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Occupational Therapist'S Role In Addressing The Psychological Impacts Of Pain In Clients With Upper Extremity Conditions

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OCCUPATIONAL THERAPIST'S ROLE IN ADDRESSING THE PSYCHOLOGICAL
IMPACTS OF PAIN IN CLIENTS WITH UPPER EXTREMITY CONDITIONS

by

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CHT

Occupational Therapy Doctorate, University of North Dakota, August 2022

A Scholarly Project

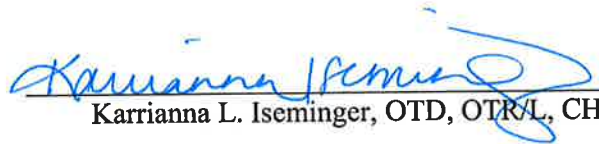
Occupational Therapy Doctorate

Approval

This scholarly project submitted by Shivangi Patel, OTS in partial fulfillment of the requirement for the Degree of Occupational Therapy Doctorate from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.



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7/5/2022

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PERMISSION

Title: Occupational Therapist's Role in Addressing the Psychological Impacts of Pain in Clients with Upper Extremity Conditions

Department: Occupational Therapy

Degree: Occupational Therapy Doctorate

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Abstract

Background & Purpose: The experience of pain is different for every client (Felman, 2020). There are various ways to feel and describe the pain (Felman, 2020). A maladaptive response to pain has been associated with increased pain and physical limitations in clients with upper extremity pain (Verhiel et al., 2019). Upper extremity impairments can result in the disruption of many activities of daily living and instrumental activities of daily living (American Occupational Therapy Association, 2014). Clients with upper extremity pain often resort to maladaptive coping strategies, such as catastrophic thinking (Verhiel et al., 2019). The most common psychological factors related to upper extremity pain include anxiety, depression, pain catastrophizing, and problems related to work and sleep dysfunction (Hamasaki et al., 2018). Despite the significance of upper extremity pain, many therapists do not formally address the psychological factors of pain. Some occupational therapists may lack confidence in addressing the psychological factors due to the social stigmas of mental health symptoms, the lack of time, and inadequate training about how to address psychological factors of upper extremity pain (Knaak et al., 2017; Vranceanu et al., 2017). The purpose of this scholarly project was to develop a product to address the needs of occupational therapy clients demonstrating psychological factors of pain related to upper extremity conditions. Based on best-practice evidence and models of practice, this scholarly project used the findings from the literature review to develop a guide that will aid occupational therapists with psychologically based interventions to address the psychological factors of pain with upper extremity conditions.

Methodology: A needs assessment was conducted through a review of the literature to determine the needs of clients who are experiencing both pain due to upper extremity conditions and psychological symptoms that accompany that pain. PubMed, CINAHL, ClinicalKey, SAGEpub, Elsevier, and PsycINFO were searched using such combinations as: *upper extremity pain AND psychological interventions AND occupational therapy, cognitive behavioral therapy AND pain management, cognitive distortions AND pain, Healthy coping skills AND pain*. The Model of Human Occupation (MOHO) (Clifford O'Brien, 2017) was used to guide the creation and intended use of the product to assist occupational therapists in addressing the psychological factors of the pain of clients with upper extremity conditions. This model was applied to understand how the psychological factors of upper extremity pain can affect a client's volition, habituation, performance capacity, and occupational identity (Clifford O'Brien, 2017). This scholarly project was informed, too, by a concurrent doctoral experience placement in an outpatient orthopedic practice setting.

Outcome: This project resulted in a 4-part module for occupational therapists to use to address the needs in the areas of psychological impacts of pain for clients with upper extremity conditions. The target population is clients across the life span with upper extremity conditions who receive services in an outpatient occupational therapy orthopedic setting. This product includes intervention information to address the red flags of pain, cognitive distortions related to pain and restructuring pain thoughts, relaxation techniques, and learning to accept living with pain. This product will help occupational therapists establish specific needs and priorities of their clients' concerning diagnoses and pain management. The product intends to add an important dimension to intervention, maximize the overall occupational performance (Clifford O'Brien, 2017), and contribute to the health and well-being of clients with upper extremity conditions.

Chapter I

Introduction

Pain is a subjective experience that results from an uncomfortable feeling that the brain senses by sending signals to the nervous system that something may be wrong (Hamasaki et al., 2018). Upper extremity pain, meaning pain in the shoulder, arm or hand, can be caused by a variety of reasons such as overuse, poor body mechanics and posture, lifting, and gripping objects, etc. (American Occupational Therapy Association [AOTA], 2021). Clients with upper extremity pain are often referred to an occupational therapy practitioner for hand therapy to address the pain and its impacts on occupational performance (Hamasaki et al., 2018). The profession of occupational therapy is uniquely positioned to assess and provide interventions not only for the physical components of upper extremity pain but the psychological as well. The holistic and client-centered nature in which occupational therapy practitioners approach evaluation and intervention in the hand therapy setting promotes healing throughout the rehabilitation process (Amini, 2016). The influence that psychological factors have on pain, the client-therapist relationship, and the occupational therapy practitioner's effectiveness in their use of self (AOTA, 2021) as a therapeutic tool are important considerations in the hand therapy context.

Problem

According to Grice (2015), treatments used in the hand therapy setting are typically biomechanically based. Occupational therapy practitioners who practice hand therapy rely on the biomechanical approach (Grice, 2015) to alleviate pain by focusing on the injured or degenerated tissues to restore physical function. Significant emphasis is put on treating the physical aspects of pain while the psychological aspects that can influence physical healing and pain are often not

considered. There are several reasons why psychological factors are absent in hand therapy practice. Vranceanu et al. (2017) completed a study on American orthopedic surgeons regarding addressing and evaluating the psychological factors of their clients. The authors found that the reasons that the psychological contributors to pain were not being addressed are because of the lack of time, training, and the stigmas associated with psychological factors (Knaak et al., 2017; Vranceanu et al., 2017).

The format of the healthcare system impacts the time needed to provide proper care to clients (Jack & Estes, 2010). The reason for this is that occupational therapy practitioners are required to meet the hefty demands of productivity standards, which can be a result of why they may not be providing quality care for clients (Jack & Estes, 2010). However, reconciling time and meeting productivity standards to provide care for clients is a challenge that occupational therapy practitioners face in practice (Jack & Estes, 2010). Because of the social stigmas associated with psychological factors of pain, occupational therapy practitioners are avoidant of addressing the psychological issues. This can be due to a multitude of reasons such as the negative approaches and adverse reactions that relate to mental health symptoms, biases that are built towards psychological symptoms, and the lack of skill and/or awareness in addressing and identifying the psychological factors (Knaak et al., 2017).

Decreased participation in meaningful occupations due to pain has been shown to have a huge impact on satisfaction with overall health and well-being of clients (Walsh et al., 2016). Pain can bring loss into many areas of a client's life such as the loss of physical function, loss of abilities, loss in a favorite hobby, and loss in career and relationships. One can only imagine the difficulty of living with pain and having to accept that pain is going to be part of their life. Therefore, it is important for clients to know that their pain does not have to control other aspects

of their life and that there is a way to cope with having pain while being able to engage in occupations (American Occupational Therapy Association [AOTA], 2020).

Purpose

The purpose of this scholarly project is to develop a product to address the needs associated with the psychological factors of pain related to upper extremity conditions within the hand therapy setting. This product will educate occupational therapy practitioners on how to treat their clients who are presenting with the psychological factors of pain related to upper extremity conditions. Based on best-practice evidence and models of practice, this scholarly project uses the findings from the literature review to develop a guide that will aid occupational therapy practitioners with psychologically based interventions to address the psychological factors of pain with upper extremity conditions.

Theoretical Framework

The Model of Human Occupation (MOHO) was used to develop the questions needed for completing this literature review and for the creation of the product. The questions focused on the MOHO concepts of motivation, habits, roles, routines, skills, abilities, performance capacity, and the influence of the environment on occupation (Forsyth et al., 2019) to gain an understanding of how the psychological factors of pain affect occupational performance (Forsyth et al., 2019) of clients with upper extremity conditions. In the literature review, it was found that pain affects the client, causing disruption of habits and roles (Forsyth et al., 2019) and affecting competence (Forsyth et al., 2019) with completing daily tasks and functional use of the upper extremity. This model can be used to better understand and organize how to restore a client's volition, habituation, and performance capacity (Forsyth et al., 2019) with the use of

interventions to address the psychological factors that contribute to upper extremity pain to decrease pain and improve occupational performance (Forsyth et al., 2019).

Volition

Being in pain is likely to influence a client's volition (Forsyth et al., 2019). Volition is the motivation behind what makes clients engage in occupations that they have chosen to do (Forsyth et al., 2019). A client's motivation for engaging in occupations is influenced by the values (beliefs), interests (likings and gratification), and personal causation (thoughts and feelings) that are instilled with participating in occupations (Clifford O'Brien, 2017). When struggling with the volitional aspects, this can create challenges to the client in terms of participation in occupations. Pain may threaten a client's volition which can lead them to feeling hopeless and disheartened with goals and functional outcomes (Clifford O'Brien, 2017). When clients are unable to participate in their meaningful occupations or there are restrictions with function due to pain, then their motivations, interests, values, and personal causation are diminished (Clifford O'Brien, 2017). Volition is the focus of what makes clients think, feel, and do; and these thoughts and feelings will shape how competent they feel, the value they put in participating in occupations, and their motivation to partake in occupations (Clifford O'Brien, 2017).

Habituation

Habituation consists of the habits and roles that are organized into routines in which clients carry out within their daily lives (Forsyth et al., 2019). Habits are the instinctual or the routine ways of doing things (Forsyth et al., 2019). Roles are the associated identities in which clients view themselves; examples of roles that clients may take on are the role(s) of a student, parent, teacher, laborer, caregiver, etc., and they carry out the respective responsibilities and

duties associated (Clifford O'Brien, 2017). When there is a disruption or impairment such as pain that affects habituation, clients can have feelings of uncertainty, unfamiliarity, and inconsistency in their day-to-day routine (Forsyth et al., 2019). When pain creates drastic changes in a client's habits and roles, this can lead to decreased participation in occupations and client's left feeling uncomfortable and apprehensive with the inability to complete familiar habits and roles (Clifford O'Brien, 2017).

Performance Capacity

Performance capacity refers to the client's physical and mental skills and abilities that are needed when engaging in occupations that will support occupational performance (Forsyth et al., 2019). Performance capacity affects many bodily systems such as the neurological, musculoskeletal, cardiopulmonary, and cognitive functioning that can affect how clients engage in occupations (Forsyth et al., 2019). Clifford O'Brien (2017) presents the concept of the lived body experience, which is to understand how clients are experiencing impairments and how clients perceive the impairment when engaging in occupations. A client's performance capacity (Clifford O'Brien, 2017) may be significantly impacted by pain experiences and the psychological ramifications that can potentially play a role in occupations. When a client is living with pain, all physical and mental skills, and abilities (Clifford O'Brien, 2017) of the client decrease. This reveals why clients are not engaging in occupations; their daily routines have been altered, there are strains in roles in their lives, and overall skills and abilities with occupations have been weakened (Clifford O'Brien, 2017).

Environment

The environment includes the physical and social contexts in addition to the economic, cultural, and political factors that can influence how a client engages in their desired occupations

(de las Heras de Pablo et al., 2017; Forsyth et al., 2019). The political and economic factors consist of the tools/resources that are available for clients to engage in occupations (Forsyth et al., 2019). The cultural aspect consists of giving clients perspective on the value of engaging in desired occupations and how participation in occupations will shape them as a person (Forsyth et al., 2019).

The physical environment consists of the interactions in physical spaces and objects with which clients do activities (Forsyth et al., 2019). An example of the physical environment is the custom fabrication and fitting of an orthosis. McKee & Rivard (2011) articulated the importance of considering the psychological and physical factors of the orthosis. The factors include how the orthosis will fit on the client, what the orthosis will look like on the client, and the lifestyle and occupations the client partakes in (McKee & Rivard 2011). When modifications are not being made to the physical environment, it can affect how clients interact in that context when pain is the main barrier.

The social environment is made up of the interactions, tasks, and social groups with which clients engage in occupations (Forsyth et al., 2019). There is a multitude of social environments that is not limited to only social and leisure settings (Clifford O'Brien, 2017). The social environment can be any place in which clients engage in occupations (Clifford O'Brien, 2017). These environments can be the workplace, home, or school in which social groups, tasks, and interactions often take place (Clifford O'Brien, 2017). While the social environment can support engagement in occupations, it can also interfere with occupational engagement (Clifford O'Brien, 2017) when clients are experiencing pain and disability. This is evident by clients isolating and avoiding social situations as a way to safeguard their pain (Hannah, 2011).

Summary

Occupational therapy practitioners play a significant role in addressing the psychological factors that impede daily function such as upper extremity pain. Pain that limits the ability for clients to carry out their daily activities (Institute of Medicine [IOM], 2011) forces clients to seek medical attention (Schappert & Burt, 2006). Pain has been known to decrease a client's quality of life and mental health and forming a dependence on substances to cope with pain (IOM, 2011; Mills et al., 2019; Smith et al., 2001). The following chapter is a comprehensive literature review that was conducted on topics related to pain, the impacts of pain for clients with upper extremity conditions, the role of the occupational therapy practitioner in addressing clients' psychological factors of pain, and evidence-based psychological interventions that have an emphasis on working with clients with upper extremity conditions. The author of this scholarly project aimed to create a product for occupational therapy practitioners that will ease the process of addressing the psychological impact of pain on clients with upper extremity conditions in an outpatient hand therapy setting.

Chapter II

Literature Review

Occupational therapy is a healthcare profession that takes on a client-centered approach, emphasizing the promotion of health and well-being through engaging in occupations that clients want and need to do (Boyt Schell et al., 2019). “Occupation is everything people do to occupy themselves, including looking after themselves (self-care), enjoying life (leisure), and contributing to the social and economic fabric of their communities (productivity)” (Johnson & Dickie, 2019, p. 5). The goal of the profession is to keep occupation at the forefront by encouraging participation in occupations that are both meaningful and of value to clients in their daily lives (Boyt Schell et al., 2019).

Hand therapy is a specialty area of occupational therapy practice. Hand therapy is the art and science of evaluating and treating impairments and conditions of the upper extremity (i.e., shoulder, elbow, forearm, wrist, hand) (Hand Therapy Certification Commission [HTCC], 2009). This area of practice focuses on the evaluation and intervention of upper extremity conditions that affect a client’s functional use of the arm and performance with activities of daily living (ADLs) and instrumental activities of daily living (iADLs) (Amini, 2016; American Occupational Therapy Association [AOTA], 2014). Activities of daily living are the basic self-care tasks that clients complete, for example, bathing, dressing, eating, etc. (American Occupational Therapy Association [AOTA], 2020). Instrumental activities of daily living are activities that clients complete to take care of themselves, managing their home, or being out in the community (AOTA, 2020). Some examples of iADLs are medication/financial management, meal preparation, child-care, driving, etc. (AOTA, 2020).

When clients have pain, completing basic self-care tasks, caring for the household, and interacting in the community poses as a difficulty for them and can impact how they complete their activities of daily living, engage in occupations, and work (Almomani et al., 2019). Jack and Estes (2010) completed studies on clients with arthritis comorbid with lupus and deformities to the hands and feet. The clients in the studies felt discouraged with the inability of using their hands to complete functional daily tasks due to the pain they were experiencing (Jack & Estes, 2010). The inability to engage in meaningful occupations secondary to pain will impact a client's motivation (Forsyth et al., 2019), disrupt their habits and roles (Forsyth et al., 2019), and affect their overall ability to perform at their typical level of function.

Psychological Influences of Pain

Emotion is a powerful catalyst that shapes a client's pain experience through connections in the brain and is indicative of how clients will behave and react to pain (Linton & Shaw, 2011). Feelings of anxiety, guilt, frustration, anger, and even depression are some examples of the emotions that clients may find themselves experiencing in response to pain (Linton & Shaw, 2011). Clients who are suffering from chronic pain need help understanding how to manage the thoughts, emotions, and behaviors associated with their pain, and they need support to cope more effectively with both the pain and the impacts it has on their lives (Linton & Shaw, 2011). Given the strong relationship between emotional responses and pain, it is important to note that treating chronic pain needs to go beyond analyzing the physical symptoms but to also attend to the client responses to pain and integrate the psychological factors into practice (Linton & Shaw, 2011). If occupational therapy practitioners are largely focused on treating pain based on physical dysfunction, this can result in a letdown of meeting a client's goals with pain management and can further exacerbate the psychological symptoms caused by pain.

Clients with upper extremity pain may experience psychological symptoms such as anxiety, depression, kinesiophobia, or catastrophization (De et al., 2013; Verhiel et al., 2019). Kinesiophobia is referred to as the pain-related fear of movement (De et al., 2013). De et al. (2013) articulated the importance of not disregarding a client's fear of movement, as it is normal for clients to feel cautious about pain with movement. Pain catastrophizing is an exaggeration or the tendency to magnify the pain experience and intensity (Sullivan, 2013; Sullivan et al., 2001). Sullivan et al. (2001) mentions that catastrophizing has been found to increase clients' pain experience. This can lead to clients consistently thinking about their pain, amplifying their pain experience, and overall feeling helpless. The research suggests that there may be a correlation to kinesiophobia and pain catastrophizing in terms of the psychological factors related to pain (De et al., 2013). De et al. (2013) found a correlation that clients who demonstrated higher scores on the Disabilities of the Arm, Shoulder, and Hand (DASH) assessment (meaning higher disability) showcased higher levels of catastrophic thinking and kinesiophobia. In addition, clients who developed symptoms of depression and anxiety had higher DASH scores indicating that they showed greater psychological signs with upper extremity pain and disability (De et al., 2013).

Another common psychological contribution to pain that clients may experience is vigilance. Vigilance is known as the state in which a client puts an unhealthy attention towards their pain (Linton & Shaw, 2011). When clients start to develop a vigilance to their pain, they are consumed with every aspect of their pain; this can also be known as hypervigilance (Linton & Shaw, 2011). They fixate over specific activities, movements, and certain times that they feel the most pain. This can lead to clients becoming restricted, guarded, and overprotective of themselves in order to not feel pain. While pain can warn the body that it may need direct

attention and appropriate action must be taken to deal with pain, it can also display increased and excessive attention to pain for clients who are cautious (Linton & Shaw, 2011).

Eccleston (2001) emphasized that clients with chronic pain may also present with symptoms of depression. Clients often feel hopeless and will go to such lengths by demeaning their self-worth and abilities due to the impact of pain in their life (Eccleston, 2001). It has been noted that clients who have chronic pain and depression can also have difficulties with cognition such as memory, concentration, and the inability to complete tasks (Eccleston, 2001). Eccleston (2001) mentions that depression is not caused by pain but that the way clients perceive and react to their pain can create hinderances with daily life. Schier and Chan (2007) completed a study and found that clients who experience symptoms of depression are often frustrated and unsatisfied with performing the designated roles in their lives. It is crucial to recognize and to educate clients that pain is a normal experience with upper extremity rehabilitation, and that the thoughts, feelings, and emotions regarding pain can change over time (Smurr et al., 2008).

Anxiety is associated with the constant or excessive worrying of situations that are not threatening or alarming (National Alliance on Mental Illness [NAMI], 2017). Anxiety is a psychological factor that can change the client's overall experience with pain (Hamasaki et al., 2018). Anxiety has negatively impacted clients' thoughts, feelings, behaviors, and emotions which has delayed their healing (Woo, 2010). Studies have shown that there is a strong connection of having symptoms of anxiety and depression with chronic pain (Woo, 2010). Pain and feelings of anxiety have been known to co-occur in the sense of understanding the immediate triggers of pain, perceiving pain as a danger to the body, and pain signaling throughout the body and brain (Woo, 2010). This makes treatment and pain management challenging with the presence of depression and anxiety (Woo, 2010). During the therapeutic

process, it is important that intervention planning with clients begins early to reduce the pain-related fears and worries and to provide support to clients to decrease the impact of the psychological factors of upper extremity pain (Smurr et al., 2008).

Psychological factors not only occur because of an upper extremity injury, but pre-existing determinants such as age, gender, lifestyle, diet, socioeconomic status, mental health, sleep, and history of violence or abuse (Mills et al., 2019) are risk factors for persistent upper extremity pain and dysfunction following upper extremity injury. When treating the client, it is important to look at all the unique client factors that are vital to their treatment and address the mental health impact of upper extremity pain (Thompson, 2018). It is important that occupational therapy practitioners that specialize in hand therapy take into consideration the psychological factors as well as the biological factors that impact a client's injury and ability to heal and improve their occupational performance (Forsyth et al., 2019) and physiological healing.

Pain Perceptions and Maladaptive Thoughts

The clients that are experiencing psychological factors that contribute to their pain tend to be pessimistic with their pain experience and often feel that they are incapable of doing anything to alleviate their pain (Bekkers et al., 2014). Clients with maladaptive thinking tend to heighten their pain experience, feel helpless with what to do about their pain, and ponder the experience of pain (Hamasaki et al., 2018). The theory behind this is that clients who have maladaptive thoughts regarding their pain may misinterpret what the occupational therapy practitioners are articulating to them about their pain (Bekkers et al., 2014). There is a possibility that occupational therapy practitioners specializing in hand therapy may misinterpret a client's report

of pain as an indicator of what is happening from a pathophysiological standpoint, when in fact it is a consequence of maladaptive thoughts about their pain (Bekkers et al., 2014).

Huft and Schuh (2021) discussed a specific group of clients with upper extremity pain known as non-adaptive clients and what their perceptions of pain are. Non-adaptive pain refers to pain associated with any movement of the involved area of the body (Huft & Schuh, 2021). The clients with a non-adaptive pain response are unable to adapt and modulate their pain internally which often can lead to them self-medicating with prescription drugs to cope with pain (Huft & Schuh, 2021). The maladaptive thoughts and behaviors may also reinforce the psychological symptoms such as depression and anxiety that can lead to the clients amplifying their pain symptoms (Bekkers et al., 2014). Therefore, occupational therapy practitioners must be careful with the language they use to avoid perpetuating the client's maladaptive pain thoughts.

Impact on Physical Healing

Clients with upper extremity pain enter hand therapy in a vulnerable state and feel as if they are unable to regain function (Moorhead et al., 2011), complete daily activities, and go about their life. A reason why psychological factors of upper extremity pain impact the clients' physical healing is because clients do not follow rehabilitation protocols or home exercise programs (HEPs). Palazzo et al. (2016) mentions that the reason why clients are not adhering to prescribed exercises is due to false perceptions and fear embedded in the client's mind that the exercises will harm them and lead to greater pain which can potentially affect physical healing. When the deleterious effects of pain influence the client's ability with completing HEPs, clients will inherently display poor follow-through due to fear of moving while doing exercises that can further provoke pain (Escolar-Reina et al., 2010). Occupational therapy practitioners must address this immediately to reduce pain and associated fears and beliefs related to completing

home exercises (Escolar-Reina et al., 2010). Escolar-Reina et al. (2010) completed a study that recommends occupational therapy practitioners to supervise clients while they are completing exercises in the therapy session to mitigate the worries and fear that clients have regarding pain. Therefore, occupational therapy practitioners must address the psychological factors related to pain in the hand therapy setting to improve their clients' occupational performance (Forsyth et al., 2019), increase adherence to HEPs (Escolar-Reina et al., 2010; Palazzo et al., 2016), and promote physical healing.

Areas of Occupation Affected by Pain

Participating in occupations such as work and sleep can be considerably limited for clients with pain (American Occupational Therapy Association [AOTA], 2021). Throughout the research, it has been known that there is a relationship between sleep and pain (Pacheco, 2022). The research has suggested that the “effect of sleep on pain may be stronger than the effect of pain on sleep” (Pacheco, 2022, How Sleep Affects Pain section, para. 1). The brutal cycle of sleep and pain is most evident for clients through displaying symptoms of insomnia, depression, and anxiety (Pacheco, 2022). Clients that are going through this pain cycle often have poor sleep hygiene and patterns, feel depressed, and have difficulty with resting their mind at night (Emery et al., 2014). This can lead to higher levels of pain intensity since the body is not getting enough sleep (Emery et al., 2014).

Work serves as a major role for clients as well as a source of satisfaction and social interaction (Hannah, 2011). The role of the worker connects clients as contributors to society but can easily be threatened by pain (Schier & Chan, 2007). When the role of the worker is suddenly lost or that pain has changed their ability in performing their work tasks, this can often lead to a decrease in self-esteem and or loss of the worker role (Hannah, 2011). The

unfortunate part of having pain while working can be due to various reasons. Pain can negatively affect the clients' goals in life, incur financial hardships, cause an inability to participate in work-related social activities, and poorly affect overall well-being and support for themselves and their family (Schier & Chan, 2007).

Frame of Reference

The Model of Human Occupation (MOHO) was used to guide the creation of this product, which aids occupational therapy practitioners in addressing the psychological factors of pain related to upper extremity conditions. The client factors are exemplified by the volition, habituation, and performance capacity components (Clifford O'Brien, 2017). The environment consists of the physical and social contexts along with the cultural, political, and economic factors that influence clients to participate in occupations (Forsyth et al., 2019). Finally, the occupational factors promote the doing, thinking, and feeling which builds the clients' occupational identity and competence needed to perform occupations (Forsyth et al., 2019).

The role of the occupational therapy practitioner in this model is to facilitate change in the client's performance capacity with occupations by examining their environment, habits and roles, and motivation needed to return to daily functioning (Clifford O'Brien, 2017). MOHO outlines intervention strategies, which describe how occupational therapy practitioners will analyze all the pertinent factors related to the client, encourage occupational engagement, and create intervention plans that will support the client's goals and outcomes throughout the therapeutic process (Clifford O'Brien, 2017). In using the intervention strategies, an occupational therapy practitioner can "validate, identify, give feedback, advise, negotiate, structure, coach, encourage, and provide physical support" to clients (Clifford O'Brien, 2017, p.123). Occupational therapy practitioners can use these intervention strategies to help clients participate

in meaningful occupations by attending to the specific needs of the client and bringing attention to the client's volitional, habituation, performance capacity, and environmental factors to set clients up for success (Clifford O'Brien, 2017).

Interventions to Apply to Practice

The current research suggests that the effectiveness of utilizing psychologically based interventions for clients with chronic pain has shown encouraging results on behavioral and cognitive treatments (Roditi & Robinson, 2011). The interventions that were most widely studied and implemented were progressive muscle relaxation, diaphragmatic breathing, visual/guided imagery, and cognitive behavioral therapy (CBT) (Roditi & Robinson, 2011). In addition, MOHO identifies key intervention strategies that are helpful for occupational therapy practitioners to use with clients in addressing the psychological factors of pain as well as setting and achieving goals that will facilitate engagement in occupations (Forsyth et. al, 2019).

Progressive Muscle Relaxation

Progressive muscle relaxation (PMR) is an exercise that is used to reduce tension in the body by slowly tensing and relaxing specific muscle groups throughout the body in an orderly fashion (Roditi & Robinson, 2011). There is evidence behind the health benefits of using PMR as a modality to treatment with chronic pain. This specific relaxation technique is made to be easy to use and follow for clients (Wang et al., 2011). PMR contributes to a range of benefits for clients with chronic pain such as muscle relief, decreased stress, lessened anxiety and depression, improved sleep, and a reduction in pain (Nunez, 2020; Toussaint et al., 2021; Wang et al., 2011). By using PMR in treatment, this will help clients be cognizant of where they are storing the most stress in their body, become more aware of when they are experiencing pain and tension, and provide a sense of calm when participating in occupations.

Diaphragmatic Breathing

Diaphragmatic breathing also known as deep breathing is a specific type of breathing technique that uses the diaphragm instead of the chest to allow for slow and controlled inhalation and exhalation of breaths (Toussaint et al., 2021). This breathing technique has been known to reduce symptoms of anxiety and stress (Toussaint et al., 2021). In a study that was done by Pardede et al. (2020), clients who were about to have surgery participated in deep breathing along with the use of aromatherapy to reduce anxiety and stress before surgery. This study showed that the use of deep breathing and aromatherapy was affective with these clients and decreased their anxiety levels (Pardede et al., 2020). When clients have pain, they have the tendency to hold their breath or breathe fast when their pain begins to intensify (Bee, 2019). Bee (2019) mentions that using the diaphragm will aid in pain reduction. When using the diaphragm for breathing exercises, it allows other muscles like the neck, chest, and shoulders to relax (Bee, 2019). In this case, if pain or stress is stored in other areas of the body, this technique can allow clients to put more focus on diaphragmatic breathing. Using the diaphragm also allows clients to have good posture and become aware of their breathing throughout the day (Bee, 2019).

Visualization and Guided Imagery

Guided imagery is a well-known relaxation technique that has helped clients reduce stress and anxiety as well as treat pain (Nelson et al., 2013; Quinn, 2019). This is done through the guidance of imagery and visualizing relaxing images to allow clients to feel at ease and let their mind and body rest (Quinn, 2019). Draucker et al. (2015) completed studies on clients undergoing surgery and reported that clients found guided imagery to be relaxing and an effective pain management intervention. Guided imagery and visualization encourage clients to

diverge their attention away from pain by imagining they are in a relaxing and calm environment that will help them achieve a sense of relaxation (Roditi & Robinson, 2011).

Cognitive Behavioral Therapy

Cognitive-behavioral therapy (CBT) is a form of psychological treatment that focuses on how to adapt the unhealthy thoughts, feelings, and behaviors that clients may portray (Roditi & Robinson, 2011). CBT principles have been known to be effective in the treatment of clients with chronic pain (Roditi & Robinson, 2011). CBT intervention involves strategies that help clients to change their thinking and behaviors regarding pain (Roditi & Robinson, 2011). The strategies consist of using coping skills, problem-solving, activity pacing, relaxation techniques, and more (Roditi & Robinson, 2011). Research has found CBT to be an effective treatment for chronic pain. CBT helps clients better understand how they can manage their pain using coping strategies and keeps clients accountable for managing their pain-related thoughts, feelings, and emotions for them to feel a sense of control in their lives (Roditi & Robinson, 2011).

CBT includes coping skills training and cognitive restructuring as interventions for the psychological factors that contribute to chronic upper extremity pain (Roditi & Robinson, 2011). Cognitive restructuring focuses on how to change the distorted thoughts, feelings, emotions, beliefs, and responses related to pain (Wegener et al., 2022). This type of intervention challenges clients to increase their awareness of negative thoughts that often lead to pain catastrophization and adjust negative thoughts by replacing them with positive statements (Wegener et al., 2022). This can help clients feel that they are in control of their pain-related thoughts and are encouraged to use positive coping to overcome their beliefs pertaining to pain (Wegener et al., 2022). Cognitive restructuring helps clients to find a balance with their thoughts, feelings, and emotions that are associated with pain (Wegener et al., 2022). This can help clients feel that they

have the tools needed to self-manage, be educated on the cause of their condition related to pain, to problem solve, and continue to use coping strategies to reduce pain (Wegener et al., 2022).

MOHO Therapeutic Strategies

The model advises that specific interventions and strategies are not meant to be “one size fits all” and are considered to work for every client (Clifford O’Brien, 2017). The experience of pain is different for each client and how it affects their ability to complete daily activities.

Therefore, the MOHO therapeutic strategies (Forsyth et. al, 2019) are implemented in practice for occupational therapy practitioners to help them identify challenges that clients are having regarding psychological factors and upper extremity pain. In addition, the strategies will help to diversify the occupational therapy practitioner’s approach with treatment planning and cater to supporting the clients’ progress and goals related to occupations (Clifford O’Brien, 2017; Forsyth et. al, 2019) and pain management.

Conclusion

After extensive research, a common theme has been that occupational therapy practitioners in an outpatient hand therapy setting are not putting much focus on psychological factors in their treatment. The reason for this is that mental health interventions are not deemed medically necessary in that specific practice setting. Furthermore, the lack of time, training, and the pervasive social stigmas (Knaak et al., 2017; Vranceanu et al., 2017) associated with addressing the psychological factors are contributors to why occupational therapy practitioners are not putting focus on this aspect in practice. There are a variety of interventions and strategies that are available for an occupational therapy practitioner in an outpatient hand therapy setting to address these factors. What has been found in the literature is that there is not enough research being conducted that emphasizes how to address the psychological factors related to upper

extremity pain. The research merely suggests that it needs to be addressed, which is why this poses a challenge for occupational therapy practitioners in the outpatient orthopedic setting. This literature review establishes the need for a holistic, client-centered therapeutic approach to address the psychological impacts of clients who have suffered or are suffering from upper extremity pain.

Chapter III

Methods

The product, *How to Address the Psychological Impacts of Pain in Clients with Upper Extremity Conditions: A 4-Part Module*, was created to guide occupational therapy practitioners who specialize in hand therapy practice. These modules will help in addressing the psychological factors of pain commonly related to upper extremity conditions. The Model of Human Occupation (MOHO) was used to create and provide the foundation of this product. This model has helped with designing the product by focusing on how pain affects the volition, habituation, performance capacity (Forsyth et al., 2019) of the client with engaging in occupations in the presence of pain. Throughout this scholarly project, it was found that clients with upper extremity pain were not motivated (Forsyth et al., 2019) to engage in occupations, habits and roles (Forsyth et al., 2019) were disrupted, and overall occupational performance (Forsyth et al., 2019) were not satisfactory. The emotions and feelings towards occupations were skewed and the environment in which occupations were performed was no longer conducive for clients due to the pain-related symptoms and psychological components that affects their motivation (Forsyth et al., 2019) for participation in occupations.

A review of the literature was conducted through electronic scientific databases provided by the University of North Dakota School of Medicine & Health Sciences (SMHS) Library Resources. Databases include PubMed, CINAHL, ClinicalKey, SAGEpub, Elsevier, and PsycINFO. The following search terms were utilized to conduct the literature review:

Psychological AND “upper extremity pain”	“Acute and chronic pain” AND “upper extremity conditions”	“Hand therapy” AND “interdisciplinary team”
“Occupational therapy” AND “upper extremity pain”	“Hand therapy” AND “psychological interventions”	“Psychological issues” and orthosis”

“Hand therapy” AND “psychological assessments”	“Needs assessment” AND “hand therapy”	“Carpal tunnel” AND “sleep”
“Upper extremity pain” AND “psychological interventions” AND “occupational therapy”	“Psychological assessments” AND “hand trauma”	“Chronic pain management”
“Psychological interventions” AND “pain”	“Pain” and “depression”	“Vigilance” and “pain”
“Work” and “pain”	“Role identity” AND “psychological factors”	“OT role” AND “upper extremity pain”
“Cognitive behavioral therapy” AND “pain management”	“Cognitive distortions” AND “pain”	“Healthy coping skills” AND “pain”

The inclusion criteria consist of literature reviewed in the English language and focused on research that was published after the year 2010 to find the most updated interventions used to address the psychological factors of upper extremity pain. The majority of the literature revolved around the physiological treatment for upper extremity conditions but did not emphasize psychological interventions. The articles primarily focused on upper extremity pain and conditions (surgical and post-surgical diagnoses). The participants in the studies were 18 years and older as the research did not focus on age groups less than 18 years of age. The participants in the studies had referrals for hand therapy and history of mental health/psychiatric conditions in conjunction to upper extremity pain. These studies were done both outside and inside of the United States. The exclusion criteria consist of epidemiological studies, sample size variations, clients under the age of 18, and pregnant clients due to the research terms for this project that did not specify women with carpal tunnel syndrome or hand and wrist problems.

This scholarly project did not require Institutional Review Board (IRB) approval as this project did not involve research on human subjects, animal subjects, or the use of biological material (DNA, biohazards, etc.). The ethical considerations that were considered were client confidentiality, informed consent, voluntary participation from clients, not harming clients, keeping the anonymity of clients, and only assessing relevant components of the product.

Occupational therapy practitioners may decide how they will implement the product into their intervention plan with clients that are exhibiting psychological factors that are contributing to upper extremity pain. This scholarly project was informed by a concurrent doctoral experiential placement (DEP) in an outpatient hand therapy setting. The DEP experience informed the creation of this product by obtaining information from clients through three forms of information. The first was through a verbal pain rating scale and asking clients “On a scale of 0-10, 10 being emergency room pain, 5 neutral, and 0 is no pain, how would you rate your pain at its worst, at rest, and with activity?”. The second was utilizing the Quick Disabilities of the Arm, Shoulder, and Hand (QuickDASH) which is an 11-item questionnaire taken during the initial evaluation, completing progress notes, and discharge to provide objective information on musculoskeletal symptomology to measure the client’s perception of upper extremity function. The third was taking note of the medical history on the client intake form with emphasis on a history of mental health-related issues. The information was then used to see if clients would be appropriate for the implementation of psychological interventions to help reduce their pain and pain thoughts. This was based on the client’s showing and demonstrating pain-related thoughts, feelings, and emotions.

The first step to using this product was to give a pain assessment during treatment and deliver the information of the product based on the client report to determine whether the client would be appropriate and benefit from the intervention. This product would be appropriate to introduce once a week during their treatment process or determine where the client is at with their pain and then apply the appropriate module. Once a client(s) is deemed appropriate for treatment implementation, the strategies can be applied and used in treatment to help the client reduce the thoughts, feelings, and emotions related to pain.

Chapter IV

Product

This chapter consists of an overview of the product of this scholarly project (*How to Address the Psychological Impacts of Pain in Clients with Upper Extremity Conditions: A 4-Part Module*), is in the Appendix. The product consists of ideas for occupational therapy interventions to address psychological factors related to upper extremity pain in the hand therapy setting. The product serves as an educational tool that occupational therapy practitioners can utilize in the treatment process with clients. The product outlines the goal of using the product, specific module objectives, and examples of using the Model of Human Occupation (MOHO) therapeutic strategies (Forsyth et al., 2019) within each module that the occupational therapy practitioner can refer to and use with clients. MOHO was used as a guide to create this product considering the volitional, habituation, environment, and performance capacity of how pain can affect the client's daily life and participation with occupation(s) (Forsyth et al., 2019).

The occupational therapy practitioner will determine whether the client is experiencing the psychological factors of pain through variables such as the medical history of psychological diagnoses of the client and their responses and perceptions of pain. The occupational therapy practitioners can use this product in practice and decide whether clients would be appropriate for the intervention(s), and they can decide which module(s) would be appropriate for the client dependent on the psychological factors that identify with pain.

Each module consists of occupational therapy intervention ideas and strategies that can be used with the client depending on how and when they are experiencing pain and what a client is reporting to the occupational therapy practitioner. By looking closely at the thinking, feeling, and doing (Forsyth et al., 2019) behind what clients are experiencing with their pain in the

literature review that was done, it has been known that the use of cognitive-behavioral therapy (CBT) is the most effective intervention for pain management. At the end of each module, is a sample scenario that depicts a client experiencing the psychological factors that are contributing to upper extremity pain. The scenarios consist of the interventions, psychological factors that have been identified, and the MOHO therapeutic strategies that the occupational therapy practitioner can implement in treatment to support and facilitate change (Forsyth et al., 2019) with clients experiencing pain.

The first module, “The Red Flags of Pain,” helps occupational therapy practitioners identify pain-related behaviors and responses that would be considered as the “red flags” related to upper extremity pain. These pain-related behaviors and responses can be secondary to the psychological factors of pain that clients are portraying. In addition, there is list of medical-related red flags that can be used by the occupational therapy practitioner to identify the illnesses and conditions affecting upper extremity pain.

The second module, “Restructuring Cognitive Distortions, and Maladaptive Pain Thoughts,” explains what cognitive distortions are and what they may look like in the clinic. Once cognitive distortions are identified, the occupational therapy practitioner will help clients to become more aware of those distortions and their contribution to perpetuating upper extremity pain. The occupational therapy practitioner will help clients understand how thought distortions affect the motivational aspects and the associated behaviors that influence negative thoughts when having pain. This acts as a helpful guide to educate clients on restructuring their thinking and feeling. There is a resource link at the end of the module which provides access to an online Cognitive Behavioral Therapy (CBT) based intervention that is pertinent to pain management.

The third module, “Relax Away the Pain”, consists of relaxation techniques that occupational therapy practitioners can use to help decrease pain, provide desensitization to the sensory system in response to pain, and reduce pain thoughts, worries, feelings, or frustrations that clients are experiencing. There are resource links available showing various relaxation techniques that the occupational therapy practitioner can access online and print out for use.

The fourth module, “Learning to Accept Living with Pain” consists of healthy coping strategies. Occupational therapy practitioners can make suggestions/recommendations of using these coping strategies to clients to help them continue living with chronic pain. This module will also help clients to realize the negative coping strategies they have been using to cope with pain and how it has affected their healing. The aim for this module is to help clients find healthier alternatives such as the use of coping strategies for pain management.

An example of using the product would be that a client is having pain-related thoughts, difficulty grasping the concept of pain, and they are unfamiliar with how to cope with pain. The occupational therapy practitioner can use the first, second, and fourth modules to address the red flags, cognitive distortions, and acceptance with living with pain by recommending coping strategies for pain management. A few MOHO therapeutic strategies (Forsyth et al., 2019) that can be used are *validating* (Forsyth et al., 2019) what the client is feeling and their pain experience, *coaching* (Forsyth et al., 2019) client’s various way that they can use relaxation techniques, and *giving feedback* (Forsyth et al., 2019) to clients on their perceptions with pain and how it affects their daily living.

The development of this product was facilitated by using The Model of Human Occupation (MOHO) to emphasize the importance of occupation, motivation, habituation, and performance capacity (Forsyth et al., 2019). This is essential to consider when treating clients

that are experiencing pain-related thoughts, feelings, and emotions, which are directly impacted by motivation, interactions with the environment, and the skills and abilities needed to perform desired occupation (Forsyth et al., 2019). The reason for this is that occupational therapy practitioners using MOHO are mindful of the client's volition, habituation, performance capacity, and environmental factors that will influence the therapeutic process (Forsyth et al., 2019). This model assisted in the development of the product, which an occupational therapy practitioner can utilize to gain confidence with addressing the psychological factors related to upper extremity pain using interventions that focus on the components of MOHO.

Chapter V

Summary

A review of the literature was completed to explore the psychological factors of pain with upper extremity conditions. The most common factors that were found to be related to pain included depression, anxiety, kinesiophobia, and pain catastrophizing (De et al., 2013; Verhiel et al., 2019). Pain affects all areas of occupation, but the occupations of sleep and work were found to be the most affected occupations (American Occupational Therapy Association [AOTA], 2021). *How to Address the Psychological Impacts of Pain in Clients with Upper Extremity Conditions: A 4-Part Module*, was created to assist occupational therapy practitioners with addressing the psychological factors of pain associated with upper extremity conditions. This product was created to address the problem identified in the literature, which was that occupational therapy practitioners lack the time and training to provide interventions for the psychological factors associated with upper extremity pain.

The Model of Human Occupation (MOHO) was the chosen theoretical framework that was the driving force for the literature review and the creation of the product. MOHO is a framework that focuses on volition, habituation, performance capacity, and environmental factors (Forsyth et al., 2019). This encourages the doing, thinking, and feeling that creates occupational identity and competence of clients engaging in occupations (Forsyth et al., 2019). It has been found that psychological factors of pain affect the client's motivation, habits, roles, and competence (Forsyth et al., 2019) with completing daily tasks and functional use of the upper extremity. This model can best help occupational therapy practitioners to understand how to restore clients' volition, habituation, and performance capacity (Forsyth et al., 2019) with the

use of interventions to address the psychological factors that contribute to upper extremity pain, decrease pain, and improve occupational performance (Forsyth et al., 2019).

Possible Implementation

This product was created for occupational therapy practitioners in the outpatient hand therapy practice setting to address the psychological factors related to upper extremity pain. The implementation of this product is reliant on the ability of occupational therapy practitioners to identify and address the psychological factors of pain and how the related factors affect client's engagement in occupations, motivation, habits, roles, routines, and performance limitations. This product provides a guide for various psychological interventions; however additional interventions should be included in a client's treatment that are meaningful and will provide self-efficacy within the occupational roles, routines, habits, and pain-related thoughts that were identified.

Limitations

This product has the potential to be beneficial to clients in the outpatient hand therapy setting that are experiencing the psychological impact of pain related to upper extremity conditions. There are multiple limitations of this scholarly project. Because the guide was not initially used in its entirety in the hand therapy setting with the target population, the pilot use of the guide in practice could not determine reliability and validity of the tool. Additionally, further research would need to be conducted to evaluate the role of occupational therapy in addressing the psychological factors of upper extremity pain. In the outpatient hand therapy setting, the time and commitment needed for occupational therapy practitioners to learn and understand usability of a new product in practice and with clients is restricted. The occupational therapy practitioners must find what works best for the agency and in tandem with clients to address

these needs. Lastly, psychological factors are variable in nature and dependent upon various hand therapy treatments and psychological interventions used in conjunction with treating the physical aspects. This requires occupational therapy practitioners to use clinical reasoning and sound judgment to tailor the product for individual client use.

Recommendations

It is recommended that occupational therapy practitioners include psychological interventions within the therapeutic process in the clinical setting of hand therapy rehabilitation. Additionally, further research and product development may be completed for the use of psychological interventions and identifying psychological symptoms in the hand therapy setting. Furthermore, how pain influence the psychological factors also impacts overall physical health. Lastly, it would be recommended for occupational therapy practitioners to work in a mental health setting prior to a hand therapy setting to incorporate psychological interventions for clients experiencing pain and to gain confidence with addressing the psychological factors. With the implementation of the product to address both upper extremity pain and psychological factors, more generalized practice settings may be able to incorporate psychological interventions into occupational therapy practice. The outcomes should be further evaluated utilizing a variety of psychological interventions to assess client's perceptions and overall satisfaction.

Conclusions

The aim of this scholarly project was to create a four-part module that will aid occupational therapy practitioners in addressing the psychological factors that are commonly associated with upper extremity pain that can influence a client's overall health and well-being. The product consists of four modules: the first module defines the "red flags" of pain; the second

module identifies cognitive distortions related to pain and how to cognitively restructure thoughts, feelings, and emotions related to upper extremity pain; the third module consists of relaxation techniques that can be implemented in treatment; and the fourth module explains how to accept living with pain and use healthy coping strategies for pain management. This is achieved by allowing clients to self-assess how the psychological factors have affected his/her wellbeing.

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Appendix



How To Address the Psychological Impacts of Pain in Clients with Upper Extremity Conditions: A 4-Part Module

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Introduction to the Guide

This product is intended to help occupational therapy practitioners address the psychological components of pain in clients with upper extremity conditions. This product serves as a guide to occupational therapy practitioners within the hand therapy setting. By providing evidence-based interventions and education in the hand therapy context, occupational therapy practitioners can build their confidence in addressing the psychological factors of pain and restore engagement in meaningful occupations for their clients.

Guiding Theory

The Model of Human Occupation (MOHO) guides the creation of this product for occupational therapy practitioners to address the psychological factors of pain related to upper extremity conditions. The role of the occupational therapy practitioner is to analyze the volition, habituation, performance capacity, and the environment that impacts the client's ability to do, think, and feel, which produces occupational identity (Forsyth et al., 2019). To help think about the process of occupational engagement (Forsyth et al., 2019), occupational therapy practitioners use the therapeutic strategies in conjunction with the evidence-based psychological interventions to identify and address the psychological factors of upper extremity pain.

Therapeutic Strategies Identified by the Model of Human Occupation (MOHO)

MOHO outlines nine therapeutic strategies (Forsyth et al., 2019) that describe how occupational therapy practitioners will interact with their clients to foster a client-centered and holistic relationship. The therapeutic strategies offered in this product include:

- **Validate:** The occupational therapy practitioner acknowledges the client's thoughts, feelings, emotions, and beliefs
- **Identify:** The occupational therapy practitioner recognizes specific factors related to participating in occupations that affect the client
- **Give feedback:** The occupational therapy practitioner shares their understanding of the client's situation or actions
- **Advise:** The occupational therapy practitioner offers recommendations, advice, and suggestions to clients
- **Negotiate:** The occupational therapy practitioner partakes in "give-and-take" or offers an alternative to clients
- **Structure:** The occupational therapy practitioner establishes a plan, sets limits, and creates ground rules with clients
- **Coach:** The occupational therapy practitioner demonstrates, guides, and instructs, clients verbally and/or physically on how to do an activity/occupation
- **Encourage:** The occupational therapy practitioner provides support, instills hope, gives advice and reassurance to clients
- **Provide physical support:** The occupational therapy practitioner uses their body to provide care or assistance to their clients

Goal

The goal of this four-part module is to provide occupational therapy practitioners who are practicing in hand therapy a quick guide to help them address the psychological factors that contribute to upper extremity pain by using psychological interventions with their clients.

Objectives

- Occupational therapy practitioners will be able to identify two “red flags” related to upper extremity pain as expressed by clients.
- Occupational therapy practitioners will identify two cognitive distortions related to upper extremity pain by the end of the session.
- Occupational therapy practitioners will be able to apply the MOHO component(s) of the person related to volition during treatment concerning upper extremity pain.
- Occupational therapy practitioners will apply at least one relaxation technique during a therapy session with their clients who are expressing psychological factors related to upper extremity pain.
- Occupational therapy practitioners will assist clients in choosing at least one relaxation technique to foster healthy habits and routines for managing their pain.
- Occupational therapy practitioners will integrate the skills learned from the four-part module into daily practice with clients who are expressing psychological factors related to upper extremity pain.
- Occupational therapy practitioners will apply elements of MOHO regarding the person, environment, and occupation to assist clients with engaging in occupations by addressing the psychological factors of pain.
- Occupational therapy practitioners will propose two to three healthy coping strategies that are appropriate for clients to implement in their daily life for pain management.



Module 1: The **Red** Flags of Pain



This module will help occupational therapy practitioners to identify the pain-related thoughts that would be considered a “red flag” related to upper extremity pain. There is a list of medically related red flags that the occupational therapy practitioner can use to identify the specific illnesses and conditions which contribute to upper extremity pain. This module focuses on the volitional components of MOHO that will be helpful to the occupational therapy practitioners in identifying red flags related to pain as demonstrated by clients in the therapy environment.

Module Objectives:

- Occupational therapy practitioners will be able to identify two “red flags” related to upper extremity pain as expressed by clients.
- Occupational therapy practitioners will be able to apply the MOHO component(s) of the person related to volition during treatment concerning upper extremity pain.

The Red Flags of Pain

Pain is both an emotional and behavioral response that influences the “red flags” due to persistent pain during the therapeutic process (Linton & Shaw, 2011). The red flags of pain are a list of common responses that clients have expressed regarding their pain experience. This list is to help occupational therapy practitioners identify similar red flags from clients and help them address the psychological factors of upper extremity pain.

🚩 *I cannot stop thinking about how much hurt and pain I am in.*

🚩 *Am I ever going to heal from this pain?*

🚩 *I don't enjoy doing things anymore with my friends and family.*

🚩 *I am so unmotivated to do anything.*

🚩 *When is the pain going to be over?*

🚩 *I am terrified of moving because it is going to hurt like hell!*

🚩 *Is it all in my head? Am I crazy?*

🚩 *I just want to numb the pain and not deal with this.*

🚩 *No pain, no gain! Am I right?*

🚩 *The doctor told me that I am always going to feel and have pain regardless.*

🚩 *This pain is brutal!*

🚩 *Can I get a new body part?*

🚩 *I feel super anxious using my arm because I know it is going to hurt.*

🚩 *I feel crippled by this pain.*

Additional Red Flags to look for:

🚩 *Alcohol/drug use*

🚩 *Night-time pain (Leerar et. al, 2007)*

🚩 *Weight loss (Leerar et. al, 2007)*

🚩 *Fevers/infections (Leerar et. al, 2007)*

🚩 *History of cancer (Leerar et. al, 2007)*

🚩 *History of trauma (Leerar et. al, 2007)*

Using the Model of Human Occupation (MOHO)

A client comes into therapy and states “I feel like I can no longer do anything anymore because my shoulder is just stuck and extremely painful! I have a catering business to run and my team needs me to be there. How can I even do work when the pain in my shoulder does not allow me to put on a shirt, have a good night’s sleep, let alone be able to bake my clients their favorite blueberry muffins! Don’t get me wrong, a little liquid courage and some painkillers and sleeping pills have been doing the trick for the past three months.” You have noticed the client walks into therapy smelling like alcohol.

Red Flags Identified:

1. Use of alcohol and other substances to cope with pain
2. Potential pain during the night
3. Client verbalizing that they can no longer do anything anymore

Examples of using the MOHO Therapeutic Strategies:

- *Validating* the client’s responses and feelings towards them not being able to carry out their daily work and life activities
- *Identifying* how the specific red flags related to the pain are affecting the client’s ability to engage in occupations and carry out their work and life activities/roles
- *Identifying* if other factors (sleep, substance use, etc.) may be related to the pain that is affecting the client to be able to carry out occupations
- *Encouraging* the client to continue to participate in work and life activities
- *Providing physical support* to the client in a time of need
- *Giving feedback or advising the* client that it is unacceptable for them to come to therapy under the influence as that is a safety concern for the client if they are driving and a safety concern for other clients and practitioners in the therapy environment; being direct with clients that may demonstrate this behavior and how it will affect their healing and pain
- *Structuring* the therapy environment by setting aside your personal biases of the client and being open-minded to what the client is expressing in regards to how pain has affected all aspects of their life

***The listed strategies are examples and other strategies may be implemented in addition to the abovementioned.

(Forsyth et al., 2019; Kielhofner, 2008)



Module 2: Restructuring Cognitive Distortions and Maladaptive Pain Thoughts



This module explains what cognitive distortions are and what they may look like in the clinic. Once cognitive distortions are identified, the occupational therapy practitioners will help clients become aware of those distortions and the relation between the thoughts, feelings, and associated behaviors to upper extremity pain. This module focuses on the volitional components of MOHO in terms of identifying thought distortions and how the motivational aspects influence negative thoughts when having pain. This module is a helpful guide for occupational therapy practitioners in educating their clients on how to restructure their pain-related thoughts and feelings.

Module Objectives:

- Occupational therapy practitioners will identify two cognitive distortions related to upper extremity pain by the end of the session.
- Occupational therapy practitioners will be able to apply the MOHO component(s) of the person related to volition during treatment concerning upper extremity pain.

Cognitive Distortions

Cognitive distortions are “faulty or inaccurate thinking, perceptions, or beliefs” (American Psychological Association [APA], 2022). These thoughts are negative and irrational, and they affect what clients feel, think, and do when engaging in occupations (Forsyth et al., 2019). Many clients experience at least some negative thoughts and distortions. However, in extreme cases, these thoughts can become harmful to clients. Below are ten different cognitive distortions that occupational therapy practitioners can identify in clients expressing pain-related distortions.

How can you change distorted thinking?

The occupational therapy practitioner can change distorted thoughts by cognitive restructuring. Cognitive restructuring focuses on identifying negative and maladaptive thoughts and adapting those thoughts into positive and healthier thoughts (Wegener et al., 2022). There are multiple ways that the occupational therapy practitioner can implement this strategy with clients. Cognitive restructuring strategies include positive self-talk/statements, coping strategies, and creating healthier and positive thoughts to replace negative thoughts (Wegener et al., 2022).

Common Cognitive Distortions and Restructuring Thoughts

Cognitive Distortions	Example of Distorted Thoughts	Cognitively Restructured Thoughts
<u>Catastrophizing:</u> seeing the worst in everything (Rnic et al., 2016)	“If I can’t get rid of this god-awful pain, I will never be able to live my life again.”	“I know that I will have pain, but I know that they are ways for me to manage it and still be able to do the things I like.”
<u>All – or – nothing:</u> viewing situations in absolutes without looking at the whole picture (Rnic et al., 2016)	“I will always have pain; I will never be able to live a life pain-free. Every time I do something that I enjoy, I end up tearing up because of how bad my pain is in my elbow.”	“I need to look at the whole picture. I can make changes in my life that will allow me to enjoy my activities. Sometimes, a give-and-take is what I need to be successful.”
<u>“Should” Statements:</u> thinking that things should be a certain way (Rnic et al., 2016)	“I think that I should be able to go bowling after my rotator cuff surgery. I even graduated from wearing the sling. I am 2 months out; I should be fine. If anything, I feel a little pain with throwing down the ball. Shouldn’t be too bad.”	“I should listen to my body and not do anything that will further harm and prolong my recovery.”

Disqualifying the positive: ignoring the positive things that happen (Rnic et al., 2016)

“My OT tells me that I am doing extremely well in therapy, my range of motion has improved significantly, that I barely have any pain with movement. However, she says that I am weak even with the improvements I am making. Great, now I will never make the football team because my shoulders are weak. I need a good arm to throw.”

“I have been making good progress. Yes it’s slow, compared to where I was on the first day to now, it’s amazing what I can do.”

Emotional reasoning: when emotions interfere with thinking and feeling (Rnic et al., 2016)

“I feel like the pain in my wrist is really affecting me, and I feel like I am not a good mom because I can’t take care of my baby without feeling like my wrists are on fire.”

“I am a good mom. Oftentimes, I feel bad that I am being selfish. But I need to put myself first so I can be there for my child. I can always ask for help.”

Personalization: when they think they are responsible for everything (Rnic et al., 2016)

“My boss is always upset. She would be fine if I could do more to help her even if my wrists felt like they were going to fall off.”

“If I need to take off some time from work to let my wrist heal, I will do it. I can always ask for accommodations at work and even work from home. I am sure that my boss would be fine with the time that I need to recover.”

Overgeneralization: making assumptions that the cause of a negative situation will lead into other negative situations (Rnic et al., 2016)

“Last week I couldn’t go to practice because I tweaked my shoulder on the balance beam. Now coach will not put me in till I get cleared from my doctor and the trainer. Then I will not be able to compete because it is going to take a long time.”

“Coach is looking out for me. He told me about what happened to the senior last year with her shoulder. I don’t want to put that on coach and take his advice about my injury.”

Mind-reading: assuming that people are thinking poorly of you (Rnic et al., 2016)

“My OT is probably thinking that I am not going to return to work if I cannot do a kettlebell overhead raise without struggle!”

“My OT has been awesome and encouraging throughout my healing process. The OT always had faith in my abilities. If it weren’t for her I wouldn’t be where I am right now.”

Labeling: focusing on one negative detail/situation and applying it to the whole person (Rnic et al., 2016)

“Ever since I took a fall on my wrists while mountain biking, I will never get back to biking or even be qualified to do it because of my wrists.”

“Everyone in sports gets injured; that is just part of the role. I can still ride my bike and take some time for my wrist to heal.”

Mental filtering: focusing on the negative (Rnic et al., 2016)

“Great, how am I supposed to open my favorite jar of salsa with all of this arthritis and thumb pain?”

“I can always use the automatic jar opener. Duh! I guess I just wanted to be independent and not rely on machines. But this takes out the stress of using my hands and I can get to my salsa quicker!”

*** An additional resource that the occupational therapy practitioner can use for identifying cognitive distortions and cognitive restructuring can be found here:

<https://www.therapistaid.com/about>

The creator of this site is a Licensed Mental Health Counselor based out of Florida with experience in treating clients in community mental health centers. The creator of this site produced and shared this resource for practitioners that is easy to use, accessible, and not filled with heavy medical jargon that will be useful in conversing with clients.

Using the Model of Human Occupation (MOHO)

A client you have been working with has had arthritis in his right hand for quite a long time. He is an avid outdoorsman and a retired pilot. He loves to fly his plane, flyfish, camp, hike, and hunt. Spring is around the corner and this client of yours is itching to get outside! However, he tells you that he has noticed that doing mundane housework like cleaning out the gutters or opening his favorite jar of salsa has been nearly impossible due to the excruciating pain in his hand. He expresses that he is fearful of gripping anything because it might slip out of his hands. He tells you that he has been feeling depressed about the pain in his hand. "I want to go fly fishing! I cannot just stay put at home all day, and I feel that my life serves no purpose if I cannot do what I love to do without having to think about the pain! I am letting myself and my grandkids down. I know that I am making progress, but sometimes it is not enough for me to be happy. I feel that pain is going to be there regardless."

Cognitive distortions identified:

1. All-or-nothing → "I feel that pain is going to be there regardless."
2. Disqualifying the positive → "I know that I am making progress, but sometimes it is not enough for me to be happy."
3. Emotional reasoning → "I feel that my life serves no purpose if I cannot do what I love to do without having to think about the pain!"

Examples of using the MOHO Therapeutic Strategies:

- *Validating* the emotions, thoughts, and feelings that the client is currently experiencing concerning pain
- *Structuring* the therapy environment that will bring the client ease and comfort; being cognizant of verbiage regarding pain
- *Giving feedback* to clients through restructuring pain-related thoughts and turning them into positive words that will influence their experience and likelihood of re-engaging in occupations
- *Identifying* triggering pain distortions that alter the client's view on occupations
- *Encouraging* the client to continue participating in occupations that are of interest to them even when the client feels discouraged due to pain
- *Encouraging* the client to pause and reflect on why distorted thoughts are preventing them from occupations and encourage the client to continue engagement in occupations

***The listed strategies are examples, and other strategies may be implemented in addition to the abovementioned.

(Forsyth et al., 2019; Kielhofner, 2008; Rnic et al., 2016)



Module 3: Relax Away the Pain



This module will focus on relaxation techniques for clients with anxiety, worry, and a heightened concern involving their pain. The goal of completing relaxation techniques with clients is to decrease the pain sensations and increase their beliefs of being able to cope with their pain. This module lists numerous relaxation techniques that the occupational therapy practitioner may implement and suggest to clients to help reduce pain.

This module focuses on the habituation, environmental, and performance capacity components of MOHO (Forsyth et al., 2019). When clients implement relaxation interventions into everyday practice, they create healthy habits and routines for themselves to manage their pain. By forming these healthy habits and routines, clients will start to intuitively care for themselves, feel organized, and complete a familiar task (Forsyth et al., 2019). The environment should allow the client to be in a state of calm to complete the relaxation techniques of their choice.

Module Objectives:

- Occupational therapy practitioners will apply at least one relaxation technique during a therapy session with their clients who are expressing psychological factors related to upper extremity pain.
- Occupational therapy practitioners will assist clients in choosing at least one relaxation technique to foster healthy habits and routines for managing their pain.

Relaxation techniques have been known to be effective and helpful for clients in managing their pain. Occupational therapy practitioners can incorporate the relaxation techniques in conjunction with treating physical aspects such as completing soft tissue mobilizations, prescribed exercises, and complete desensitization techniques with clients, to name a few. Along with the steps that clients take to manage their pain, the following relaxation techniques may be resourceful and helpful with pain management for clients.

Progressive Muscle Relaxation (Centre for Clinical Interventions, 2019)

- <https://www.cci.health.wa.gov.au/-/media/CCI/Mental-Health-Professionals/Panic/Panic---Information-Sheets/Panic-Information-Sheet---05---Progressive-Muscle-Relaxation.pdf>

Diaphragmatic breathing (Harvard Medical School, 2016)

- <https://www.health.harvard.edu/healthbeat/learning-diaphragmatic-breathing>

Guided Imagery (Burgess et al., 2019)

- <https://wa.kaiserpermanente.org/kbase/topic.jhtml?docId=uz2270>

Visualization (Johns Hopkins Medicine, 2022)

- <https://www.hopkinsmedicine.org/health/wellness-and-prevention/imagery>

*** After completing the relaxation technique(s), the client should feel relaxed, relieved of muscle tension and pain.

Tip for clients: Completing relaxation techniques takes time to learn, so it would be beneficial for clients to engrain the techniques in their everyday occupations. The more the client practices, the more natural it will be to complete these techniques. They will feel less stressed and have a decrease in pain. This will encourage clients to engage in their desired occupations such as work, sleep, leisure, etc., and now that pain has reduced, they are feeling more relaxed!

Using the Model of Human Occupation (MOHO)

A client comes in reporting excruciating pain of her left thumb. She reports that she was walking her dog, when suddenly she lost control of the leash, and the dog bit her thumb. The client rushed to urgent care for her thumb. She had not seen a hand surgeon since the day of the accident after getting stitches. You have been noticing that when this client walks into the clinic, she guards her left hand closely and her shoulders are up to her ears. You look at her thumb and notice that scar adhesions have started to form, and the slightest touch on the incision around her thumb makes her cringe. She reports that she has not been able to sleep and use her left thumb/hand to complete her daily activities. When you try to move her thumb, she is ready to jump out of her seat. The rice bin has been her sworn enemy.

Relaxation techniques that can be implemented:

1. Diaphragmatic breathing while you are completing passive motion or therapy exercises
2. Guided imagery while completing sensory desensitization techniques
3. Visualization while completing soft tissue mobilization, scar mobilization, and passive movement to the thumb

Examples of using the MOHO Therapeutic Strategies:

- *Structuring* the environment so that it will bring a sense of calm and relaxation for the client, such as going into a quiet therapy room
- *Advising* the client about modifications that can be made (home, school, work, etc.) to create space to complete relaxation techniques if feasible *Encouraging* the client to make modifications to the environment that will be helpful for them to complete the relaxation techniques
- *Coaching* the client on different ways to complete relaxation techniques by altering body positions that won't further exacerbate pain symptoms
- *Encouraging* the client to sustain new habits and routines that have been learned and having the client complete relaxation techniques when not in therapy
- *Providing physical support* to the client when needed

***The listed strategies are examples, and other strategies may be implemented in addition to the above mentioned.

(Forsyth et al., 2019; Kielhofner, 2008)



Module 4: Learning to Accept Living with Pain



This module emphasizes how clients will learn to accept living with pain. This module consists of healthy coping strategies that clients can implement in their daily life while they manage their pain. This module focuses on all the core components of MOHO, the person, environment, and occupation (Forsyth et al., 2019). The questions that the occupational therapist will need to keep in mind with this module are:

- How has pain affected the client's motivation, habits, roles, and routines?
- How will clients interact in physical and social environments while in pain?
- How has pain affected the client's skills, abilities, and performance to engage in occupations, and how has pain affected their identity by doing, thinking, and feeling?
- How will clients cope with chronic pain and what will participation in occupations look like?

Module Objectives:

- Occupational therapy practitioners will propose two to three healthy coping strategies that are appropriate for clients to implement in their daily life for pain management.
- Occupational therapy practitioners will apply elements of MOHO regarding the person, environment, and occupation to assist clients with engaging in occupations by addressing the psychological factors of pain.

Living with pain is both physically and mentally stressful and exhausting. Living with constant discomfort and pain can lead to clients feeling anger and frustration (APA, 2011). Clients may not be aware of the negative coping strategies they use and may need help finding and using healthy coping strategies. Below is a list of coping strategies that occupational therapy practitioners can recommend to clients as a form of pain management. Clients can use as many coping strategies as they like. Mental and emotional health is important for clients who experience pain in such depths. Therefore, these coping strategies teach clients the skills needed for managing pain.

Healthy Coping Strategies

- **Take care of your body (Centers for Disease Control and Prevention [CDC], 2021)**
- **Work out/physical activity**
- **Make sure you get enough sleep**
- **Avoid using substances and drinking alcohol (Cairney et al., 2014)**
- **Eat a nutritious and healthy diet**
- **Give your body a break**
- **Practice deep breathing (diaphragmatic breathing) (Ma et al., 2017)**
- **Drink a hot cup of tea (Dietz & Dekker, 2017)**
- **Partake in meditation and mindfulness (Shankland et al., 2020)**
- **Practice religion or praying (Braun, 2021)**
- **Be out in nature**
- **Listen to or play soothing music**
- **Read a good book**
- **Give yourself positive affirmations/self-talk**
- **Be around and talk with friends and family**
- **Write in a journal**
- **Practice gratitude**
- **Take a moment to reflect**

(Braun, 2021; CDC, 2021)

Using the Model of Human Occupation (MOHO)

You have a client you've been seeing for a few months for her elbow. This client hurt her elbow due to a tennis injury. She's been having pain in her elbow for over a year. She has tried everything from dry needling, acupuncture, and kinesiotaping, and exhausted all options. The thought of surgery is off-limits as she doesn't want to be "cut open." She has not been playing tennis or engaging in any physical activity. She has reported feelings of depression and anxiety listed in her medical history. She has isolated herself from her family and friends. She has been sleeping all day and barely steps foot outside. She states that doing anything hurts her elbow. She is not much of a drinker. Lately, she has been going out to bars alone and eating out. She almost feels going to therapy is not worth going to anymore because of the pain. She feels she doesn't know what to do anymore because all she ever knew was playing tennis.

Coping Strategies that can be implemented:

1. Avoid alcohol consumption
2. Try going out for a walk
3. Implement a healthy diet
4. Practice meditation/mindfulness
5. Write in a journal
6. Listen to music
7. Be out in nature

Examples of using the MOHO Therapeutic Strategies:

- *Validating* the challenges of coping with pain, how pain affects the client's role(s), and how certain things can bring upon thoughts, feelings, and emotions related to pain
- *Advising* the client to explore and try various coping strategies that will help them to manage their pain
- *Identifying* healthy coping strategies that work best for the client regarding pain management
- *Identifying* various ways that a new social environment(s) can support engagement in occupations for the client
- *Structuring* the therapy environment that will support the client to inherit coping skills that will turn into new habits and restore roles concerning pain
- *Structuring* therapeutic interventions to allow the client an opportunity to mimic and simulate characteristics and behaviors related to the role (ex: Tennis-related activities)
- *Providing physical support* to the client when needed
- *Encouraging* the client to continue participating in interests, be consistent with using coping strategies, and build healthy and new habits even when the client feels discouraged due to pain

***The listed strategies are examples, and other strategies may be implemented in addition to the abovementioned.

(Forsyth et al., 2019; Kielhofner, 2008)

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