward head angle and protracted scapula angle, which are measurements of forward head posture and rounded shoulders, respectively. The self-reported questionnaires that participants completed before and after the study were the Visual Analog Scale (VAS) for pain, NDI, and the General Health Questionnaire. Following the conclusion of the study, the corrective exercise group had significant positive improvements in posture, health status, pain, and disability. The corrective exercise group improved in all categories. There were no changes in the control group.

Instrument Assisted Soft Tissue Mobilization

A technique that uses handheld tools to provide soft tissue mobilization is called IASTM (Seffrin et al., 2019). The techniques using IASTM are consistent with massage in that the direction, pressure, and technique can disperse forces to superficial and deep structures (Hammer, 2008; Davidson et al., 1997). The tools can be made from a variety of materials, including wood, plastic, stainless steel, or stone (Hammer, 2008). IASTM has been shown to hasten the healing process secondary to the fibroblastic proliferation that occurs secondary to the directional force applied through the soft tissue (Imai et al., 2015). Tissue collagen synthesis and alignment caused by IASTM help to provide a beneficial outcome of improved tissue length that can glide freely relative to surrounding structures (Loghmani & Warden, 2009). These techniques have been shown to improve pain, strength, patient function, and ROM.

Cheatham (2019) discusses clinical practice guidelines for IASTM based on current literature. Some of the contraindications for the procedure include cancer, unstable fractures, acute injury or infection and use of blood thinners (Stow, 2011) The recommendations from Cheatham are to treat the tools as a non-critical item for sterilization. The centers for disease control recommend cleaning non-critical items with an intermediate disinfectant after each use (Veiga-Malta, 2016). Examples of intermediate disinfectants are alcohol based phenolics, water-based phenolics, iodophors, sodium hypochlorites, alcohol-based quartenary ammonium compounds and chloring compounds. The tool should be washed with soap and clean water before treatment (Cheatham, 2019).

The intervention itself is to provide longitudinal press strokes parallel to the musculotendinous fibers (Baker et al., 2013). The tool provides a mechanical advantage, allowing the clinician to perform deep myofascial techniques while protecting their body from overuse (Lambert et al., 2017). This systematic review demonstrated that these techniques work particularly well in lengthening fibrotic tissue due to postural dysfunction and interrupting pain receptors.

The improvements in ROM secondary to the use of IASTM have been shown to occur in multiple areas of the body. The shoulder complex has shown improvements in shoulder adduction and internal rotation following the application of IASTM (Laudner et al., 2014). A quantitative, blinded, randomized design was used to place participants in either a control or intervention group. The intervention group received an application of IASTM to the shoulder. Following that intervention, both the control and intervention groups were reassessed. A significant group by time interaction was seen for shoulder horizontal adduction and internal rotation ROM with the IASTM treated group having significant improvements in ROM.

Shoulder postural dysfunction was closely related to shortened soft tissue versus limited joint mobility (Bailey et al., 2015). An intervention of IASTM was shown to lengthen the shortened soft tissue. This increased short tissue length led to improved shoulder internal rotation, horizontal adduction, and total arc of motion. These improvements in ROM lead to improved function and decreased postural dysfunction.

Hip range of motion was also associated with postural deficits (Markovic, 2015). Foam rolling and IASTM were compared to see which technique provided the greatest improvement in hip range of motion. The group receiving IASTM had significant improvements in hip and knee ROM when compared to the foam rolling group. The increased ROM was maintained longer than in the foam rolling group.

The lower leg is also a common area of shortened muscle length, leading to postural dysfunction. Ankle dorsiflexion ROM has been shown to improve by 10.7% - 10.8% with 5 min of IASTM over the gastrocnemius, soleus, posterior tibialis, and Achilles tendon. The benefits were seen in both improved ankle dorsiflexion ROM and decreased stiffness of the medial gastrocnemius and soleus. This increased ROM and decreased stiffness improve lower extremity function and decrease postural dysfunctions.

Study Methodology in the Literature

The above literature review demonstrates that there is a great deal of quantitative research that has been completed to date. The research involves investigations of university students and the common postural dysfunctions they have. These quantitative, mainly cross-sectional research designs demonstrate that there is a strong correlation between the tasks of graduate students and the development of faulty posture. This faulty posture can lead to impairments, pain, and decreased quality of life (Lambert et al., 2017). The literature also demonstrates, through quantitative blinded, randomized designs, that IASTM is an effective technique to improve posture, ROM, and prevent the onset of movement disorders.

The current quantitative literature demonstrates the efficacy of IASTM self-care in treating musculoskeletal dysfunctions common to physical therapists and physical therapy students. The quantitative literature demonstrates that behavior change in health professionals occurs with user centered resources, support, and encouragement (Virtanen et al., 2021). What is missing from the current literature is an exploration of the lived experiences of physical therapists and physical therapy students who are trained in IASTM self-care. More needs to be done to understand the factors that promote this behavior in physical therapists and physical therapy students. This qualitative information will help inform the future direction of encouraging healthy behavioral changes in university students and professionals to perform IASTM self-care. By better understanding the barriers and facilitators of this behavior change policies can be enacted to help support these changes and eliminate and reduce the barriers. This behavioral change will help the individual clinicians and students and should help society by influencing the behaviors of these students' future patients.

Summary

IASTM is an effective technique to improve postural alignment. This is accomplished by improving the mobility of shortened muscles in the anterior thorax, such as the pectoralis minor. A common postural dysfunction in physical therapists and physical therapy students is rounded shoulders with a forward head. This posture can lead to chronic disability if not treated. IASTM self-care is an intervention that is effective at balancing muscle length, improving posture, and preventing future impairments. Although a great deal of quantitative research has been done to better understand postural dysfunction in physical therapists and university students, there is limited qualitative research completed to better understand the lived experience of physical therapists and physical therapy students who successfully perform IASTM self-care. The results of this qualitative research will help in the development of techniques to best support positive behavioral change related to musculoskeletal overuse injuries and posture care in this population.

Chapter 3: Research Method

Introduction

The purpose of this study was to explore the lived experiences of physical therapists and physical therapy students who are trained in IASTM self-care. This chapter will include a description of the phenomenological research design that was used and the justification for this design. The participants and the rationale behind their selection process will be explained. The design of the semi-structured interviews will be provided. The methods used to interpret the results will be explained. Finally, any threats to ethics and validity will be explored.

Physical therapists and physical therapy students are vulnerable to developing postural and overuse musculoskeletal dysfunctions. It is a paradox that students and professionals who are trained in preventing postural and overuse injuries are at a high risk of developing these dysfunctions. Self-care by IASTM is an intervention that can prevent and treat these dysfunctions. A better understanding through interviews of what will improve and decrease the likelihood that the individuals perform IASTM self-care will be valuable.

Research Design and Rationale

Research Design

The research question for this qualitative study is: What are the lived experiences of physical therapists and physical therapy students who are trained in the performance of IASTM self-care to prevent and treat musculoskeletal dysfunctions? The participants were physical therapy students and physical therapists trained in IASTM self-care. The phenomenon of interest was physical therapists and physical therapy students who are trained in self-IASTM to prevent and treat postural and overuse dysfunctions and their adoption of this health behavior (Creswell & Poth, 2018).

This phenomenological qualitative study included in-depth semi-structured interviews and thematic analysis. This type of approach was appropriate for this study to understand the shared experiences of this population. Phenomenology in this case focused on the subjective experiences related to the phenomenon of being trained in self-IASTM and whether they adopt the technique. These participant' real-world experiences were investigated from their perspective. The transcripts were interpreted in a systematic fashion to create a conceptual link of extracted themes (Creswell & Poth, 2018).

It was expected that the shared experiences may include barriers to performing IASTM self-care. Some of these barriers may be a lack of time and not prioritizing this behavior. Some of the motivators may be a knowledge of the benefits and the support of a loved one. These expected results are biases that the researcher acknowledges. To ensure unbiased results, the previous expectations were set aside during the interviews and analysis. The phenomenon to be investigated was those of real-life events (Patton, 2015). The real-life events of adoption and non-adoption with performing IASTM self-care were explored. The use of semi-structured interviews was effective for this qualitative study since there was a shared experience surrounding an individual using IASTM as part of a home program. In my study, I collected data on how they perceived self-IASTM, personal self-efficacy, empowerment, and behavioral change.

Role of the Researcher

My role as the researcher was to recruit participants and perform the in-depth semi-structured interviews. Following the interviews, I completed a thematic analysis and interpreted the findings. Some of the student physical therapists were students who have been in classes that I teach. Students were only eligible after they had completed any courses that I taught and no longer had any perceived power over them. A personal bias is that I have designed an IASTM tool. To overcome this, I recognized my bias and checked in to reflect on any way it may have impacted my interpretation of the data. In the interview process, the environment was set up to promote honest, open sharing and a receptiveness to diverging viewpoints. Four participants were approached to review the results and inform the researcher of anything that was misinterpreted or needed to be revised. All participants will be offered the completed study once approved.

Methodology

Participant Selection Logic

A unique sample strategy was used to reflect the phenomenon of interest. In this case, the sample was physical therapists and physical therapy students trained in IASTM self-care. This sample was chosen since they are a population that is susceptible to musculoskeletal dysfunction and their actions can promote positive behavioral change in their patients. This specific population was trained in IASTM self-care, which is effective in preventing and treating postural and overuse musculoskeletal dysfunctions. The IASTM self-care training was a standardized video instruction in contraindications, techniques, and application to the various structures throughout the musculoskeletal system. The training techniques included prevention and treatment for common postural and overuse musculoskeletal dysfunctions.

When performing qualitative research, saturation occurs when no additional information is added with additional participants. For qualitative research for a phenomenon such as lived experience, it is recommended that at leastsix participants be included (Morse, 1994). Creswell and Poth (2018) suggest that a range of 5-25 should be sufficient. For this study, data collection saturation was achieved after interviewing 13 participants.

The purposeful sampling provided meaningful information on the population of interest, which was physical therapists and physical therapy students who were trained in IASTM self-care. It was required that at least one month transpired since their training. Individuals with and without overuse and postural musculoskeletal dysfunction were included.

The selection for student participants came from the University of St. Augustine for Health Sciences Doctor of Physical Therapy San Marcos Residential program. For this reason, I also completed IRB approval at the University of St. Augustine for Health Sciences to complete this research. All student participants had at least completed their third term of education in the Doctor of Physical Therapy program. On average, there were 60 students enrolled in each cohort. The age range of students was 23 to 27. These students represented diversity in gender and ethnicity. Of the current enrolled students, 54% self-identified as nonwhite, and 72% were women.

The selection for practicing physical therapists was physical therapists who work in clinical care, performing the role of a physical therapist. This population practices in a wide range of physical therapy settings. These physical therapists represent diversity in gender and ethnicity. The exclusion criteria were individuals who were not trained in IASTM self-care.

Instrumentation

The collection instrument for this qualitative study was an interview guide/protocol of open-ended questions (see Appendix C). The open-ended questions in the interview guide were related to frequency, duration of use of IASTM self-care, perceived threat of not performing IASTM self-care, barriers to performing IASTM self-care, perceived benefits of performing IASTM self-care, and an individual's self-efficacy to perform IASTM self-care. Topics related to the psychosocial components were important to understanding their lived experience. The interview questions were based on the HBM. These questions were similar to interview questions from a research study regarding the lived experience of older adults with myofascial trigger points in the neck and back who were instructed in a self-myofascial release program (Lee et al., 2017) and a study of patients with cancer and their compliance with an exercise program (Hashem et al., 2020).

Procedures for Recruitment, Participation, and Data Collection

Recruitment

Physical therapists and student physical therapists who are trained in IASTM self-care were asked to volunteer for the study. They were sent an invitation by email. See

Appendix A. Those who agreed were explained the risks of the study and provided with a consent form. See Appendix B.

Participation and Data collection

The interviews were conducted in a place where the individual felt safe (Rubin & Rubin, 2012). The interviews were conducted via video call at the participant's house. Research indicates that individuals who are interviewed via synchronous video call are just as likely to answer personal questions honestly as they would if they were interviewed face to face (Weller, 2017). It has also been suggested that the informal nature of a video call and remoteness from the interviewer may further help to put the interviewee at ease. The interviews were performed in a semi-structured style. It has been found that semi-structured interviews help to ensure that the same topics are covered in all interviews and help to keep interviews sufficiently open and not limit data (Adeoye-Olatunde & Olenik, 2021). Interviews were recorded so that the information could be reviewed repeatedly and examined for patterns and themes (Patton, 2015). The researcher took notes on the emotions shared and individual's body language. The interviews were transcribed verbatim. All data was stored in a secure, password-protected cloud-based storage with encryption. Data is kept in a locked home. All data will be destroyed after 5 years. Direct participant identifiers were removed from the data.

Debriefing Procedures

At the end of the interview, participants were thanked. It was reinforced that the findings from this research will be used to help others. Once the analysis was completed, the results were shared with the participants to provide a review of accuracy. Once the study was completed, the findings were shared with the participants.

Data Analysis Plan

It was important that the data was analyzed as it was collected to help improve the validity and reliability of the information and hermeneutically adapt the approach as needed. The overview of the process was to become very familiar with the transcripts by reading and rereading them. The next step was to determine recurring ideas and patterns. These recurring ideas were provided with codes attached to the assigned data segments (Boeije, 2002; Braun & Clarke, 2006). Coding was captured using the highlight tool in WORD to identify words, phrases, or sentences that hold meaning. The codes were grouped into broader categories. These broader categories were distilled into themes that were meaningful and reflected the data accurately (Daly et al., 1997). The names of these themes were considered, chosen, and linked back to an understanding of what was shared.

Issues of Trustworthiness

I self-reflected on my beliefs and motivations that I brought to this study. Any conflict of interest or biases needed to be addressed to ensure it did not skew the study. It was important that the study was carried out with integrity and an ethical moral compass. If not, then the trustworthiness of the findings would be in question. To improve examiner trustworthiness, the discussion and documentation of researcher biases was documented and explored. The physical therapist and student physical therapist motivation were also assessed before the study began to assess if they were biased to try and make results that agree with the researcher's world view. Following the development of themes, I contacted four of the participants to see if they agreed with the themes I developed.

Credibility

Credibility is predicated on whether the findings are accurate (Cutcliffe & McKenna, 1999). The actual words of the participants were used to validate the themes that were generated and to avoid biases of the emerging theory (Glaser & Strauss, 1967). Using repeated comparisons and contrasts also helped make sure the themes were representative (Hutchinson et al., 1993). The interview transcripts were repeatedly reviewed to ensure they reflected the intent of the sample. Member checking was performed with study participants verifying that the transcripts accurately reflected the described lived experiences.

Transferability

The transferability of this study relates to how the results from this study can be related to other populations, settings, and contexts (Slevin & Sines, 1999). It is hoped that this can be transferred to other schools of PT, and perhaps even into other populations of health professionals beyond physical therapists. For example, an Australian study of self-care in nurses called for rethinking nursing education to promote self-care and resilience (Mills et al., 2021). The understanding that was found regarding what impacted the positive health behavior change of self-IASTM in physical therapists and physical therapy students can potentially be transferred to understanding health behavior change in other populations and settings.

Dependability

The dependability of this study relates to how consistent the findings would be if a separate researcher were to repeat this study under similar conditions (Anney, 2014). The conditions of this study were clearly defined with the method of delivering the semi-structured interviews, consistent use of a script, and the use of the constant comparative model. An audit trail was used to detail the study process chronologically. This detail of the sequential steps of data collection, thematic analysis, and interpretation will help with the consistent reproduction of this study (Wolf, 2003).

Triangulation was used to help with dependability. Triangulation is presented in Chapter 5 and is the use of multiple data sources and multiple perspectives in confirming the consistency of data (Jonsen & Jehn, 2009). In this research, multiple physical therapists and physical therapy students were interviewed regarding their experience with self-IASTM. Once themes were developed, then four of the participants reviewed those themes to ensure they are correct.

Confirmability

Several techniques were used to ensure high levels of confirmability, which is an indication that the results of the study are not based on the researcher's bias but are trustworthy objective measurements (Cutcliffe & McKenna, 2004). By having high levels of confirmability, there is evidence that the researcher was neutral in interpretation and therefore other researchers should be able to replicate this study. Participants were integral in reviewing the interpretation of the data that was conducted by the interviewer to ensure no bias. Reflexivity journaling was completed by the researcher to allow for thoughts, biases, and feelings to be noted and not allowed to influence the findings.

Ethical Procedures

The participants were provided with a summary of the research study in their invitation. An informed consent form was provided. In this consent form, it was stated that participation was voluntary. Only after an individual agreed to consent to this study were they scheduled for their semi-structured interview. The data that was collected from an individual did not contain their name. A number was used instead of a name to maintain the anonymity of participants. Data was saved to a flash drive that was encrypted. The flash drive was stored in a secure manner. It will be kept for 5 years and then will be destroyed. The data could not be traced back to specific participants.

Summary

This qualitative study provides a better understanding of the lived experiences of physical therapists and physical therapy students who were trained in IASTM self-care. The phenomenon of interest was physical therapists and physical therapy students who were trained in IASTM to prevent and treat postural and overuse dysfunctions and their adoption of this health behavior. The semi-structured interviews and the phenomenological qualitative approach provided insight into the shared experiences of this real-life event. The open-ended questions allowed the participants to share their experiences related to behavioral change and self-efficacy.

The sample was physical therapists and physical therapy students. This selection was helpful to potentially create societal change related to IASTM self-care. Health care workers to care for themselves are ideal vehicles of change since patients tend to model the actions of their health providers. The sampling criteria utilized physical therapists and physical therapy students who were trained in IASTM self-care. Due to the unique sampling the results can only be applied to physical therapists and physical therapy students that have been trained in IASTM self-care.

Following the semi-structured interviews a thematic analysis was developed based on the transcripts. The sentences and words were used to see what themes emerged. Participant and examiner motivation were assessed before and after the semi-structured interviews to understand any potential biases or issues with trustworthiness.

Chapter 4: Results

Introduction

The purpose of this qualitative study was to better understand the lived experiences of physical therapists and physical therapy students who were trained in the performance of IASTM self-care. Adopting this positive behavioral change of performing IASTM self-care has been shown to prevent and treat postural and overuse dysfunctions (Finch & Bessonnette, 2014; Kerautret et al., 2020). These are dysfunctions that physical therapists and physical therapy students are susceptible to (Darragh et al., 2009). Although physical therapists and physical therapy students are trained in IASTM self-care to prevent and treat postural and overuse dysfunctions there is limited to no research on the lived experiences of this population regarding their use of IASTM self-care. The research question for this study was:

RQ 1: What are the lived experiences of physical therapists and physical therapy students who are trained in the performance of IASTM self-care to prevent and treat musculoskeletal dysfunctions?

The HBM was used to design the research questions and interpret the results of this study. The constructs of the HBM are that an individual's ability to make a positive health behavior change are influenced by perceived susceptibility, perceived benefits, perceived barriers, cues to action and self-efficacy. The following chapter will detail the setting, demographics of the participants, how the data was collected, and how the data was analyzed. Evidence of trustworthiness will be explained. Finally, the results will be presented along with a discussion and summary.

Setting

The research study was conducted in the United States of America. Physical therapists were recruited from Southern California. The researcher has worked in a variety of clinical and academic settings over the course of his career and has maintained communication with those colleagues. The physical therapy students were recruited from a physical therapy school in Southern California. The program director of that school was emailed a study invitation, which was then forwarded to the residential physical therapy students who are in their fourth semester or higher and are no longer students of the researcher. Physical therapists and physical therapy students who were interested in participating were emailed information that explained the risks of the study. They were also provided with a consent form

The interviews were completed virtually using a Zoom video meeting, with only the audio being recorded. The researcher conducted the interviews from his home office in Southern California. Participants completed the interview in a private place in their home, free of distractions, where others could not hear or see them. This allowed the participants to be comfortable sharing information honestly and openly with decreased likelihood of distractions. The interviewer had his video on, and the interviewees were instructed that they could choose to have their video turned off if they wished. It should be noted that all participants chose to leave their video on. The researcher took notes on the participants' posture and facial expression reactions when it was relevant to the discussion. Notes were also taken on the participants' tone to be reviewed later with the audio files. The audio and transcript of the interview were recorded and saved to a password-protected cloud-based storage with encryption. Any video that was recorded was immediately destroyed, and only the audio was saved. All data will be destroyed after 5 years.

Demographics

The participants of the study included physical therapists and physical therapy students. There were eight physical therapists who participated and five physical therapy students who participated for a total of 13 participants. The age range of the physical therapists was 26 to 52 and the age range of the physical therapy students was 24 to 27. Table 1 and 2 provides the participant demographics.

Table 1

Physical Therapist Demographics

Participant pseudonym	Age	Gender	Years of Clinical Practice
Orion	26	M	3
Rachel	49	F	20
Andy	38	M	12
Emily	40	F	16
Anthony	35	M	7
Ophelia	52	F	30
Leon	37	M	12
Amelia	46	F	23

Table 2

Physical Therapy Student Demographics

Participant pseudonym	Age	Gender	Semester in Physical Therapy School
Amy	25	F	4
Yasir	24	M	5
Victor	27	M	7
Ollie	24	M	4
Isabel	26	F	6

Data Collection

The participants of the study included physical therapists and physical therapy students. The qualitative interviews were conducted individually with eight physical therapists and five physical therapy students. The average age of the physical therapists was 41, with an age range of 26 to 52, and the average age of physical therapy students was 25, with an age range of 24 to 27 years. Convenience sampling was utilized, recruiting participants in the geographical region of Southern California.

The electronic consent form was emailed to participants to review. Following review of the consent form, individuals who consented to participate in the study would reply to the email with the words “I consent”. Individuals who consented were provided with possible times for the interview and replied with what schedule worked best, and the interviews were scheduled. Each interview took between 30 – 60 minutes to complete. During the interview, the researcher took notes. Immediately following the interview, the researcher replayed the audio from the interview and highlighted important words, creating coded units.

Data Analysis

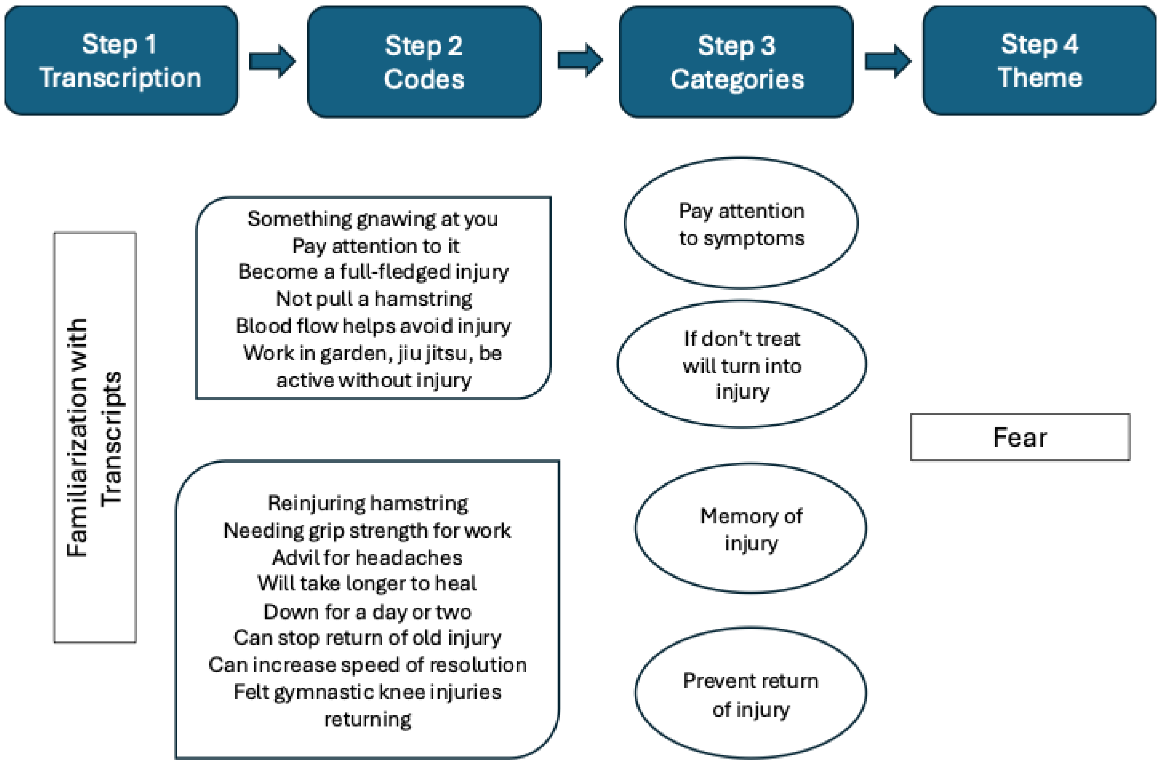
The data analysis was a multi-part process, including engaging with the transcripts from the interviews, defining sections of text that were meaningful, creating labels for these sections of text that were the initial codes, grouping the codes into categories, and then organizing the recurring concepts into themes. The final step is an iterative process that includes reviewing the themes and how they are reflective of the initial codes and categories. At this point the codes and categories were modified as needed based on what was revealed through the thematic analysis.

The process of developing the themes and concepts was an inductive process, with the information from the transcripts being the source and initial data driving the process. The researcher began the inductive process with the first interaction with the content. As the participants answered questions, the researcher took notes. Immediately following the interview, the researcher began reading and re-reading the transcripts, looking for text that was meaningful. These meaningful sections of text were then assigned codes. The codes were organized into categories based on the shared meaning.

Based on the organization of the codes into categories, there were patterns that emerged and were classified into the themes. These themes were then examined under the research question of RQ1: *What are the lived experiences of physical therapists and physical therapy students who are trained in the performance of IASTM self-care?* Some of the categories and codes were then modified based on the themes that were developed. Figure 1 provides a schematic of the thematic analysis process that generated the theme of fear. This process is further explained in the following paragraphs.

Figure 1

Schematic of the Thematic Data Analysis Process - Fear



Step 1: Transcription

The initial phase of the thematic analysis was the transcription and familiarization with the transcripts. The transcription was created with the closed captioning software embedded in the Zoom call. This text was saved as a Word file to the researcher's computer. The transcripts were organized by questions and responses. All extraneous words were removed. Each transcript was then emailed to the corresponding participant to receive feedback on the content. If there were any areas that the participant felt needed to be clarified, this was conveyed in a message back to the researcher. After reviewing the transcripts, one out of the thirteen participants added additional information to help clarify an ambiguous part of the transcript. All other transcripts were reviewed by the participants and accepted.

Step 2: Coding

The researcher read the transcript several times to become familiar with the content. The highlight feature in Word was used to highlight words or phrases that may be of interest. Any words that were not highlighted were then removed from the transcript. This helped to see the words and phrases that were most relevant to better understanding the participants' lived experience. Words and phrases that were prominent in the transcripts were *make it part of routine, having it on a calendar helped with cueing, reminder from colleague, link it to an activity that you are already doing, IASTM self-care helped to decrease pain, improved performance, decrease delayed onset muscle soreness, able to exercise with improved symmetry, training for a marathon, if I do not treat it will turn in to an injury, afraid that an old injury may return, when feel something nagging pay attention to it and treat it, easy to do, forgot tool at home, video resources provided motivation and reminders, have to plan ahead to have tool and lotion ready,* and *feels good to be able to care for self.*

Step 3: Generation of Categories

The highlighted codes were then repeatedly reviewed to find categories. Similar codes were clustered together and organized using the cut-and-paste feature in Word. The groups of similar concepts and phrases were then compared to the other groups to see if there were overlapping categories to be combined or unique categories that may have been missed. The categories that emerged following the organization of the codes were *improved function motivated, pay attention to symptoms, prevent return of old injury, prevent new injury, improve functional mobility, schedule, reminders from outside sources, reminders from friends and colleagues, video resources, needs to be part of routine, logistics, efficacy, integrate with other therapeutic interventions, psychological self-love, physical therapy students are not as confident as physical therapists in performing IASTM self-care, link IASTM self-care to symptoms* and *link IASTM self-care to a goal.*

Step 4: Thematic Analysis

After the generation of categories, the final step was to analyze this qualitative data to identify recurring themes and patterns. The four themes that emerged were (1) motivation, (2) fear, (3) self-efficacy, and (4) cues to action. These themes were relevant in answering the research question in the context of the HBM. After further analysis and review of the generated themes related to the transcripts, there were no discrepant cases that veered from these four main themes.

Evidence of Trustworthiness

The purpose of this qualitative study was to understand the lived experiences of physical therapists and physical therapy students trained in IASTM self-care. Multiple measures were in place to ensure the trustworthiness of the research process and outcomes. The interviews were planned and implemented in a way to provide a comfortable experience for the participants that builds trust, nurtures openness to the sharing of all ideas and differing viewpoints, and encourages a dialogue and deep understanding of the participants' lived experiences related to IASTM self-care. The goal of this study was to have a process that produces trusted data and trusted outcomes. The four components of trustworthiness that were upheld were credibility, transferability, dependability, and confirmability. The implementation and any adjustments to these strategies will be described below.

Credibility

To ensure credibility, the participants' actual words were used to generate and validate the themes. Following the interviews, the transcripts were sent to each of the participants to confirm they were correct and accurately represented the participants' lived experiences. If the participants noted any errors or omissions, these were corrected and the transcripts updated. In this case, there was only one participant who had a correction. It was related to their first exposure to IASTM self-care coming prior to physical therapy school when they were working as an aid in a physical therapy clinic.

Transferability

The results from this study may be transferred to other physical therapists and other physical therapy schools. One of the limitations to transferability is that the geographic location of all participants was local to Southern California. This may limit transferability to other geographical locations. The information from this research may also be appropriately transferred to other disciplines that may have been trained in IASTM self-care, such as doctors of osteopathy, acupuncturists, athletic trainers, chiropractors, and traditional East Asian medicine practitioners.

Dependability

To improve dependability, all the conditions for this study were clearly defined. The design of the study, recruitment of participants, method of delivering the semi-structured interviews, use of a consistent script, use of the constant comparative method, and process of the thematic analysis were all detailed to improve accurate reproduction of this study. Triangulation was also used to improve dependability. Multiple physical therapy students and physical therapists were interviewed for this research. This allowed for multiple perspectives and data sources to help confirm the consistency of the data. After the themes were generated, four of the participants reviewed the themes to ensure their accuracy.

Confirmability

To remove the researcher's biases from influencing data transcription and interpretation, all the participants reviewed their transcripts, and four of the participants reviewed the themes that were generated. The researcher practiced reflexive journaling once a week to help in discovering any thoughts and biases the researcher may have. During these journaling sessions, the researcher noted that he believes strongly in the benefits of IASTM self-care for treatment and prevention of postural and overuse syndromes. The researcher noted that he felt a lack of time, motivation, and the logistics of performing IASTM self-care may limit this positive behavioral change from occurring. By revealing these biases, the researcher stayed vigilant not to let them influence the findings.

Results

The purpose of this qualitative study was to investigate and increase awareness of the lived experiences of physical therapists and physical therapy students trained in IASTM self-care. There were four themes related to the lived experiences of physical therapists and physical therapy students trained in IASTM self-care. The four themes were cues to action, fear, motivation, and self-efficacy. The phenomenon explored for this study was to address the following research question.

RQ 1: What are the lived experiences of physical therapists and physical therapy students who are trained in the performance of IASTM self-care?

A further explanation of the four themes and how they are related to the research question will follow.

Theme 1: Cues to Action

Cues to action are a construct of the HBM (Janz & Becker, 1984). The belief is that these cues to action are a driver of positive health behavior change. The cues to action can be internal or external. Internal cues are triggers that come from body parts, internal sensations, or perceptions. External cues are prompts that come from outside of the body, such as a reminder on a calendar or the social influence of a colleague or family member. Based on the findings from this qualitative analysis, it appears that the cues to action to adopt the positive health behavior change of performing IASTM self-care are broken up into these internal and external cues. The internal cues were coming from the individual paying attention to the signs and symptoms of areas that needed treatment. External cues were things like video resources and reminders from colleagues to perform

IASTM self-care. Another external cue that was very common in this research was habit stacking (Clear, 2020). This is where something that is already being done as part of a routine is used to prompt the positive health behavior change. In the following paragraphs, the internal and external cues to action that influenced the positive health behavior change of performing IASTM self-care will be further explored.

An internal cue that most of the respondents reported was sensations related to their body. If they felt pain or discomfort in the body, that would be a cue to action for them to address it and perform IASTM self-care. Isabel said, “If something is gnawing at you and it hurts, you pay attention to it.” Another example of a symptom that prompted the performance of IASTM self-care was cervicogenic headaches. Ophelia found that it was beneficial for several conditions, including her headaches. When she felt the headache coming on, she would perform IASTM self-care. Ophelia said, “I use it for the base of my head for headaches. I would use Advil way too frequently. I would get headaches all the time. And then starting to do the myofascial release for my neck and my head I haven’t used Advil in months.”

External cues that were helpful for participants were video resources. These helped to provide ideas for how to be most effective with IASTM self-care and were good stimuli to remind the individual to perform the intervention. Yasir said, “I have an old shoulder injury from playing baseball. To treat it there are video resources that I use to get IASTM self-care techniques from. This gives me ideas and prompts me to treat myself.” Ollie wished there were more resources for IASTM self-care. Ollie, a physical therapy student, said, “Having something like videos that show how to do IASTM on yourself would be helpful. Most instructional videos are how to perform the technique on other people."

Schedules were a great external cue to remind the physical therapists and physical therapy students to perform IASTM self-care. Isabel said, "Add ten minutes to your day. Having a routine is really important. Make it become a habit. Schedule it for night or morning." Anthony also felt that making it a habit is key to successful behavior change, "Barriers for myself, are just integrating it into my routine. I need to make it more of a habit." A common theme among the participants was that habit stacking helped them in being consistent with performing IASTM self-care. Rachel said, "I do it before every run. This makes it so I do not forget to do it." Ophelia said, "it definitely is amazing. It's like, okay, finally seeing improvements but it literally wasn't until I started doing that dynamic movements with the scraping that I started seeing bigger gains." Ollie also found that combining IASTM self-care with other therapeutic modalities helped him to remember and also increased the therapeutic effect, "I think that this is one of the modalities that I find to be most helpful. I don't use it in a vacuum. It is not going to solve anything on its own but combine it with mobility movement such as stretching and it is very effective." Leon had a similar habit stack, "I stack it with something that I am already doing. If I am going to take a moment to stretch, I might as well use the tool while I am stretching."

Theme 2: Fear

Another construct of the HBM is that the fear of a poor health outcome can help promote a positive health behavior change (Gabriel et al, 2019). In this case the physical therapists and physical therapy students stated that fear of something developing into a dysfunction or an old injury coming back motivated them to perform IASTM self-care. Feeling new aches or memories of old injuries was a strong driver of performing self-care.

The fear of letting an injury develop was extremely relevant to the participants. For Emily the threat of not doing IASTM self-care was “fearing that something is going to get worse. That if I don’t take care of it might progress and what feels like a little tightness now may become a full-fledged injury.” The population of physical therapists have a physically demanding job. Since, their jobs are so physical in nature an injury could impact their ability to work. Yasir was fearful that if he did not treat himself with IASTM self-care that he could develop a musculoskeletal dysfunction and not be able to do his job

> If I don’t get after areas of my body I will not be able to continue my career which is very manual so not using the tool may lead to a shorter career and not being able to continue manual therapy.

Fear of old injuries returning encouraged these physical therapists and physical therapy students to be consistent with IASTM self-care. Amy said that she uses IASTM self-care, “In particular on my knees. I was a gymnast for 13 years of my life. This left me with pain in the hamstrings and adductors. Now that I run a lot it’s kind of aggravating that. I use IASTM self-care before running to prevent aggravating the knees. It helps the inflammation process a lot.” Anthony said there was a fear that if he did not perform IASTM self-care that his injuries would take longer to heal “The perceived threat is whatever’s ailing me in the moment will take longer for it to resolve.” Ophelia had debilitating dysfunctions. She worried that if she did not perform IASTM self-care that these conditions would come back. Here she describes a right-hand tendinopathy that limited her ability to work due to decreased grip strength, “I am right hand dominant” “those things would limit my daily life, I’d be down for a day or two.

Theme 3: Motivation

The participants all referred to motivation as one of the most important drivers for whether they adopted the positive health behavior of IASTM self-care. The motivation may come from objective measurements such as having success in performing an exercise more symmetrically after consistently using IASTM for self-care. Ophelia said

> When performing Romanian Dead Lifts tightness in my right leg limits me and I have to bend that knee a whole lot sooner. By doing IASTM self-care after I train, I have been able to lengthen that tissue and now I can successfully perform that exercise symmetrically.

The desire to have symmetry motivated her and when she saw success it motivated her more “I was able to restore symmetry. This goal motivated me to be consistent with performing it. I was even on both sides and increased my weight. So, I was like, yes, that’s awesome! I’m so happy.”

The motivation can also come from future goals such as running a marathon. Amelia was training for a half marathon. This goal of successfully completing the half marathon motivated her to be consistent with performing IASTM self-care. “I was using it most frequently when training for a half marathon,” Said Amelia, “I increased the mileage quite a bit and when feeling tightness, delayed onset muscle soreness or tendon issues arising that motivated me to perform IASTM self-care so that I could avoid an injury and achieve my goal." Anthony was using IASTM self-care while training for a marathon. When describing his motivation for using IASTM self-care he said, "I feel like I am able to impact my muscles a little bit deeper, almost like a deeper kind of deep tissue massage. While at the same time I'm able to put my legs or back in certain positions to provide a little bit of a stretch to get in there a bit deeper. This helped me to up my mileage without getting sore."

Motivation was linked to all aspects of functional mobility. Participants noted that they were motivated to perform IASTM self-care since it would help them have improved performance and decreased risk of injury when performing activities of daily living, work, gardening, playing sports, performing recreational activities and playing with children. Leon said, "I see IASTM self-care as a way to treat my body for really all functional mobility purposes so that when I do something I'm able to perform it effectively like working on the yard and not pulling a hamstring or lifting something without an injury or performing jiu jitsu or surfing or running. It's a little bit of sports and then daily life as well."

Barriers to motivation were also reported. Leon noted that it is not that hard an intervention to do it just requires motivation. Leon said, "The technique itself is easily done that the biggest barrier is making the decision to do it." One of the variables that limited someone's motivation to perform IASTM self-care included the logistics. If the tool was not with them or they were wearing something they did not want to get massage lotion on they would not be motivated to perform the modality. Holly said, “I won’t do the oil if I am wearing something nicer.”

A perception that they would be unable to perform the modality also limited motivation. This inability to perform the intervention came from a perception of lack of expertise or simply the mechanics of being unable to reach a part of their body negatively affected motivation. Some noted that they did not know how to properly perform the intervention on themselves. All participants felt comfortable performing IASTM on others, but the student physical therapists more so than the physical therapists did not feel confident in their ability to perform IASTM on themselves. Others felt that if they felt they would be unable to reach certain areas of their body to treat it correctly this would override their motivation. The participants that felt they could not perform the intervention correctly or a specific area because of range of motion issues that would leave them unable to effectively reach and treat a specific area that would override their motivation to perform the intervention. In the next two sections we will look at the impact that self-efficacy has on adoption of the positive behavioral change of IASTM self-care.

Theme 4: Self-efficacy

Self-efficacy is the belief in oneself that an individual can perform or successfully learn a skill that will produce a desired outcome (Bandura, 1977). For this research the participants self-efficacy related to performing IASTM self-care was explored. There has been prior research that shows that being able to perform soft tissue massage to oneself may help promote increase self-efficacy in medical students and help them to regain an internal locus of control (Binstock et al., 2020).

The physical therapists felt confident in their ability to perform IASTM self-care. Amelia a physical therapist reported, “I feel very confident in my abilities and very efficient.” Anthony, a physical therapist said, “I like to try out anything that I learn if I'm going to give it to a patient, then I'd like to feel how it is on myself first provide a little bit more insight and a little bit more feedback to patients.” He went on to say, “Throughout my life, I've had injuries, and I found that this was a great way to actually provide self-care.” As noted before there was a range of responses from the physical therapy students about their self-efficacy with IASTM self-care. Some physical therapy students felt that they were still learning how to effectively perform IASTM self-care while others felt that they had good self-efficacy. Yasir, a physical therapy student felt effective at using IASTM self-care for treatment and evaluation. Yasir said, “I am good at using the tool to find areas of adhesions on myself. It is exploratory. Then when I find an area that needs treatment, I feel effective at treating that area with IASTM self-care to improve the fibrotic tissue and get it moving better.”

The participant self-efficacy in this study was improved when they experienced benefits from the intervention. Andy said, “I feel always just looser afterwards, more flexible. More blood flow circulation. I feel like if I do have a muscle spasm or something like that, it seems like it goes away quicker after doing that.” Leon felt that IASTM self-care allows him to improve his circulation and musculoskeletal health in a way that he would not be able to unless he used IASTM for self-care. Leon said, “It’s good for circulation on the blood level and lymphatic level. Helps my body eliminate waste in the area of accumulated inflammation and then mechanically addresses collagen fibers and the tissue that would not get worked unless I took a tool to it get flexibility and move better." These positive results improved participant self-efficacy towards IASTM self-care.

There were different reasons for why the physical therapists and physical therapy students performed IASTM self-care. Some used it before an activity and they believed in their ability to perform the technique to help with priming the neuromuscular system before activity. Amelia said, "before an activity you are priming the neuromuscular system. You are providing input to that area. It promotes circulation and blood flow. So, I think that before an activity can be really beneficial". Emily feels strong self-efficacy in her ability to use IASTM self-care prior to an activity to hydrate the tissue, improve mobility, and prevent injuries. Emily said IASTM self-care, "Prepares your tissues for whatever and making them as healthy as possible from a mobility standpoint or a health standpoint. They are hydrated. They can move well. They can handle load and not get injured quite so easily."

Another positive outcome from IASTM self-care that participants felt effective in performing is mobilization to free up old scar tissue. Orion found a strong belief in his abilities to mobilize scar tissue and improve function with the use of IASTM self-care. He said, "I use it on myself for scar tissue mobilization." He went on to say that he found strong self-efficacy in his ability to treat himself with IASTM self-care, but also in his ability to treat other individual's scar tissue with IASTM. Orion said, "I also use it clinically when treating my patients with knee replacements and any major surgeries, every single patient I am seeing that has a surgical incision we are doing IASTM around the site." He also felt that his patients could be effective in performing IASTM self-care on themselves, "The ones that I think can properly do self-care I send them home with instruction on IASTM self-care for the scar."

Most participants felt comfortable and effective at performing IASTM self-care to work on their body. Amelia a physical therapist reported, "I feel very confident in my abilities and very efficient." Some of the student physical therapists felt less confident in their ability to perform IASTM self-care. Often, they initially experienced IASTM as a modality to use on others and not on themselves. Most student physical therapists reported just learning IASTM self-care recently and therefore were not as comfortable applying it as self-care as they were with applying the modality to others. Yasir said, "I am still learning how to use it. I feel more comfortable using it on others since I have practiced that more than self-care."

Others felt decreased self-efficacy because they could not reach a specific area of the body with the tool because of their own range of motion limitations. Andy said, "If I am treating my upper back or back of my shoulder I have difficulty reaching it I may ask my wife to help out. Also, sometimes I am a little limited by grip strength fatigue after applying IASTM for a long time." Similarly, Orion said, "mid upper back areas, that's the toughest spot for me to reach just range of motion wise trying to get there."

IASTM self-care was seen as an effective intervention not just for treating the body, but also for the impact it had on the spirit and mind. There were two reasons for this. One reason for improved psychological outcomes was that the participants found the intervention to be relaxing. This is linked to self-efficacy. When an individual has a strong belief in their ability to be successful and manage challenging situations, they have resilience to stress, and it promotes relaxation (Varghese et al., 2015). The other reason linked to self-efficacy, is that it provided individuals confidence in their ability to care for themselves.

A psychological benefit from IASTM self-care was the belief that individuals can use this technique to calm and promote relaxation. "It's not time consuming. I do it every morning. Just three to five passes and it just feels good. I feel relaxed after performing it." Others reported using IASTM self-care for facial cosmesis. They would use a variety of tools, typically jade, to massage the face. Those that used it for facial massage noted that is was relaxing. Ophelia said, "When I perform the facial techniques before bed I feel like I fall asleep quicker and sleep better."

One participant noted that they found IASTM self-care to be relaxing but that they felt more relaxed when someone else performed IASTM on them. To create more relaxation and impact the parasympathetic nervous system Leon felt that having someone else perform it on him allowed him to relax more, "I feel like I am doing a good job with it, but as far as tapping into the parasympathetic nervous having someone else do it feels better. If you're just totally relaxed versus you having to physically do something. Sometimes it is easier to let go when someone else is doing it."

Another reason for improved psychological outcomes with this intervention was that it allowed the individuals to take control of their physical health. This improved an individual's confidence. Yasir said, "I find it highly useful to treat and prevent injuries. It prepares me for exercise; it prepares me for the day. It is easy to carry around. I find it good for performance and prevention of faulty movement patterns relative to the concept of regional interdependence. It makes me feel confident that I know how to take care of my body." Victor said, "Aside from the physiological effects to take care of your body it is a way to show some self-love. It can be a great benefit of increasing emotional wellness by taking the time to do something for yourself." The following section is a summary of the interviews.

Summary of Findings

The purpose of this qualitative study was to explore the lived experiences of physical therapists and physical therapy students who were trained in IASTM self-care. The thematic analysis process, which was detailed, revealed four themes. The themes that emerged were cues to action, fear, motivation and self-efficacy. This in-depth analysis was revealing into what are the themes that promote the positive behavioral change of IASTM self-care for physical therapists and physical therapy students. The themes related to the HBM were overall consistent between physical therapists and physical therapy students. The one area where physical therapists and physical therapy students had a slight divergence was in relation to self-efficacy. Physical therapy students had lower self-efficacy when it comes to using IASTM for self-care. This is not surprising, since physical therapy students have less experience in using IASTM for self-care than practicing physical therapists do. The next chapter, Chapter 5, will provide discussion including interpretation of the findings, limitations of the study, recommendations for future research and implications specifically for promoting positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Physical therapy students and physical therapists have been shown to be susceptible and have a high incidence of postural and overuse injuries (Darragh et al., 2009; Tanveer & Shahid, 2017). This finding is surprising since physical therapists and physical therapy students are trained in preventing and treating these conditions. It would be expected that this population should be the best suited to make the positive behavioral changes related to self-care to avoid and treat their own postural and overuse dysfunctions (Holder et al., 1999). It has been found that the technique of IASTM is effective at preventing and treating musculoskeletal postural and overuse dysfunctions (Cheatham et al., 2019). The purpose of this study is to better understand the lived experiences of physical therapists and physical therapy students trained in IASTM self-care. This will provide insight into what beliefs support the adoption of the positive behavioral change of IASTM for self-care.

Key Findings

The four themes that emerged were cues to action, fear, motivation, and self-efficacy. These findings align with the HBM related to positive health behavior change (Gabriel et al., 2019). The themes that emerged from the current research align with the key components of the HBM. The HBM posits that the drivers of health behavior change are cues to action, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self-efficacy. These findings indicate that internal and external cues, fear, motivation, and self-efficacy may drive physical therapists and physical therapy students to adopt the positive health behavior change of IASTM self-care. The following chapter will share the ways in which the findings from this research confirm, disconfirm, or extend the knowledge of what has been found in the literature. The limitations of this current study and recommendations for future research will be discussed. Finally, the implications for positive social change will be discussed.

Interpretation of the Findings

The findings from this qualitative study confirmed findings from prior research regarding what the constructs are that promote and limit positive health behavior change. This research expanded on the literature with a unique population, physical therapists and physical therapy students, and the use of IASTM self-care to prevent and treat postural and overuse dysfunctions. The four themes of cues to action, fear, motivation, and self-efficacy from my study aligned with the constructs of the HBM. The themes that emerged in my study of fear and perceived benefits and barriers aligned with the perceived susceptibility and perceived severity constructs of the HBM. The HBM constructs of perceived benefits related to the theme of motivation from my study. The updated HBM constructs of cues to action and self-efficacy (Rosenstock et al., 1988) are directly related to the same themes from my study. The following sections will discuss the relevant themes of cues to action, fear, motivation, and self-efficacy that emerged from this research on the lived experiences of physical therapists and physical therapy students who were trained in IASTM self-care.

Cues to Action

The cues to action for behavior change can be internal, such as physical symptoms and thoughts or emotions that prompt an individual to make a behavior change or face the condition (Rhodes et al. 2008). The cues to action can also be external such as a health service campaign or interacting with a friend with the same condition. It has been found that cues to action and habits are influential in behavior change (Phipps et al. 2024). The research by Rhoades et al. (2008) on internal and external cues demonstrated that they were influential in creating behavior change. Physical therapists and physical therapy students in my study were strongly influenced by internal symptoms such as discomfort and pain to initiate IASTM self-care. They were also influenced by the cues of patients that they had worked with who had similar conditions. Rachel said, “It’s funny, sometimes I will be treating a patient with IASTM and thinking to myself why aren’t I taking care of myself in the same way”. The external cues that influenced adoption of IASTM for self-care often were social media instructional videos. This is in alignment with prior research that showed a strong connection between social media and influencing behavior change (Laranjo et al., 2015).

The findings from this study differed from the available research in relation to the external cues of social approval. Prior research showed that perceived social approval from friends and colleagues was influential in behavior change (Bosnjak et al., 2020). In the current research, the participants did not reference family members or peers as being influential in their adopting the behavior change of IASTM self-care. This could be that the training of physical therapists and physical therapy students influences them to be more in tune with their bodies and the internal cues of asymmetry and dysfunction. This population may be less influenced by social approval and more influenced by their internal body cues.

Fear

Fear is related to cues to action in that it was a driver of physical therapy and physical therapy students performing IASTM for self-care. Prior research of university students showed that education, along with an individual's perceived susceptibility and perceived severity of a condition, influenced an individual's ability to change their behavior (Khodaveisi et al., 2021). Physical therapists and physical therapy students have extensive education in diagnosing postural and overuse use conditions. Because of this training physical therapists and physical therapy students are aware of their bodies and aware of how symptoms can signal an underlying pathology and threat of a condition becoming worse (Gabriel et al., 2019).

The participants often cited fear that their symptoms could indicate an underlying condition or that it could signal a condition that could develop into an injury as a reason for performing IASTM for self-care. The participants also talked about prior injuries and their fear that this injury could return if they did not perform IASTM self-care. This is consistent with the views of cancer patients who are motivated to continue treatment for fear of the condition returning if they do not (Simonelli et al., 2017). Physical therapists have a deep understanding of how postural and overuse conditions can develop and progress to debilitating conditions. My findings demonstrated how motivating this fear is to create the positive behavior change of IASTM self-care for physical therapists and physical therapy students. Leon demonstrated, when sharing his beliefs on IASTM self-care and the relationship to threat of injury, “I do have a belief that if I don’t perform self-care that I would not perform at my maximum potential which could lead to injury. IASTM falls in the category of something similar, even like flexibility or strength training where I do that because I don’t want to have a future threat of injury”.

Motivation

The physical therapists and physical therapy students who participated in this research noted that motivation was key in performing IASTM for self-care. Prior research in health behavior change has noted that direct experience with individuals with a similar diagnosis is a key motivator. If a physical therapist has cared for an individual with a similar diagnosis, then they are more likely to be motivated to address this issue (Morena et al., 2022). The participants in my study were motivated by a future goal, citing an upcoming marathon, sporting event, or backpacking trip as motivators to perform IASTM self-care in preparation. This is in alignment with prior research that found future goals were strong motivators to behavior change (Berkman, 2018).

Symmetry with exercise was also a strong motivator. The physical therapy and physical therapy students were able to recognize body asymmetries with exercise. They noted that performing IASTM self-care helped them to overcome their asymmetries and perform the exercises symmetrically. This success in improving their performance also motivated them to continue the behavior of IASTM for self-care. This motivation aligns with the HBM construct of perceived benefit. Physical therapists and physical therapy students have a strong understanding of the benefits of IASTM self-care and how it can improve or avoid a postural or overuse dysfunction. The perceived benefits of IASTM self-care were shown to be a strong motivator for behavior change for this population.

Self-Efficacy

The physical therapists and physical therapy students reported a strong background in understanding the pathoanatomical reasons for postural and overuse musculoskeletal dysfunction and pain. The participants also felt confident in their ability to perform IASTM self-care to prevent and treat postural and overuse dysfunctions. Physical therapists were more confident than physical therapy students in performing IASTM self-care. Some of the physical therapy students reported that they had first learned IASTM to treat patients and felt confident with that, but had just recently learned how to perform IASTM self-care and felt that with time and practice, they could be proficient in adapting the IASTM techniques they learned for treating patients to treating themselves. The participants confidence in being able to prevent and treat postural and overuse dysfunctions with IASTM self-care algins with prior research has found that a number of variables including knowledge of a dysfunction, believe that the behavior change would provide a positive outcome and belief in their own capabilities to be successful in treating the dysfunction would improve an individual's self-efficacy (Martinez-Calderon et al., 2018). In my study, high self-efficacy supported the behavior change of performing IASTM self-care.

Because of their self-efficacy related to treating and preventing postural and overuse dysfunction, the participants felt that they could avoid surgery by performing IASTM self-care. This adds to qualitative research on the HBM that found that an individual's self-efficacy related to a pathoanatomic dysfunction was a strong predictor of whether an individual would opt for surgical or conservative care (Peterson et al., 2021). Interestingly, from the work by Peterson et al. (2021), it was found that individuals who had poor prior outcomes with conservative care tended to opt for surgery over conservative care. The current research found that physical therapists and physical therapy students overall had good outcomes with the conservative care technique of IASTM for self-care. This most likely added to the participants' self-efficacy and avoidance of surgery to treat and prevent postural and overuse dysfunction. These prior successes with IASTM for self-care and a strong belief that they can manage these conditions supported the participants' performance of this positive behavior change. This builds on prior research that showed the strong connection between self-efficacy and positive health behavior change (Maiman & Becker, 1974; Shmueli, 2021).

The participants in this study had strong self-efficacy in providing self-care for their musculoskeletal and psychological health, such as stress and confidence. Leon said, “The technique itself is so easily done”. Ophelia went on to say, “I am good at performing IASTM self-care and managing my symptoms and dysfunctions with it”. It was interesting to see that a technique that is designed to address postural and overuse dysfunction also positively impacted an individual's confidence and stress. Prior research has investigated the link between posture, confidence, and stress (Kwon & Kim, 2015). It was found that poor posture was correlated to decreased confidence and increased stress. Based on this research, the participants' improved posture from performing IASTM for self-care may explain the improved confidence and decreased stress.

Additional variables that may have influenced the participants' psychological health are the relationship between taking time out for self-care and the impact it has on overall health. Participants said that when they took the time to care for themselves through IASTM, it made them feel nurtured. Emily talked about how much she enjoyed performing the technique regularly, “It is really enjoyable to do every day”. Taking the time to slow down and use an intervention that they have high self-efficacy with to care for themselves positively impacted their confidence and decreased their stress. O’Neill et al. (2019) investigated academic stress in social work students and found a similar relationship with deceased stress when the students took time out to perform self-care.

Limitations of the Study

A limitation of this study was the focus on a specific population. In this case physical therapists and physical therapy students who were instructed in IASTM self-care were interviewed. The rationale behind the specificity of interviewing this population was that with their training, they would most likely be successful in performing IASTM self-care. Since there was no literature investigating this phenomenon, those most likely to be successful with this behavior change were interviewed first. A better understanding of what promotes behavior change in this population may be helpful in supporting populations that are less likely to make the behavior change successful.

Another limitation of this study is that the information gathered from the participants was based on an open-ended interview guide that was developed for this research. The questions that were asked of the participants may have unintentionally limited the responses. A surprising outcome of this study was that the participants did not talk about perceived social approval as a motivator for the positive health behavior change of performing IASTM for self-care. Prior research based on the HBM found a strong correlation between the public adopting a behavior change and perceived social approval from significant others (Bosnjak et al., 2020). It could have been that if one of the open-ended questions directly asked about perceived social approval, more of the participants may have discussed the impact that family, friends, and colleagues had on their behavior change.

The final limitation was my personal connection to the physical therapists and physical therapy students who were interviewed. I have either worked with or taught all of the participants in this study. This connection may have influenced the collection and coding of data. Techniques were used to improve confirmability to limit the researcher’s bias and ensure trustworthy objective measurements (Cutcliffe & McKenna, 2004). This confirmability helps demonstrate that the researcher was neutral in interpretation. This should support other researchers so that the study can be replicated. The techniques that were used to improve confirmability were participant reviews and reflexivity journaling. Participants reviewed and provided feedback on the data to help decrease the likelihood of any bias. I completed reflexivity journaling to allow for biases, feelings and thoughts to be recognized and their influence on the outcome to be removed.

Recommendations

Based on this research, there are areas for additional research to be completed. I recommend that future research investigate the lived experiences of additional populations that have been trained in IASTM self-care. It would be particularly interesting to perform follow-up research with populations that are progressively less likely to be successful in adopting the self-care of IASTM. The next population of interest may be other allied health care professionals. They suffer from many of the same overuse and postural dysfunctions that physical therapists do, but they may not have been trained in IASTM for self-care. Then, the population of liberal arts college students may be of interest since they have similar postural and overuse dysfunction and will tend to have less training in treating overuse and postural dysfunction. Finally, research of the general population and their lived experience with IASTM for self-care may help better understand how to support this population, who would most likely be challenged in making the behavior change of performing IASTM for self-care. Quantitative studies utilizing questionnaires on the likelihood of using IASTM self-care may be helpful in performing research on populations with a low likelihood of using self-care techniques.

Additional recommended areas for research would investigate how IASTM for self-care impacts an individual psychologically. The current qualitative research found that IASTM for self-care decreased stress and improved confidence in those who performed the technique. Future research should investigate the mechanisms by which IASTM for self-care impacts stress and confidence. This could help to better understand what role, if any, IASTM for self-care may play in the management of stress and promotion of confidence.

Implications

There is a large opportunity for positive social change from this research. This research would most directly impact the population of physical therapists and physical therapy students. There are three reasons why the population of physical therapists and physical therapy students was the focus of this study. One reason is that they have a high incidence of postural and overuse musculoskeletal dysfunction (Darragh et al., 2009; Tanveer & Shahid, 2017). The second reason is that this population understands the efficacy of IASTM self-care for treating these dysfunctions (Cheatham et al., 2019). The final reason is that this population's training in pathological anatomy, differential diagnosis, body awareness, and the technique of performing IASTM self-care leaves them likely to have success in performing and adopting the behavior of IASTM self-care. Better understanding the lived experience of those who are successful in adopting this positive health-behavior change may help inform policy and education for other physical therapists and physical therapy students.

This positive health behavior change in physical therapists and physical therapy students may ultimately impact a larger population. Prior research showed that physical therapists and physical therapy students modeling positive behaviors may influence their patients to perform the same positive behaviors (Black et al., 2012). By creating this positive behavior change in physical therapists and physical therapy students may influence their current and future patients to perform IASTM self-care to prevent and treat overuse and postural dysfunctions.

This research may provide positive social change to the general population in ways beyond just the interactions of a physical therapist modeling these behaviors to their patients. Understanding from this research may provide an opportunity to change policy and education so that the general population has access to these resources and support. As an example, it has been found that the general population has a 35-37% incidence of low back pain annually (Cassidy et al., 2005; Papageorgiou et al., 1995). Recurrence rates occur at a rate of as high as 54% in the first year after an episode of low back pain (Hoy et al., 2010). From just this one musculoskeletal dysfunction, the amount of suffering, including loss of time with family and one's occupation, and cost to society, is apparent. Improved adoption of self-care for the general population could have a strong impact on the health and well-being of the general population for a variety of postural and overuse dysfunctions.

Conclusion

Physical therapists and physical therapy students are predisposed to a high incidence of postural and overuse dysfunctions (Darragh et al., 2009; Tanveer & Shahid, 2017). The participants in my study reported that occupational demands, school demands, and active lifestyles led them to suffer postural and overuse dysfunctions. Prior research demonstrates that IASTM is effective at treating and preventing overuse and postural dysfunction (Cheatham et al., 2019). Although physical therapists and physical therapy students are trained in these techniques and understand efficacy, there is inconsistent adoption of this behavior (Holder et al., 1999). The intent of this study was to better understand the lived experience of physical therapists and physical therapy students who are trained in IASTM for self-care.

The four main themes that emerged from this research regarding adoption of this positive health behavior change were cues to action, fear, motivation, and self-efficacy. These themes aligned with the constructs of the HBM (Rosenstock, 1974). The cues to action were internal sensations of asymmetry, dysfunction, and pain. Physical therapists and physical therapy students' strong foundation in understanding signs and symptoms of musculoskeletal pathology and body awareness vigilance encouraged the behavior of IASTM for self-care. External cues to action came from online instructional sources. Fear of a condition worsening or an old injury returning was also a strong driver. Motivation was often goal-oriented with participants using IASTM self-care to improve symmetry and performance with exercise and active recreation. Goals such as training to complete a marathon motivated this population to perform IASTM self-care. The participants reported high self-efficacy in performing IASTM self-care secondary to their academic and clinical training. An additional benefit of IASTM self-care beyond the physical was the impact it had on improving confidence and reducing stress. The findings from this research may facilitate positive social change by improving policies and education to improve society's adoption of IASTM self-care for postural and overuse dysfunctions.

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Appendix A: Invitation to Participate in Qualitative Study

Subject: Invite to Participate in Qualitative Study

Dear ___________,

I hope this note finds you well. I am currently enrolled in the Walden University PhD program. In order to conduct my research project, I am seeking physical therapists and physical therapy students trained in Instrument Assisted Soft Tissue Mobilization (IASTM) self-care that could participate as "interviewees" for my research project. Would you be interested in assisting?

My research involves an investigation of individual's experience with IASTM self-care. The practice will include completing an Informed Consent statement (I'll e-mail this to you); and allowing me to interview you via video call. The whole process should take no more than 90 minutes of your time.

Please let me know if you would like to participate. In order to meet deadlines, we'll need to begin the process by 1/01/24 and finish the interview by 1/31/24.

You can contact me by phone XXXXXXXXXX, e-mail XXX@waldenu.edu if you have any questions.

Thank you for considering participating in this exercise.

Best wishes,

Edward W. Bezkor

Student, Doctor of Health Psychology

Walden University

Appendix B: Semistructured Interview Guide

Introduction

Thank you for your interest in participating in this study. The intent of this semi-structured interview is to better understand the lived experience of physical therapists and physical therapy students that are trained in Instrument Assisted Soft Tissue Mobilization (IASTM) self-care. Today we will have an interview regarding your experiences with IASTM self-care. The ground rules for today are that everything that is said will be kept confidential. Your individual opinions and beliefs are important. Please feel comfortable sharing those beliefs. Do you have any questions or concerns before we get started?

Interview Questions

Warm Up Question

1. How did you learn about Instrument Assisted Soft Tissue Mobilization (IASTM) self-care? (This is a good warm up question since it allows the respondent to answer easily)

Frequency and Duration

2. After receiving the training on IASTM self-care, how often each week do you use it for self-care? (Participant Classification: No times per week = No (N), less than two times per week = Limited (L) and two or more times per week = Frequent (F).

Rationale for Use

3. What is the rationale for why you use (would use) IASTM for self-care? (Do you use it (would use) for general health, performance, prevention, treatment (posture

and overuse dysfunctions), or some combination of outcomes? use it with other interventions?)

Perceived Threat, Barriers and Benefits

4. What is the perceived threat of not performing IASTM self-care? (susceptibility to condition, severity of condition, impact of impairment on daily life)

5. What are the barriers to performing IASTM self-care?

6. What are the perceived benefits of performing IASTM self-care?

Facilitators

7. What (would) support(s) your ability to perform this self-care? (if needed prompt participant to explore all support including schedule, community, motivation, psychological, physical and individuals).

Self-Efficacy

8. How effective are you at performing IASTM self-care? (control condition you are working on

9. How effective do you think IASTM self-care is for performance, prevention and treatment (Have you been treated or do you treat others with IASTM or recommend IASTM self-care to others?)

Closing Question

10. Is there anything else you would like to share with me about your lived experiences with IASTM for self-care?

Closing Monologue

Thank you for your participation in this interview. I appreciate you sharing your experiences. Please, be assured that the study's findings will be used to help others. After the analysis is completed, I will call you with the results so that you will have an opportunity to verify the accuracy. Once the study is completed, I will share the findings with you. Thank you again for your willingness to participate in this important research.

Peer Debrief

A peer debrief will be coordinated after the data has been collected.