ENHANCING OCCUPATIONAL PERFORMANCE OUTCOMES FOR INDIVIDUALS WITH ORTHOPEDIC INJURIES THAT INCLUDES PSYCHOSOCIAL WELL-BEING CONSIDERATIONS IN OCCUPATIONAL THERAPY

by

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APPROVAL

This Scholarly Project Paper, submitted by Tyler Stecher, OTDS, in partial fulfillment 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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PERMISSION

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ABSTRACT

Approximately one-third of people who sustain any type of acute orthopedic injury experience depression, one-quarter experience post-traumatic stress disorder (PTSD) and up to one-half have anxiety up to 10 years after the initial injury (Breazeale et al., 2021; Muscatelli et al., 2017). These psychosocial factors can have negative impacts on clients' everyday life and occupations such as participation in social activities, return to work, and limit independence in daily activities (Vincent et al., 2018). Occupational therapists are often responsible for evaluating and providing intervention for individuals with upper extremity orthopedic injuries; more than 85% of certified hand therapists are occupational therapists (Hand Therapy Certification Commission, n.d.). Providing holistic care to clients through interventions for both mental and physical health demonstrates the unique view occupational therapy brings to the orthopedic setting and how occupational therapists can aid in increasing individual's performance range (Dunn, 2017; Ikuigu, 2017). While occupational therapists are able to address psychosocial needs of clients, they are not always the main priority with orthopedic injuries. The benefit of addressing both physical and mental health following orthopedic injuries is continuously being studied to gain further information on best-practice in the area (Archer et al., 2022). With the practice gap between physical health and mental health rehabilitation in the field of orthopedic OT, a need to bridge that gap has emerged with a focus on implementation of both mental and physical interventions (Archer et al., 2022).

The purpose of this project was to build a product to facilitate enhancing occupational performance outcomes for individuals experiencing upper extremity orthopedic injuries through the implementation of interventions targeting psychosocial factors in conjunction with orthopedic interventions in an outpatient occupational therapy setting, specialized in hand therapy. I partnered with occupational therapists, certified in hand therapy, at an outpatient orthopedic clinic in an urban town that serves both urban and rural populations. This aided in completion of a needs assessment to learn about the client population, client needs, current clinic needs, and educational experience to further inform the creation of the product. A literature review and an on-site needs assessment were conducted to guide the project's development and build a useful product based on existing literature paired with community need. A literature review was conducted using journal articles from the Cumulated Index to Nursing and Allied Health Literature (CINAHL), PubMed, Google Scholar, OT Seeker, Substance Abuse and Mental Health Services Administration (SAHMSA), Center for Disease Control and Prevention (CDC), American Occupational Therapy Association (AOTA), UND Scholarly Commons, and American Society of Hand Therapists (ASHT). Key terms included *Occupational therapy, upper extremity, lifestyle redesign, Complex regional pain syndrome, mental health, orthopedic injuries, hand therapy, model of human occupation, ecology of human performance, and orthopedics*. The information gathered from the literature review aided in the identification of the problem statement, demonstrating an increased need for addressing psychosocial factors in the orthopedic setting. The theory used to guide the creation of the product was the Ecology of Human Performance (Dunn, 2017). The Ecology of Human Performance is an ecological model within the occupational therapy profession that focuses on the interaction between the person, their contexts, the tasks available within their contexts, and how those interactions influence the person's performance range (Dunn, 2017). The theory was used with the facets of the model in mind, working to address and enhance client performance range through increased task availability, the client's contexts in which they participate in, and looking at all aspects of the person highlighted by the Ecology of Human Performance (Dunn, 2017).

The completed product consists of a compilation and education on various mental health screening tools, a constructed tip sheet consisting of evidence-based occupational therapy interventions for psychosocial well-being to implement into the orthopedic setting, and a referral resource for continued mental health care specifically for the surrounding community. The product is intended to positively impact clients working with outpatient occupational therapists treating upper extremity orthopedic injures as to guide occupational therapy intervention planning for holistic care of clients. This addresses the stated problem as implementation of physical and mental health interventions are suggested with the use of the created product.

Keywords: psychosocial, mental health, upper extremity orthopedic injuries, anxiety, depression, post-traumatic stress disorder

CHAPTER I

INTRODUCTION

Chapter I Introduction consists of an introduction to the problem being addressed throughout this project. It addresses the intended population for who this project was created and informs clinicians about the contents of this chapter. The purpose and intent of the project is explained as to give an overview of the final product. The theoretical framework used to guide the literature review and full product is also stated. Finally, included at the end of Chapter I Introduction are key terms that are used throughout the entirety of the project.

Individuals diagnosed with upper extremity orthopedic injuries are at risk for experiencing decreases to their performance range as between 30-60% of these individuals will suffer from some form of depression, anxiety, or post-traumatic stress disorder (PTSD) (Breazeale et al., 2021; Dunn, 2017; Muscatelli et al., 2017). With occupational therapy being a profession focused on holistic care of clients, addressing both mental and physical symptoms is important for providing the appropriate level of care. The influence that mental and physical health have on client performance range can be further decreased following injury or diagnoses associated with mental or physical health (Dunn, 2017; Vincent et al., 2018). The increasing demand to address both physical and psychological needs of clients in the orthopedic setting demonstrates a gap to bridge in healthcare (Archer, 2022).

The targeted population for this project includes clinicians practicing in an orthopedic setting, focused on upper extremity diagnoses. The client population includes any individuals that may be receiving services in the orthopedic setting. The clinician and client population were chosen due to the advanced clinical practice placement in an orthopedic setting, focused on

upper extremity diagnoses as well as the clinics need for care integrating both mental and physical interventions into occupational therapists' practice.

After the completion of a thorough literature review, looking at current evidence on the need of integrative care, it was apparent that the prevalence of anxiety, depression, and PTSD is higher in the orthopedic setting following an upper extremity orthopedic injury. The purpose of this project was to build a product to facilitate enhancing occupational performance outcomes for individuals experiencing upper extremity orthopedic injuries through the implementation of interventions targeting psychosocial factors in conjunction with orthopedic interventions in an outpatient occupational therapy setting, specialized in hand therapy. Provided below is a detailed description of the product and its associated parts for increasing client performance range (Dunn, 2017).

The Ecology of Human Performance model was used to guide the literature review and creation of the product. The Ecology of Human Performance is an ecological model within the occupational therapy profession that focuses on the interaction between the person, their contexts, the tasks available within their contexts, and how those interactions influence the person's performance range (Dunn, 2017). The theory was used with the facets of the model in mind, working to address and enhance client performance range through increased task availability, the client's contexts in which they participate in, and looking at all aspects of the person highlighted by the Ecology of Human Performance (Dunn, 2017).

Chapter II Literature Review provides an extensive literature review starting with an overview of the occupational therapy profession, theoretical basis that guided the creation of the finished product, guidelines for practice of occupational therapy with physical and mental health, and bridging the gap between the two areas of practice. Chapter III Methodology outlines the

procedures used for the development of the final product. Chapter IV Product provides an overview of sections of the full product. Lastly, Chapter V Summary provides a synopsis of the product, strengths and limitations, suggestions for further research, recommendations for use, and a final conclusion.

Key Terms

The subsequent terms are used frequently throughout the remainder of this project. In order to ensure accurate and consistent understanding of the terms, definitions of each term are provided.

Acute: Injuries that happen abruptly or unexpectedly, or an injury that is in the early stages Garrick, 2017; Venes & Taber, 2021).

Anxiety/anxiety disorders: Anxiety and anxiety disorders can be defined by two main factors: excessive worrying and anxiety (Davis & Noyes, 2019). An emotion or emotional stated identifiable by increased tension or other somatoform-like symptoms where one expects pain, danger, or disaster (American Psychology Association, 2022).

Chronic: Injuries that have a long onset, developing from overuse or just overtime (Garrick, 2017; Venes & Taber, 2021).

Depression: Defined as one or more instances of a major depressive episode which is commonly referred to as clinical depression (Tse & Spangler, 2019). “A negative affective state, ranging from unhappiness and discontent to an extreme feeling of sadness, pessimism, and despondency, which interferes with daily life. Various physical, cognitive, and social changes also tend to co-occur, including altered eating or sleeping habits, lack of energy or motivation, difficulty concentrating or making decisions, and withdrawal from social activities” (American Psychology Association, 2022, para. 1).

Holism: The philosophy that individuals function as comprehensive units, they cannot be broken down to separate parts (Venes & Taber, 2021).

Holistic medicine: A specific field or philosophy that encompasses working to address physical, mental, and spiritual aspects of caring for clients and meet their specific needs (Gordon, 2019; Venes & Taber, 2021).

Inpatient: Clients with severe symptoms that need to be monitored by health professionals, normally in a hospitalized setting, requiring a high level of care to address their psychiatric symptoms, distress levels, and appropriate coping strategies (Mahaffey, Dallas, and Muñoz, 2019).

Mental health: "A state of mind characterized by emotional well-being, good behavioral adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life" (American Psychology Association, 2022, para. 1). A culmination of emotional, psychological, and social well-being (Center for Disease Control and Prevention [CDC], 2021).

Narrative medicine: Medical practice consisting of a combination of humanities, arts, clinical practice, and healthcare incorporated into the clients' care (Taylor, 2008).

Occupations: Everyday life activities that one does and the meaning that they hold to an individual; including anything the client may want to do, need to do, or are expected to do within their daily lives. (American Occupational Therapy Association [AOTA], 2020).

Outpatient: The least restrictive settings for care, an outpatient setting has the client coming into a clinic or hospital setting to receive a treatment or therapy and then leaving the facility once that session is completed (Mahaffey, Dallas, and Muñoz, 2019).

Partial hospitalization program (PHP): Partial hospitalization programs (PHP) are in between inpatient and outpatient care. Clients can participate in a PHP if you do not need to be monitored 24/7 by health care professionals but need more comprehensive attention than outpatient care can provide. Clients receive treatment throughout the day and go home at night. Therapy sessions are structured that will be less structured than inpatient programs, allowing more freedom from clients (Mahaffey, Dallas, and Muñoz, 2019).

Physical health: Defined as the relation to the body or bodily functions (Venes & Taber, 2021).

Post-traumatic stress disorder (PTSD): Defined by a strong psychological stress due to disturbing memories, repetitive fears, and feelings of vulnerability or defenselessness following a traumatic event (Champagne, 2019; Venes & Taber, 2021). "A disorder that may result when an individual lives through or witnesses an event in which he or she believes that there is a threat to life or physical integrity and safety and experiences fear, terror, or helplessness" (American Psychology Association, 2022, para. 1).

Psychological factors: "Functional factors that contribute to the development of personality, the maintenance of health and well-being, and the etiology of mental and behavioral disorder" (American Psychology Association, 2022, para. 1). Those relating to the brain, its function, and the relationship involving to the mind (Venes & Taber, 2021).

Psychosocial factors: "Social, cultural, and environmental experiences that impact mental health and an individual's behaviors; including various social settings and relationships (American Psychology Association, 2022). Those that consider psychological and social aspects of the person (Venes & Taber, 2021).

Rural: The entire population, housing, and land not contained within an urbanized area or urban cluster. The rural portion of the United States includes a wide array of communities, from tightly

packed small towns and sizable housing developments on the edges of urban areas, to sporadically populated and secluded regions (Ratcliffe et al., 2016).

Stress: A state of tension causing anxiety, worrying, or other physical, psychological, or physiological factor that disrupts one's life balance (Champagne, 2019; Venes & Taber, 2021). Acute stress is that that is short lived, chronic stress is repeated and long enduring stress responses, and traumatic stress can arise following experience of a traumatic event which triggers stress as a coping mechanism. (Champagne, 2019).

Theory: Scientifically acceptable tenets, or a set of tenets recommended to justify phenomena (Cohn & Coster, 2019).

Traumatic: Injuries caused by a sudden, external force that injures a part of the body (Venes & Taber, 2021).

Urban/urbanized areas: A population of 50,000 or greater, "Urban Clusters" are areas with a population between 2,500 but less than 50,000 (Ratcliffe et al., 2016). For an area to be considered urban, the population density of the given area must be 1,000 people per square mile (Ratcliffe et al., 2016).

CHAPTER II

LITERATURE REVIEW

Chapter II Literature Review consists of discussion on a general overview of occupational therapy and the professions' role in upper extremity orthopedics and mental health along with the theoretical basis used to guide the literature review and the creation of the final product being reviewed. The psychosocial considerations for people with upper extremity orthopedic injuries are described, occupational therapy guidelines for collaborative care of individuals experiencing upper extremity orthopedic injuries and evidence-supported mental health interventions, and lastly bridging the gap between physical and mental care of clients.

A literature review was conducted to guide development of a product for an outpatient orthopedic clinic in an urban area; population greater than 50,000, that serves the rural areas surrounding; any area that is outside of the urban population parameters (Flood, 2019). The purpose of this product was to facilitate the implementation of psychosocial and physical interventions from an occupational therapy (OT) standpoint, focusing on the population experiencing upper extremity orthopedic injuries and how those diagnoses may influence one's mental health. This baseline idea formed the foundation of the literature review and the research gathered for further understanding of the facets of OT in an orthopedic setting with implementation of mental health practices. Mental health can be defined as emotional well-being, good behavioral adjustment, relative freedom from disabling symptoms of mental illness, and the ability to form healthy relationships and manage ordinary life challenges and pressures (American Psychology Association, 2022). To further understand the need, an understanding of what OT is, occupational therapists' role in the fields of upper extremity orthopedics and mental

health, bridging the gap between these two areas of practice, and the theory guiding the literature review and product development.

The defining factor of OT is the focus on client occupations as a means of recovery and use for intervention (Johnson & Dickie, 2019). Occupations are defined as everyday life activities that one does and the meaning that they hold to an individual; including anything the client may want to do, need to do, or are expected to do within their daily lives. (American Occupational Therapy Association [AOTA], 2020). Occupational therapists can work in a wide array of settings and a variety of different populations; this includes ages 0-99+ years, individuals diagnosed with chronic illnesses, newborns in the neonatal intensive care unit, children with behavioral or sensory deficits, individuals recovering from orthopedic injuries or surgeries, and numerous other settings or populations (Bureau of Labor Statistics [BLS], 2022). Occupational therapists' role in these settings focuses on the implementation of one's valued occupations to aid in recovery and use in the intervention process (AOTA, 2020).

Using individualized interventions that implement valued occupations of the clients who are engaging in occupational therapy services allows occupational therapists aid in increasing client performance range and participation in daily activities, staying true to the profession of OT (Christiansen & Haertl, 2019). The evaluation process does not differ based on client age or diagnosis, rather focuses on learning about the individual and what is important to them at that stage of life (AOTA, 2020). For children, this may be more emphasis on play-based interventions whereas adults may be focused on a return to work or completion of activities of daily living (ADLs) (AOTA, 2020). The rehabilitation process is on-going, as a practitioner is always evaluation, treating, or re-evaluating clients based on client's needs and current abilities as they progress or digress through therapy (AOTA, 2020). The evaluation, intervention, and re-

evaluation processes can be driven by a number of factors, including the model that the OT practitioner implements and setting.

A population with which occupational therapists may work are individuals recovering from upper extremity orthopedic injuries, surgeries, or various diagnoses regarding the musculoskeletal system (Roll & Hardison, 2017). Interventions for clients experiencing upper extremity orthopedic injuries include edema management, increasing or aiding in range of motion, active stretching, passive stretching, progressive strengthening, endurance training, energy conservation, ADL training, and education of body mechanics all with the focus of regaining independence or continued participation in desired occupations (Fabrizio & Rafols, 2014). OT plays a crucial role in rehabilitation of these individuals as countless people experience some form of orthopedic injury or injuries every year with approximately seven million people per year receiving some kind of medical treatment for their orthopedic diagnosis (Jarman et al., 2020). These individuals ages range anywhere from 1 year of age to 65 years or older with a variety of injury and diagnoses (Jarman et al., 2020).

Injuries can be classified in a number of ways. One way to identify an injury is through the identification of the cause being traumatic; injuries that are caused by a sudden, external force to the body (Venes & Taber, 2021). Diagnoses can also be defined as either acute or chronic. Acute injuries are those that happen abruptly or unexpectedly, or an injury that is in the early stages (Garrick, 2017; Venes & Taber, 2021). Chronic injuries are those that have a long onset, developing from overuse or just overtime (Garrick, 2017; Venes & Taber, 2021). Common upper extremity orthopedic injuries include different types and combinations of traumatic, acute, and chronic diagnoses; including various kinds of bone fractures, tendinitis, bursitis, muscle sprains or strains, dislocations, arthritis, and numerous soft-tissue injuries

(Garrick, 2017). The influence that these injuries can have on occupations such as work, self-cares, or leisure activities, may be one of the reasons someone is referred or seeking OT services following an upper extremity orthopedic injury (Roll & Hardison, 2017).

There are also a wide range of mental health diagnoses that can affect an individual's daily life following upper extremity orthopedic injuries; with a focus on anxiety, depression, and PTSD (Cochrane et al., 2020). Anxiety disorders can be defined by two main factors: excessive worrying and anxiety (Davis & Noyes, 2019). Often, excessive worrying and anxiety are co-occurring, however fear is described as the emotional response following a perceived threat and anxiety is the anticipation of future danger (Davis & Noyes 2019). Signs and symptoms of increasing anxiety or anxiety symptoms include increased restlessness, irritable, difficulty concentrating, unexplained pains, difficulty controlling feelings of worry, sleep difficulties, increased/pounding heart, trembling, and feelings of loss of control (National Institute of Mental Health [NIMH], 2022). Being aware of the signs and symptoms that clients may experience with increased anxiety can help occupational therapists to provide the appropriate level of care. The anxiety disorders referred to within this literature review are generalized anxiety disorder and panic disorder.

Depression is an all-encompassing term for a wide array of different, mood related diagnoses, with depression being a general term for overall lowered or saddened mood (American Psychology Association, 2022). Knowing the signs and symptoms, the complexity, and diversity of clinical depression can assist clinicians in gaining insight into how much it can influence an individual's performance range (Dunn, 2017). The most common mood disorder, major depressive disorder, is defined as one or more instances of a major depressive episode which is commonly referred to as clinical depression (Tse & Spangler 2019). Signs and

symptoms of depression include increased irritability, persistent sadness, feelings hopeless, feelings of helplessness, loss of interest in priorly enjoyed activities and occupations, decreased energy, difficulties falling asleep or oversleeping, increased lethargy, concentration difficulties, undereating or overeating, or thoughts of suicide (NIMH, 2018). Being cognizant of these symptoms and when clients may be exhibiting or reporting increased feelings of depression allows the therapist to approach the topic and provide comprehensive care or refer the client somewhere that can help.

Post-traumatic stress disorder is defined by strong psychological stress due to disturbing memories, repetitive fears, and feelings of vulnerability or defenselessness following a traumatic event (Champagne, 2019; Venes & Taber, 2021). Traumatic events can include wartime injuries, motor vehicle accidents, gunshot or hunting injuries, assault, natural disasters causing injury or many others. With a variety of diagnoses and the affects they can have on an individual's daily life, occupational therapists are equipped with the tools to aid in rehabilitation of a diverse population (Christiansen & Haertl, 2019). The complexity of PTSD as well as its signs and symptoms demonstrate an added challenge for clinicians to be aware of possibility of clients experiencing PTSD and how to best care for them. The signs and symptoms of PTSD include flashbacks of the traumatic event, bad dreams, frightening thoughts associated with the event, avoidance of things or places that remind the client of the traumatic event, being easily startled, increased feelings of being tense, difficulty sleeping, anger outbursts, trouble recalling the traumatic event, increased negative thoughts, distorted feelings of guilt or blaming self, and loss of interest in priorly enjoyable activities and occupations (NIMH, 2019).

The nature of OT aligns the profession with holistic medicine, working to address physical, mental, and spiritual aspects of caring for clients and meet their specific needs

(Gordon, 2019; Venes & Taber, 2021). The aim to emphasize the uniqueness of each client facilitates the importance of individualized care from the occupational therapist and the holistic approach that OT takes in person-centered, client-driven care, throughout the evaluation and intervention process (Gordon, 2019; Johnson & Dickie, 2019). The evaluation process includes addressing the psychological, physical, psychosocial, family, spiritual, environmental as well as biological dimensions of client health, well-being, and illness (Gordon, 2019). The need for evaluating all aspects of the person is demonstrated by a study from Allen and Kelly (2014); without addressing both mental and physical factors, there is decreased possibility that the client will return to full function and prior performance range. This further reinforces that, whether it be orthopedics, behavioral health, acute care, inpatient or outpatient rehabilitation, the holistic nature of OT and the driving factor of tailored interventions for each client is important for increasing client performance range (Dunn, 2017). This approach may also influence the choice of practice model an occupational therapist would chose (AOTA, 2020).

Theoretical Basis

Theories or models are used within OT practice as to aid in the guidance of client-service provision. Occupational therapy often uses ecological models that focus on the relationship between clients and their contexts. Theories may focus directly on the person or client and motivating factors that can aid in participation of daily activities or in therapy sessions to regain function (Ikiugu et al., 2017).

The Ecology of Human Performance (EHP) is an OT model that emphasizes four principles; the person, the person's context, available tasks, how those influence one another to influence one's performance range, and intervention strategies that can be utilized as they exemplify the complexity of the model (Dunn, 2017). When an occupational therapist uses EHP

to guide evaluation and intervention planning, the client is seen as a complex individual, considering their individual past and present experiences, values and interests, and person factors (sensorimotor, cognitive, and psychosocial skills) (Dunn, 2017). Psychosocial factors are social, cultural, environmental, and personal factors that influence both mental health and individual behavior (American Psychology Association, 2022; Dunn, 2017). The nature of EHP is ecological and, therefore, context is emphasized. The context consists of an individual's physical, temporal, cultural, and social aspects (Dunn, 2017). The physical context refers to both natural and fabricated objects within one's environment (Dunn, 2017). The temporal context includes chronological age, stage of development in life, life cycle, and current health status (Dunn, 2017). The social context includes aspects of family, friends, organizations, and any other groups the person associates with (Dunn, 2017). The cultural contexts include religious, ethnic, or other organizations influencing the person's identity (Dunn, 2017). Performance relating to occupations occur when an individual participates in any tasks within a given context, their performance range is then the amount and types of tasks available to the individual based on the relationship between the person's factors and the contextual variables (Dunn, 2017). In EHP, an emphasis on availability of tasks to individuals to achieve one's highest performance range is used to determine the level of engagement in valued activities the person may have (Dunn, 2017). If one area is lacking, such as aspects of the person like depression, anxiety, or PTSD affecting a person's ability to participate in a task, this can negatively influence the person's overall performance range (Dunn, 2017).

The use of the EHP to guide clinical practice allows occupational therapists to understand aspects of the person, their contexts in which they participate in their daily occupations, and the tasks that are available to them in said contexts (Dunn, 2017). Through the interaction of the

person, context, and available tasks, occupational therapists see the client's performance range which drives intervention on ways to increase said performance range (Dunn, 2017). The use of EHP and the later stated intervention strategies can aid clinicians in targeting all factors of the person, changes to their contexts, and addition of tasks available to them for an increased performance range (Dunn, 2017). This theory can help to bridge the gap between physical and mental health interventions that exists in current OT practice (Allen & Kelly, 2014).

The EHP has five therapeutic intervention strategies or approaches that help to support individual needs and interests (Dunn, 2017). The first, *establish/restore*, focuses on improving one's skills, "restoring" old or lost skills, or "establishing" a new skill (Dunn, 2017). The *alter* intervention approach focuses on the context where the person performs tasks, finding the best fit between a person's abilities and the contexts that may be available to them (Dunn, 2017). The *adapt/modify* intervention approach focuses on changing facets of the context to promote increased performance and performance range (Dunn, 2017). The *prevent* intervention approach focuses on avoidance of negative outcomes by making changes to the person, context, or tasks available (Dunn, 2017). The *create* intervention approach focuses on the creation of circumstances that aid and support peak performance for all individuals (Dunn, 2017). These intervention approaches help to guide practice and aid in understanding the relationship between the person, their contexts, and their available tasks as it influences one's overall performance range (Dunn, 2017).

Existing literature supporting the use of EHP in the mental health setting for occupational therapists is minimal as practitioners favor the use of the other occupation-based models such as the Model of Human Occupation (MOHO), Canadian Model of Occupational Performance and Engagement (CMOP-E), The Behavioral/Cognitive–Behavioral (B/CB) theoretical conceptual

practice model, and the Cognitive Disabilities (CD) model (Ikiugu et al., 2017). The EHP was chosen for this project (in lieu of using the other aforementioned models) as it is a model that is viewed as an interprofessional model and useful for clients who see multiple healthcare professionals simultaneously. Another reason EHP was used is due to its unique addition of interventions strategies as part of the model. The implementation of EHP's specific intervention strategies could aim at improving client performance range and well-being in the orthopedic setting with increased focus on client mental health (Dunn, 2017; Ikiugu et al., 2017). The use of EHP's principles and assumptions to guide intervention planning will aid in showing the uniqueness and holism that OT brings to the rehabilitative team when incorporation orthopedic and psychosocial interventions (Dunn, 2017; Ikiugu, 2017).

Psychosocial Considerations for People with Upper Extremity Orthopedic Injuries

Approximately one-third of people who sustain any type of acute orthopedic injury experience depression, one-quarter experience PTSD and up to one-half have anxiety up to 10 years after the initial injury (Breazeale et al., 2021; Muscatelli et al., 2017). Vincent et al. (2018) explained that clients in an orthopedic and trauma setting, ranged from 21% to 35% or moderate to severe levels of anxiety or depression. While de Moraes et al. (2010) reported 35% of general clinic clients displaying anxiety and 28% experiencing depression compared to those in the orthopedic setting, 44% displaying anxiety and 33% experiencing depression; although this is dated literature, a more recent source was not found displaying the statistical significance of mental health influences from upper extremity orthopedic injuries. Part of the discrepancies in scores can be attributed to the care of mental health diagnoses in a normal clinic setting, whereas in orthopedic settings, they are not the main focus of the intervention session (de Moraes et al., 2010). This further demonstrates the increased need to focus on addressing mental and physical

health in the orthopedic setting. The increase in psychosocial factors associated with anxiety, depression, or PTSD can negatively affect clients' everyday life and occupations, causing a decrease in client performance range or interruption to daily life (Dunn, 2017; Vincent et al., 2018). Recent research shows that poor psychosocial well-being can negatively affect one's recovery from orthopedic injuries, with the most prominent issues being anxiety, depression, and PTSD related to the recovery of these injuries (Vincent et al., 2018). Another prevalent factor is the negative correlation between anxiety and the influence it has on occupational performance as well as function outcomes during recovery from orthopedic injuries (de Mores et al., 2010). Working to identify clients that may experience psychosocial symptoms in the early stages of recovery, specifically when in the acute stages of an injury can aid in positive recovery outcomes (Vincent et al., 2018). Overall client functional performance deficits following orthopedic injuries can influence all areas of occupation, with a decrease in return-to-work numbers and a reported lower quality of life exhibited in individuals experiencing increased anxiety, depression, pain, and PTSD following orthopedic injuries (Breazeale et al., 2021).

To understand the issue of holistic care for mental and physical diagnoses, it is important to highlight the importance of the relationships that are present between client physical performance and impairment rate, emotional health, energy and fatigue, and overall health relating back to client traumatic upper extremity orthopedic injuries (Golchin et al., 2014). In summary, each of the aforementioned factors are thought to influence the other factors. Clients displayed a negative correlation in rehabilitative outcomes when compared to quality of life following an upper extremity orthopedic injury, putting further strain on the individual's mental health (Golchin et al., 2014). The correlation between client performance, psychosocial factors such as anxiety, depression, or PTSD, and mental health can help to explain the significance and

need of addressing mental health in the orthopedic setting (Vincent et al., 2018). The mental and physical stress created by upper extremity orthopedic injuries adds to already existing strain on an individual that can further inhibit a client's rehabilitative outcomes (Golchin et al., 2014). Due to the connection between individuals mental and physical health, considering early evaluation and intervention planning that considers a person's physical and mental health as well as the stages or rehabilitation can aid the individual in a more rapid re-engagement in desired occupations (Golchin et al., 2014). Occupational therapists who work with individuals affected by traumatic upper extremity orthopedic injuries report clients displaying signs and symptoms of depression, anxiety, and PTSD that negatively affected their return to their former performance range (Dunn, 2017; Golchin et al., 2014). Knowing the signs of depression, anxiety, and PTSD in clients is an important part of aiding in their overall recovery and collaboration with clients during occupational therapy services for a holistic approach (Vincent et al., 2018).

Archer et al. (2016) addressed the barriers that persistent pain from an orthopedic injury can have on a client's general health. An increase in pain demonstrates a positive correlation with increased depressive symptoms, causing pain to have a negative impression on client performance range and rehabilitative outcomes (Archer et al., 2016; Dunn, 2017). This can be due to clients experiencing increased somatoform-like symptoms such as psychological distress caused by bodily dysfunction, pain or discomfort, or body dysmorphia depending on type of injury and severity (Bhandari et al., 2008). Archer et al. (2016) stated that clients who experience increased post-operative pain following discharge from care facilities or hospitals demonstrate negative influences on their general health, possible depression, PTSD, and other mental health diagnoses following upper extremity orthopedic injuries (Archer et al., 2016). There is a need to work towards the inclusion of interventions that address client factors associated with both

physical and mental health diagnoses to aid in increasing client performance range (Archer, 2022).

Practice Guidelines for Individuals Receiving Occupational Therapy Services for Upper Extremity Orthopedic Injuries

Practice guidelines are documents intended to provide practitioners a general overview of basic care that is consistent between clients who have like conditions or diagnoses. Guidelines for physical rehabilitation, specifically for upper extremity orthopedic diagnoses were compiled, including intervention techniques and the incorporation of EHP types into various examples, as well as guidance for a comprehensive plan of care. Practice guidelines for occupational therapists working in mental/behavioral health settings include commonly used intervention types plus the collaboration between the clinician and client. Integration and incorporation of both mental and physical intervention types and their guidelines allows OT practitioners to understand the holistic approach to practice and provide the best possible client care that is individualized to each person.

Occupational therapists offer a specific skill set and knowledge for the assessment and intervention planning of clients affected by physical dysfunction and the influence it can have on the daily activities (Trombly Latham, 2021). Interventions for physical dysfunction can include the changing of the client's environment (*altering* their contexts relating to EHP), learning new techniques for task completion (*establish/restore* skills relating to EHP), compensatory movements for engagement in daily activities (*adapt/modify* skills relating to EHP), and optimization of client abilities or skills to facilitate participation in daily tasks (*create* optimal performance circumstances relating to EHP) (Dunn, 2017; Trombly Latham, 2021). The American Occupational Therapy Association (AOTA, 2014) provides practice guidelines for

occupational therapists working in the orthopedic setting, specifically for rehabilitation of the upper extremities. These guidelines lay out OT interventions for a comprehensive plan of care such as therapeutic activities, therapeutic exercise, orthosis fabrication/fitting/training, joint protection, energy conservation, sensory interventions, mirror therapy, scar management, pain management, work hardening, ADL training, use of assistive/adaptive devices, and safety education (AOTA, 2014). Areas of continued education for upper extremity rehabilitation include orthoses fabrication for long-term use/post-surgical use, ergonomics, diagnostic and post-surgery protocols, application of physical agent modalities (fluidotherapy®, ultrasound, therapeutic paraffin, cryotherapy, neuromuscular electrical stimulation, etc.), manual therapy, biofeedback and taping techniques, and compression therapy (AOTA, 2014).

Occupational therapists have the ability to be addressing mental health issues in order to decrease client's length of stay, aid in recovery towards their goals, allow for a safe and ethical discharge, and provide a greater quality of care that is in line with OT values and its holistic nature. Only after a client has increased self-efficacy will occupational therapists be able to indicate that they have addressed all of their client's health needs to help with returning to their full function and increase their performance range following an upper extremity orthopedic injury (Dunn, 2017; Ivany, 2011). Interventions to utilize for individuals experiencing anxiety, depression, and PTSD include cognitive-behavioral therapy (CBT) strategies, various breathing techniques, and many others. McCraith (2019) stated that CBT strategies such as cognitive reframing, Socratic thinking, guided discovery, positive self-talk and affirmations, and behavioral experiments are beneficial to increasing client performance range. The focus of these interventions is to gain further insight into oneself through examination of thoughts that may be self-defeating or increasing an individual's anxiety, depression, or PTSD (McCraith, 2019).

Once identified, restructuring one's thoughts and though processes to decrease the experience of symptoms and increase QOL and performance range (Dunn, 2017; McCraith, 2019). Emotional regulation and mindfulness are also interventions that can be associated with CBT as the aim is to understand one's emotions and work on controlling them through increased awareness of when symptoms of anxiety, depression, or PTSD are occurring or about to occur (Giroux, McLaughlin, & Scheinholz, 2019).

Yancosek (2012) stated that motivation is a large driving factor when measuring client success in achievement of desired therapy outcomes. This demonstrates the need for a focus on psychosocial factors and the importance they can have on client rehabilitation potential and return to prior performance (Cochrane et al., 2020; Dunn, 2017). Bridging the gap in care between providing both physical and mental health interventions clients to aid in increasing performance range is an area that needs higher focus (Cochrane et al., 2020; Dunn, 2017).

Bridging the Gap between Physical and Mental Health

A gap in the literature was identified as minimal availability of research has been conducted on the implementation of physical and mental health interventions in the orthopedic setting. This quantifiable gap demonstrates the need for a bridge between the two areas of practice to explain and implement synthesized care to maximize the benefits of comprehensive care of clients diagnosed with upper extremity orthopedic injuries. The gap can be addressed through the use of evidence-based, OT mental health interventions in conjunction with orthopedic interventions as to provide the clients with care focused on them. Rogers et al. (2017) described that using narrative-based, OT was feasible and additional spending towards OT intervention led to lower readmission rates among clients in a multitude of settings. Narrative medicine along with narrative reasoning, is a medical practice based on needs of the client and

how they present that need through storytelling or metaphor (Taylor, 2008). Narrative reasoning allows occupational therapists to discover more about their client by seeing the experience through the client perspective (Taylor, 2008). Narrative medicine aims to involve clients in their own care planning, demonstrating improved client outcomes as a result (Wasmuth et al., 2021). This way of practice aids therapists in being active listeners and become effective clinicians. This practice aligns well with OT as the profession focuses on the needs and wants of the client to aid in driving and motivating them during recovery through the use of multiple intervention types for various diagnoses, both psychological and orthopedic.

Integration of possible mental health interventions into orthopedic practice demonstrate benefits of psychosocial focused intervention approaches (Gartlehner, 2016). The use of CBT as part of client intervention validates the use of mental health interventions for orthopedic injuries with the aim to promote client motivation for return to prior function in daily activities (Archer et al., 2022). With a reduction of mental health symptoms, such as depression, following the implementation of a psychosocial focused intervention approach such as CBT leaves an opening for continued research in the area with the use of various interventions in the hopes of similar positive outcomes (Gartlehner, 2016).

The use of Lifestyle Redesign® by occupational therapists is one integrative intervention strategy that can be utilized in working towards comprehensive care of clients (Uyeshiro Simon & Collins, 2017). Incorporation of Lifestyle Redesign® into OT practice can help improve client quality of life (QOL) as the focus of this intervention is create, adapt/modify, or alter habits and routines to aid in increased performance range (Dunn, 2017; Uyeshiro Simon & Collins, 2017). Through the use of Lifestyle Redesign®, clients demonstrate increased active coping abilities that can be used when experiencing increased pain, anxiety, depression, or PTSD (Uyeshiro

Simon & Collins, 2017). The statistical benefit of including the Lifestyle Redesign® intervention into OT practice also demonstrated increased mental health related QOL (Lagueux et al., 2021). The use of Lifestyle Redesign® can be paired with EHP intervention techniques to aid in the possible increase of client performance range (Dunn, 2017).

Another method of integration of mental health interventions into the orthopedic setting comes from the Occupation Matters Programme by Newport and Clarke (2020). This program is an adaptation of Lifestyle Redesign®, which is typically used in the care of severe mental health conditions. Through the implementation of interventions strategies such as the Occupation Matters Programme, occupational therapists can use interventions like this and CBT for assistance in helping increase client performance range and their return to prior function (Archer et al., 2022; Dunn, 2017; Newport & Clarke, 2020). Motivation is an integral part of positive client outcomes, which can be negatively influenced by psychosocial aspects such as depression, anxiety, or PTSD (Cochrane et al, 2020; Yancosek, 2012). Occupational therapists can validate the beneficial use of mental health interventions in the orthopedic setting sets the stage to aid in increasing client performance range (Archer et al., 2022; Dunn, 2017; Yancosek, 2012)

The negative implications that individuals experience, arising from various upper extremity orthopedic injures, can affect client's mental health and requires attention in the orthopedic setting. The affect that these secondary diagnoses can have on positive client outcomes can decrease the client's overall p\erformance range (Dunn, 2017). The implementation of evidence-based, physical and mental health interventions into the orthopedic setting may allow for a higher quality of care and aid in the increase of client performance range.

Problem Statement

With an increasing number of upper extremity orthopedic injuries happening every year, an increasing need to address all aspects of the person when caring for these individuals is evident (Allen & Kelly, 2014; Jarman et al., 2020). The increase in upper extremity orthopedic injuries paired with the pervasive nature of mental health diagnoses positively correlates with a heightened co-morbidity rate (Plana-Ripoll et al., 2019). The lack of evidence supporting implementation of physical and mental health interventions in the field of upper extremity focused-orthopedic has led to the creation of the product as the need for it is evident based on literature reviewed above.

The purpose of this project is to build a process that ensures that clients' needs are being evaluated holistically by occupational therapists in an upper extremity orthopedic setting. This is done through the development of a product that assists in screening orthopedic clients for psychosocial factors influencing occupational performance following an upper extremity orthopedic injury, implementation of evidence-based psychosocial interventions to be used in conjunction with orthopedic interventions, and a referral resource for continued mental health care within the community.

Chapter II Literature Review consisted of discussion and analysis of the general overview of occupational therapy and the professions' role in upper extremity orthopedics and mental health along with the theoretical basis used to guide the literature review and the creation of the final product being reviewed. The psychosocial considerations for people with upper extremity orthopedic injuries are described, occupational therapy guidelines for collaborative care of individuals experiencing upper extremity orthopedic injuries and evidence-supported mental health interventions, and lastly bridging the gap between physical and mental care of clients.

Chapter III Methods consists of the process of topic selection, steps in the literature review, and stages of program development.

CHAPTER III

METHODOLOGY

Chapter III Methodology consists of the process of topic selection, literature review steps, and stages in the development of the program. The topic was chosen due to my interest in the orthopedic setting and the possible disconnect between mental and physical health following upper extremity orthopedic injuries. The purpose of the scholarly project was to aid in providing holistic care to clients in the orthopedic setting, addressing all aspects of the person rather than just the physical factors. I discussed the need of this project with occupational therapists in an outpatient orthopedic clinic of an urban, Midwestern town in the United States, as well as providing them with a survey to further learn about the needs of the clinic. This led to identification of the needs of the clinic and how this project could benefit the facility and the client population that they provide care for.

The preliminary work done for this project started with the completion of a literature review matrix that occurred from May 2021 to November 2021. This consisted of review and analysis of current research with a focus on the numerous psychosocial factors impacted by upper extremity orthopedic injuries and the need for screening tools to identify further intervention in this area. Journal article searches were completed using the Cumulated Index to Nursing and Allied Health Literature (CINAHL), PubMed, Google Scholar, OT Seeker, Substance Abuse and Mental Health Services Administration (SAHMSA), Center for Disease Control and Prevention (CDC), American Occupational Therapy Association (AOTA), UND Scholarly Commons, and American Society of Hand Therapists (ASHT). Key terms included *Occupational therapy, upper extremity, lifestyle redesign, Complex regional pain syndrome, mental health, orthopedic injuries, hand therapy, model of human occupation, ecology of human*

performance, and orthopedics. The completion of a full literature review, which was the first phase of the needs assessment for this project, defined the problem. The inclusion criteria for the literature review included articles with the focus population diagnoses or treated for upper extremity orthopedic injuries, psychosocial factors impacted by orthopedic injuries, various professions working with orthopedic injuries, and studies done within the last 15 years. Exclusion criteria includes studies older than 15 years and dual diagnoses including but not limited to cancer, high blood pressure, and chronic heart disease.

Though the Model of Human Occupation (MOHO) as a guide was emphasized heavily in existing literature, I took an alternative approach to integration of both mental and physical interventions in the orthopedic setting and chose the Ecology of Human Performance (EHP) to guide the development of this product. The focus on EHP as a basis for the theoretical framework of the product is used to assist in an all-encompassing view of client care, focusing on the person, their contexts, available tasks, and the interact between those aspects that influence their performance range (Dunn, 2017). The development of the product was guided by EHP to increase availability of tasks to clients, therefore increasing their performance range (Dunn, 2017). The theoretical foundations of EHP defines the person as a complex individual, drawing on their past and present experiences, values and interests, and various personal factors (sensorimotor, cognitive, and psychosocial skills) (Dunn, 2017). Contexts associated with EHP include the physical, temporal, cultural, and social; all of which affect one's participation in their daily lives (Dunn, 2017). Availability of tasks for individuals influence their overall performance range, this is the number of tasks available based on relationships between the person and their contextual variables (Dunn, 2017). For example, a client who may be experiencing anxiety following an upper extremity orthopedic injury may not be able to do things they once loved

such as cooking, sports or exercise, or other leisure activities as a combination of weight restrictions or increased anxiety towards fear of reinjury. With the screening tool being created, having clients identify these possible fears limiting their performance range and getting treatment for this deficit can help with overcoming or working through the fear to increase their available tasks that do not invoke that fear and increase overall performance range.

The second phase of the needs assessment included the gathering of therapist feedback to inform and guide product development. I developed a needs assessment survey to gain information on the needs and gaps in practice from therapists practicing in the outpatient orthopedic setting, specifically in hand therapy. The survey was developed in prior semesters during the review of relevant literature, using information on the most common upper extremity orthopedic injuries, common evaluation methods, demographic age, etc. A copy of the needs assessment survey can be found in Appendix B

The third phase was the development of the product based on needs of the clinic and results of the literature review. This phase took place over approximately three months, being provided with feedback throughout the entirety of the development. Several drafts were constructed with appropriate changes made based on trial and presentation of the developed program. The first part of the product is education on various, short mental health screening tools that can be implemented at the outpatient level to assess how an orthopedic injury may impact a client's psychosocial aspects. This part was shifted from use of mental health screens to education on various ones available due to restrictions at the site. For use of the screens in the clinical setting, I was required to apply for use of them by gaining approval from several higher ranked managerial staff. Another barrier faced was that this process was typically completed by employees rather than students which made the process more laborious, thus causing a shift to

education. The educational handout was constructed using information from the free screening tools to best inform clinicians of the nature of the various screens and aid in understanding the benefits of implementing them into practice.

The next portion is the use of evidence-based interventions pulled from literature and various occupational therapy textbooks focused on mental health interventions were used for the compilation of interventions to be implemented into the orthopedic setting. Numerous mental health interventions were supported by literature found during the initial phases of the literature review, being incorporated into the final product. Another reputable source used for the compilation of interventions was OT textbooks specifically for mental health care and ways to apply them in any given setting.

Finally, a referral resource that will be part of the final product to aid in guiding clinicians on where to refer clients if they are to need a higher level of mental health intervention. This process was completed through an internet search of mental health services in the community that could be beneficial to the target population. Once possible services were identified, verbal permission was acquired from each to allow the author to place them on the referral resource. The referral resource was constructed with definitions of each type of mental health service offered, contact number, and any other information a clinician and client would need during this referral process.

The ethical considerations for the development of the product are minimal. One of the aims of this project is to demonstrate beneficence in occupational therapy practice, looking out for the well-being of clients. Another ethical consideration is veracity, or the comprehensive and accurate care of clients. And lastly, the principles of justice and fidelity, providing fair, objective, and respectful treatment to all clients.

CHAPTER IV

PRODUCT

Chapter IV Product consists of an overview of the outcome of this project which is to facilitate enhancing occupational performance outcomes for individuals experiencing upper extremity orthopedic injuries through the implementation of interventions targeting psychosocial factors in conjunction with orthopedic interventions. The completed product consists of a compilation and education on various mental health screening tools, a constructed tip sheet consisting of evidence-based occupational therapy interventions for psychosocial well-being to implement into the orthopedic setting, and a referral resource for continued mental health care specifically for the surrounding community. This includes a brief description of each section of the product and the information within each individual part. The individual sections are compiled into a final product as every section informs the others for a comprehensive tool for screening, intervention, and continuation of care.

The project was conceptualized through collaboration with an outpatient orthopedic clinic in an urban area that serves the rural areas surrounding as well as with the occupational therapists working at the clinic to learn the needs of the client population, published evidence and my experiences in an experiential placement at aforenoted clinic. This collaboration resulted in the identification of a need for education on various available screening tools for individuals experiencing mental health diagnoses in conjunction with upper extremity orthopedic injuries, education on numerous mental health interventions that can be implemented during orthopedic interventions, and the need for a referral resource for continued mental health care that is specific to the surrounding area. The theoretical framework that guided the creation of the final product was EHP. The EHP was broken up into its individual parts with parts of the product focusing on

client contexts, the person directly, and overall increasing client performance range (Dunn, 2017). The product consists of three parts: Screening Tools In-Service, Interventions Tip Sheet, and Referral Resource.

Screening Tools In-Service

The first section of the created product focused on the educating clinicians on the available screening tools for anxiety, depression, and PTSD. An education session was designed to aid clinicians in learning the availability of screening tools that can be integrated into their outpatient orthopedic setting. The identified screening tools, chosen to be included in this portion of the final product are the Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), and the Primary Care Post-Traumatic Stress Disorder Screen for DSM-5 (PC-PTSD-5). The PHQ-9 is a 9-question screening tool for depression with the goal of gauging severity of depressive symptoms (Kroenke, & Spitzer R.L, 2002). Questions in this screen include client motivation, eating habits, sleep habits, enjoyment in daily life or the loss of enjoyment, and overall insight into client daily routines (Kroenke, & Spitzer R.L, 2002). The GAD-7 is a 7-question screening tool used for evaluating severity of anxiety or anxiety associated symptoms (Spitzer, Kroenke, Williams, & Löwe, 2006). Questions in this screen consist of inquiring if the client is experiencing any feelings of anxiousness, trouble relaxing, excessive worrying, or loss of control of worrying (Spitzer, Kroenke, Williams, & Löwe, 2006). Finally, the PC-PTSD-5 is a 5-questions screening tool for assessing clients for symptoms of PTSD and its severity (Prins, Bovin, Kimerling, Kaloupek, Marx, Pless Kaiser, & Schnurr, 2015). Questions include having experienced any traumatic events in the last several months, impacts on sleep from a traumatic event, increased awareness/being on guard, or reminders of the traumatic events (Prins, Bovin, Kimerling, Kaloupek, Marx, Pless Kaiser, & Schnurr, 2015).

The Education on Screening Tools for Anxiety, Depression, & PTSD – 30-minute educational in-service, was provided with a focus on informing outpatient clinicians on the PHQ-9, GAD-7, and the PC-PTSD-5 for short screening of clients. The in-service consisted of 13 slides, presented over a video meeting platform. The objectives for the in-services included that: (1) practitioners will be able to identify which screening tool is appropriate for use, (2) practitioners will be able to locate the screening tools as for implementation into practice, (3) practitioners will be able to demonstrate correct use of the screening tools in practice, and (4) practitioners will be able to describe the importance of various mental health screens to clients. The educational session provided the outpatient therapy clinicians with information about what each specific screening tool aimed to address, administration time, main themes, and availability of the tools following approval from the company for use. The educational in-service aligned with the person aspects of EHP as they have the ability to aid clinicians in further understanding their client and gaining insight client and psychosocial factors that may be inhibiting the client's performance range (Dunn, 2017). It also aligned with the contextual aspects of EHP as the screening tools can facilitate the clinician in delving into client contextual factors that may be influencing client performance range (Dunn, 2017). The intention of this portion of the product is to aid in early identification of psychosocial factors that may be negatively affecting client performance range and outcomes following an upper extremity orthopedic injury or diagnosis.

Interventions Tip Sheet

A tip sheet consisting of multiple mental health interventions that can be implemented alongside orthopedic interventions for upper extremity orthopedic injuries was also included in this product. The tip sheet is categorized into three sections, various breathing techniques to cater to a variety of individuals with a technique that will work best for them, cognitive-behavioral

therapy techniques, and a miscellaneous section that contains numerous intervention strategies that do not specifically fit with either of the above categories. The intervention strategies included in this product are evidence-based and aimed to help with the treatment of mental health diagnoses such as anxiety, depression, and PTSD. The interventions tip sheet addresses the person aspects of EHP, delving into the sensorimotor and psychosocial factors individual clients possess and the influence these factors can have on their performance range (Dunn, 2017). The purpose of the interventions tip sheet is to facilitate the collaboration of addressing person factors relating to anxiety, depression, and PTSD to aid in increasing client performance range (Dunn, 2017). The EHP intervention strategies utilized include *establish/restore*, *adapt/modify*, *alter*, *create*, and *prevent* (Dunn, 2017).

The breathing techniques included in this portion of the project include equal-time breaths, five-finger breathing, pursed-lip breathing, cooling breath, diaphragmatic breathing, and deep breathing (Dasari, Dhaniwala, & Dhaniwala, 2020; Hazlett-Stevens & Craske, 2008; Upoyo & Taufik, 2019). The tip sheet includes directions for clinician facilitation of clients completing these breathing techniques. The interventions focus on the EHP intervention *establish/restore* as the goal is to "establish" a new skill that can aid the client in control of person factors associated with anxiety, depression, or PTSD (Dunn, 2017). The *create* and *prevent* intervention strategies can be used as a precautionary measure when the client may feel the beginning onset of symptoms such as increased anxiety, triggering of a traumatic memory, and prior to a loss of control of any other symptoms (Dunn, 2017).

The CBT techniques are problem-focused interventions that strives to identify, understand, and challenge maladaptive beliefs, feelings, and actions (Davis & Noyes, 2019). Contained in this section are cognitive reframing, Socratic questioning, guided discovery, self-

talk, affirmations, and behavioral experiments (Davis & Noyes, 2019; McCraith, 2019). Each method has a description of the intervention, the steps on how the clinician can facilitate the intervention, and an example of the intervention. The EHP intervention strategy associated with this section is *establish/restore* as the goal is to "establish" a new skill that can aid the client in symptom management or "restore" skills they may have lost or no longer use due to increased symptoms of anxiety, depression, or PTSD (Dunn, 2017).

Lastly, the miscellaneous section has interventions that did not specifically fit either of the above categories. These interventions include seeking family/peer support, participation in valued activities and occupations, emotional regulation strategies, meditation, mindfulness, participation in physical activity, and time management strategies (Giroux, McLaughlin, & Scheinholz, 2019; Prizur-Barnekow & Pickens, 2019; Shalaby & Agyapong, 2020; Waterworth, 2003; White et al., 2017). These interventions focus on both person and contextual factors relating to the client and how to best increase performance range (Dunn, 2017). Due to the nature of these various interventions not fitting into an overarching category, numerous EHP intervention strategies are associated with each individual intervention.

Referral Resource

The final part of the product is a referral resource that clinicians can use if clients require further care for mental health symptoms or diagnoses. The referral list created for the clinicians is specific to the site as the sources are within the same city and community. The referral list includes various types of programs for continued mental health care such as inpatient behavioral health, outpatient behavioral health, partial-hospitalization programs, and outpatient day-programs. A variety of programs were included as each program is structured differently, different settings, and different levels of care based on client need.

The referral resource is in a table format, each section having the type of care provided, the location or address, the phone number to call, and situations for when a client and clinician would want to collaborate on continued mental/behavioral health care. Included are instructions on how to schedule an e-visit and virtual care meetings with professionals in the community. The referral resource is to be used as a discussion tool to work with the client, which can be based on scores and symptoms present following use of the screening tools or intervention strategies. The EHP aspects associated with the referral resource relate to client context and how clinicians can best support the client for increased performance range (Dunn, 2017).

The intention and aim of the created project were to aid clinicians in the early identification of psychosocial factors that may be negatively impacting client performance range, education on various intervention strategies for implementation in conjunction with orthopedic interventions targeting upper extremity orthopedic injuries, and a referral resource for outpatient clinicians to utilize if a client were to require further mental health care beyond their realm of practice.

Chapter IV Product consisted of an overview of the completed project including descriptions of the included sections. The educational in-service for mental health screening tools, various mental health intervention strategies to be implemented in conjunction with orthopedic interventions for upper extremity orthopedic injures, and a referral resource for continuation of care. The EHP aspects associated with each section vary based on the concept being targeted, either the person factor or context, the goal being to increase client performance range (Dunn, 2017). The full product can be found in Appendix A.

CHAPTER V

SUMMARY

Chapter V Summary is comprised of an overview of the entirety of the project and subsequent sections. The strengths and limitations of the completed product are described as well as suggestions for continued development and research. Included are recommendations for use and implementation of the product in an orthopedic setting.

Overview

The importance of treating clients holistically within the OT profession is demonstrated through the decrease of client performance range due to psychosocial implications such as anxiety, depression, and PTSD following upper extremity orthopedic injuries (Dunn, 2017; Gordon, 2019; Ikiugu, 2017). Due to the prevalence of anxiety (approximately 40-50%), depression (approximately 33%), and PTSD (approximately 25%) prior to an upper extremity orthopedic diagnosis, the increasing need of mental health interventions in conjunction with common orthopedic interventions is clear (Breazeale et al., 2021; Muscatelli et al., 2017). The overarching purpose of this project was to address enhancing occupational performance outcomes for individuals with orthopedic injuries that includes psychosocial well-being considerations. The product of this project resulted in the compilation of several, evidence-based screening tools for anxiety, depression, and PTSD that were used to educate outpatient therapists. The second portion of this project was the creation of a “tip sheet” that was comprised of various mental health interventions that could be used in conjunction with orthopedic interventions and allow clinicians to take a more holistic approach to client care. Lastly, a referral resource was created relating to the surrounding community; this can be used by practitioners to guide them where a referral should be made if a client is experiencing continued anxiety, depression, PTSD

or another mental health diagnoses second to their upper extremity orthopedic injury that may need continued care or intervention. The creation of this product was guided by EHP (Dunn, 2017).

Strengths & Limitations

The purpose of this project being to aid in the increase of client performance range experiencing an upper extremity orthopedic injury while also addressing psychosocial factors; the resulting product allows clinicians to address the multiple psychosocial factors following screening, implementation of interventions for those various psychosocial factors, and referral to continued care if it is needed or would benefit the client. Strengths of this project include its ability to be used in a variety of outpatient settings, not constricted to upper extremity orthopedics although this is the setting in which it was constructed. The information is clearly presented, can easily be added to or modified by clinicians with experience treating clients with dual-diagnoses, and can be measured for effectiveness in various settings. Even with several strengths that the product presents, it also has limitations. Although research has been conducted on the effectiveness of numerous mental health interventions included in the product, there is minimal research on the benefits of mental health interventions in conjunction with orthopedic interventions. In order to address the efficacy of this, further studies should be done on the impact to client outcomes following treatment of clients experiencing negative mental health impacts following their upper extremity orthopedic injuries.

Recommendations for Use

The recommendations for use of this product is implementation into upper extremity orthopedic settings to aid in enhancing occupational performance range for individuals with upper extremity orthopedic injuries, including psychosocial well-being considerations. The

intention is for occupational therapists to learn about the screening tools available for severity rating of clients experiencing anxiety, depression, or PTSD following an upper extremity orthopedic injury. Following learning of these screening tools, they are available online within the public domain with no fee or permission to reproduce. This would allow occupational therapists to implement these quick screening tools into practice to gauge whether or not clients' needs are being met in the therapy session or if the focus is too heavily placed on recovery from their orthopedic diagnoses, disregarding any psychosocial factors present.

The "Tips for Integration of Mental Health Interventions into Orthopedic Practice" handout can be implemented if clients are displaying signs or symptoms of anxiety, depression, or PTSD. The tips can also be implemented following the use of the screening tools. The tip sheet presents a variety of interventions that can be utilized in conjunction with the orthopedic interventions for management of symptoms, allowing occupational therapists to treat the client holistically.

Finally, the referral resource is specific to the site as it contains clinics and healthcare in the community for mental/behavioral health. The resources listed vary on level of care and can be used to aid in discussion of continued care if a client were to express increased mental/behavioral health care. Keeping the tone of therapy as a conversation can aid in the collaborative process of rehabilitation between the clinician and client.

Conclusion

This product is an evidence-based, well-informed solution that can aid in addressing psychosocial factors in the orthopedic setting. Implementation of the product can hopefully allow for increased performance range of clients through the conjunction of physical and mental health interventions. I hope this product can be used in various upper extremity orthopedic settings and

increase the awareness of the detriment that anxiety, depression, and PTSD can have on client participation in desired daily activities following upper extremity orthopedic diagnoses. The continuation of research in this area will only increase as the prevalence of physical and mental health diagnoses persist.

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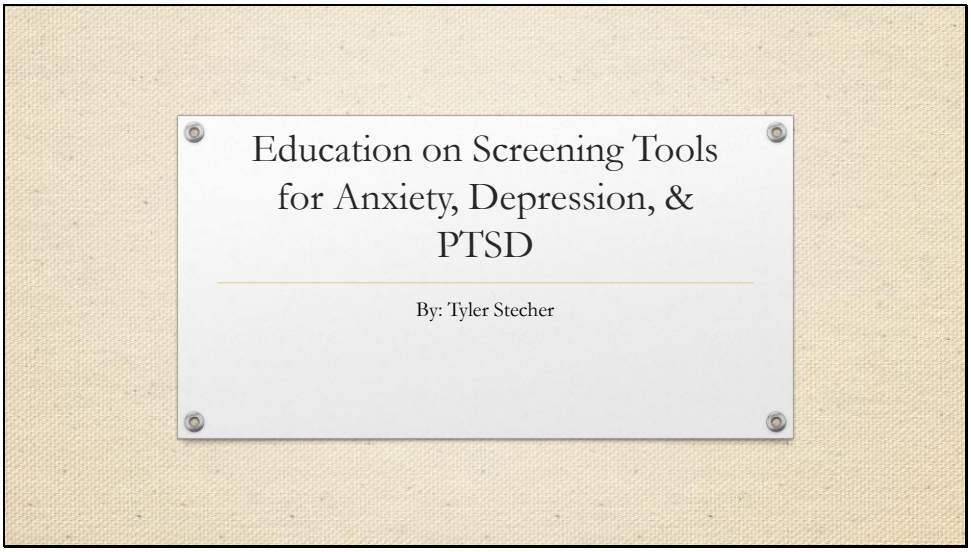
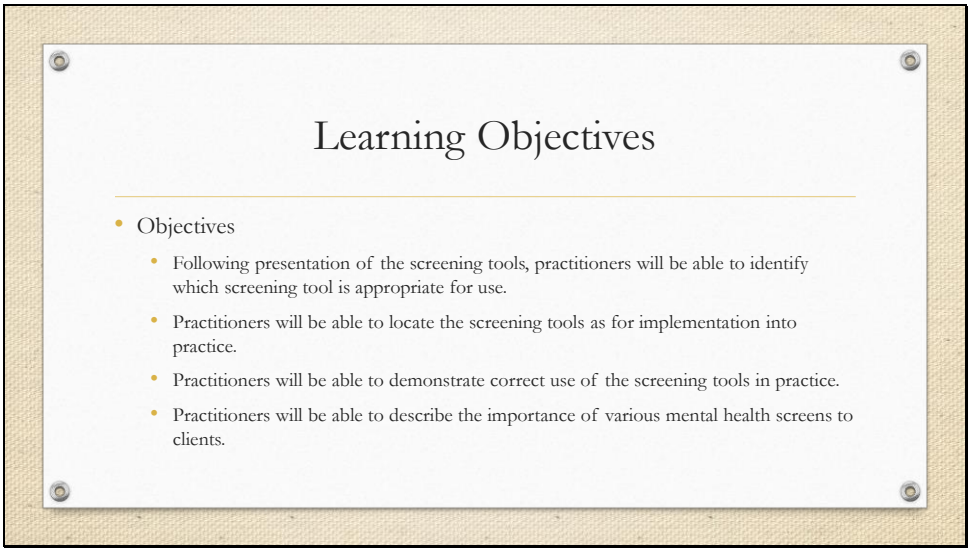
APPENDIX A

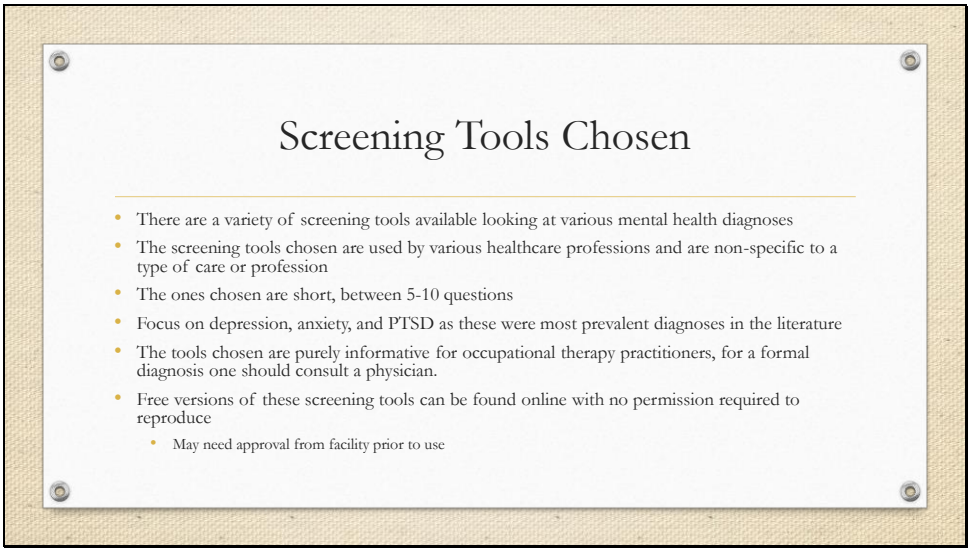
Slide 1



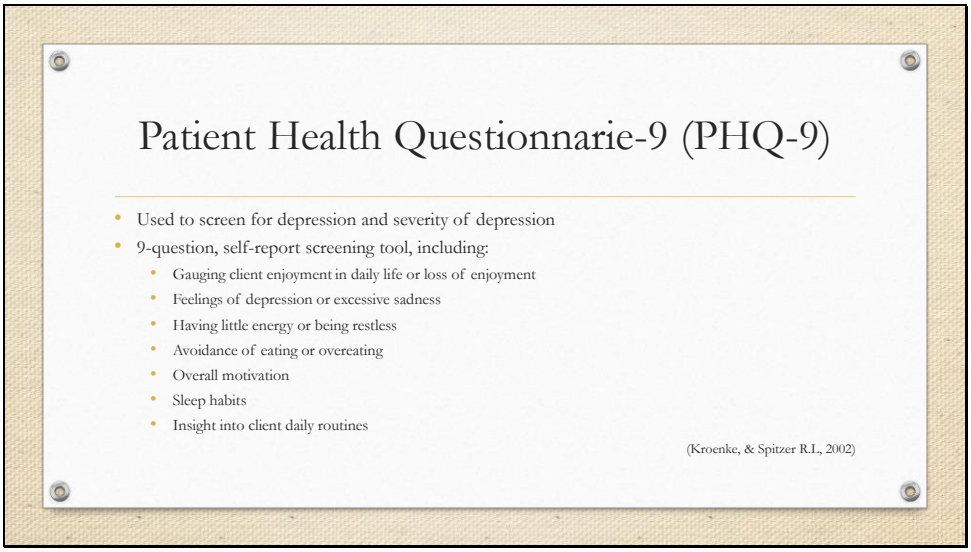
Slide 2


Learning Objectives
Objectives
Following presentation of the screening tools, practitioners will be able to identify which screening tool is appropriate for use.
Practitioners will be able to locate the screening tools as for implementation into practice.
Practitioners will be able to demonstrate correct use of the screening tools in practice.
Practitioners will be able to describe the importance of various mental health screens to clients.

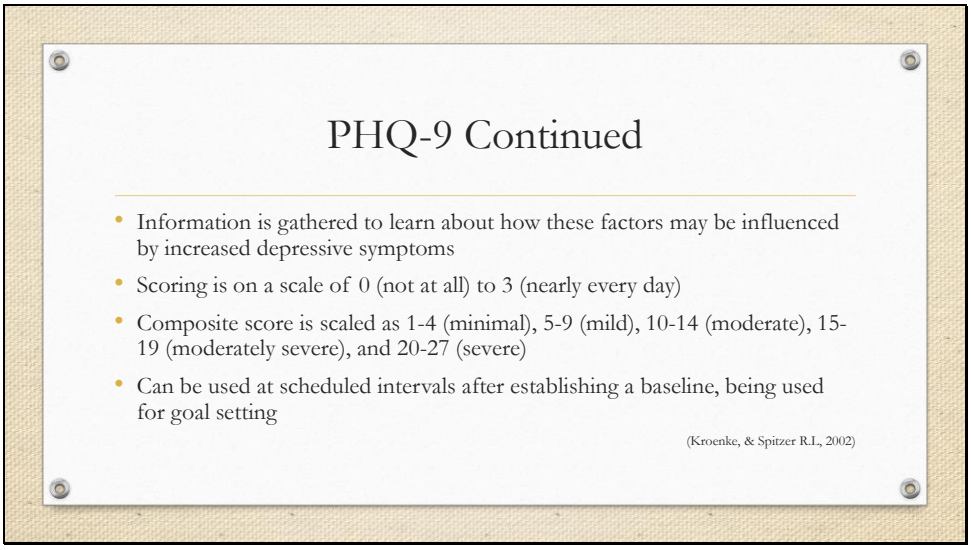
Slide 3


Screening Tools Chosen
There are a variety of screening tools available looking at various mental health diagnoses
The screening tools chosen are used by various healthcare professions and are non-specific to a type of care or profession
The ones chosen are short, between 5-10 questions
Focus on depression, anxiety, and PTSD as these were most prevalent diagnoses in the literature
The tools chosen are purely informative for occupational therapy practitioners, for a formal diagnosis one should consult a physician.
Free versions of these screening tools can be found online with no permission required to reproduce
May need approval from facility prior to use

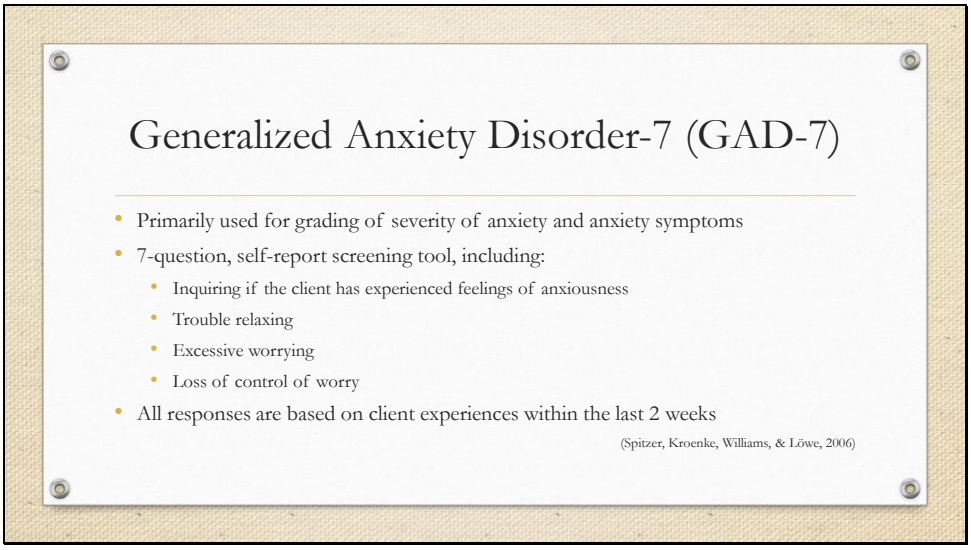
Slide 4


Patient Health Questionnarie-9 (PHQ-9)
Used to screen for depression and severity of depression
9-question, self-report screening tool, including:
Gauging client enjoyment in daily life or loss of enjoyment
Feelings of depression or excessive sadness
Having little energy or being restless
Avoidance of eating or overeating
Overall motivation
Sleep habits
Insight into client daily routines
(Kroenke, & Spitzer R.L., 2002)

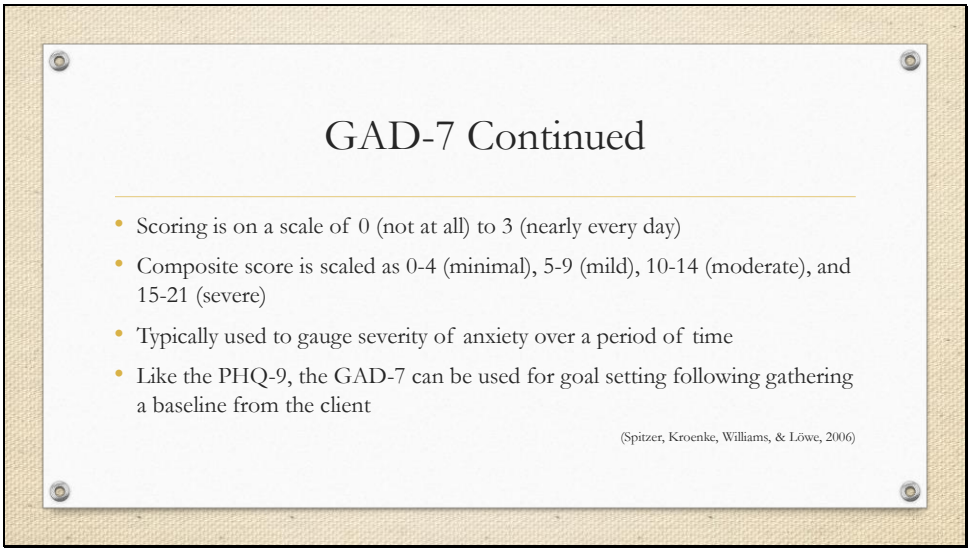
Slide 5


PHQ-9 Continued
Information is gathered to learn about how these factors may be influenced by increased depressive symptoms
Scoring is on a scale of 0 (not at all) to 3 (nearly every day)
Composite score is scaled as 1-4 (minimal), 5-9 (mild), 10-14 (moderate), 15-19 (moderately severe), and 20-27 (severe)
Can be used at scheduled intervals after establishing a baseline, being used for goal setting
(Kroenke, & Spitzer R.L., 2002)

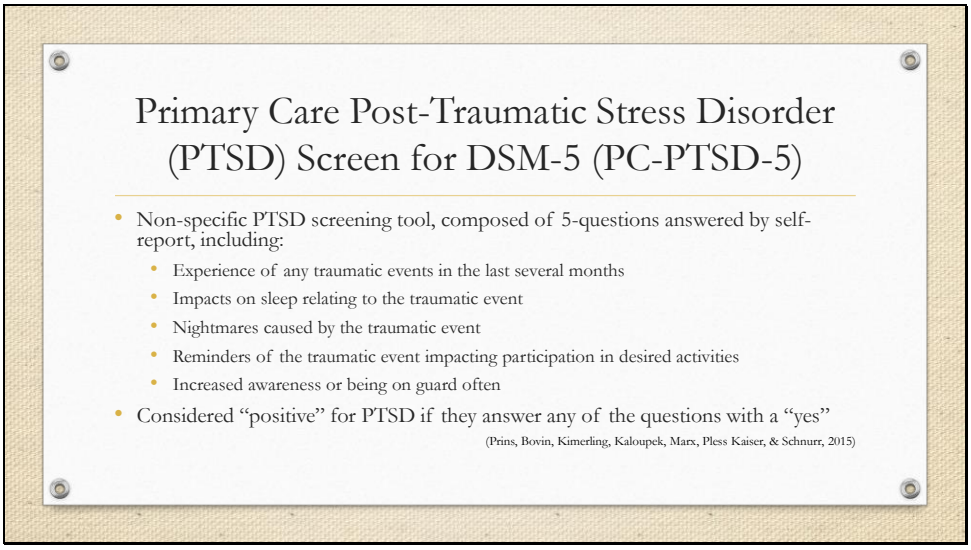
Slide 6


Generalized Anxiety Disorder-7 (GAD-7)
Primarily used for grading of severity of anxiety and anxiety symptoms
7-question, self-report screening tool, including:
Inquiring if the client has experienced feelings of anxiousness
Trouble relaxing
Excessive worrying
Loss of control of worry
All responses are based on client experiences within the last 2 weeks
(Spitzer, Kroenke, Williams, & Löwe, 2006)

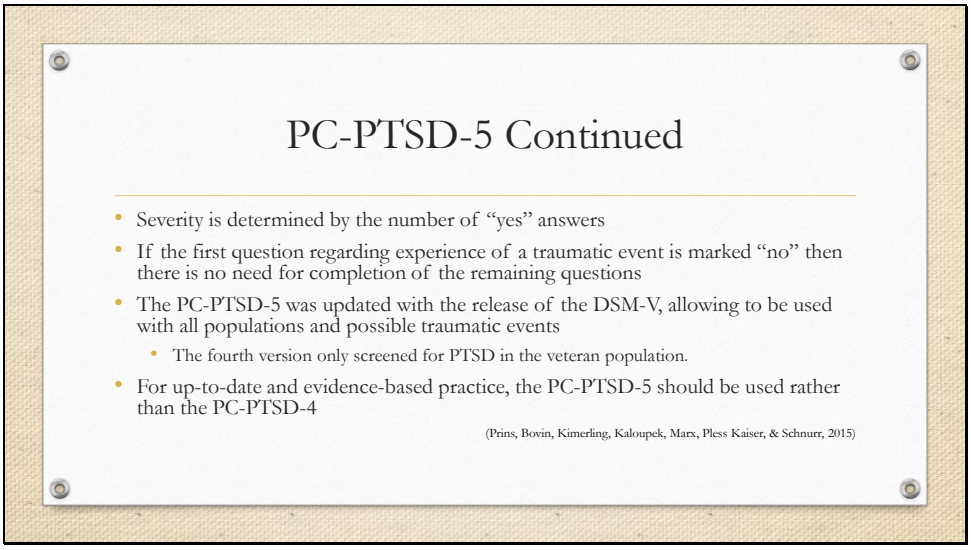
Slide 7


GAD-7 Continued
Scoring is on a scale of 0 (not at all) to 3 (nearly every day)
Composite score is scaled as 0-4 (minimal), 5-9 (mild), 10-14 (moderate), and 15-21 (severe)
Typically used to gauge severity of anxiety over a period of time
Like the PHQ-9, the GAD-7 can be used for goal setting following gathering a baseline from the client
(Spitzer, Kroenke, Williams, & Löwe, 2006)

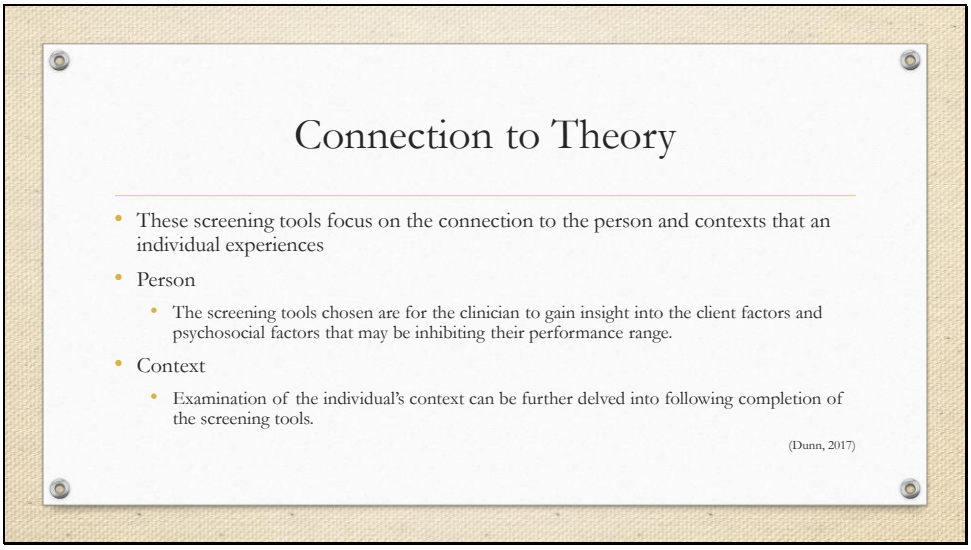
Slide 8


Primary Care Post-Traumatic Stress Disorder (PTSD) Screen for DSM-5 (PC-PTSD-5)
Non-specific PTSD screening tool, composed of 5-questions answered by self-report, including:
Experience of any traumatic events in the last several months
Impacts on sleep relating to the traumatic event
Nightmares caused by the traumatic event
Reminders of the traumatic event impacting participation in desired activities
Increased awareness or being on guard often
Considered "positive" for PTSD if they answer any of the questions with a "yes"
(Prins, Bovin, Kimerling, Kaloupek, Marx, Pless Kaiser, & Schnurr, 2015)

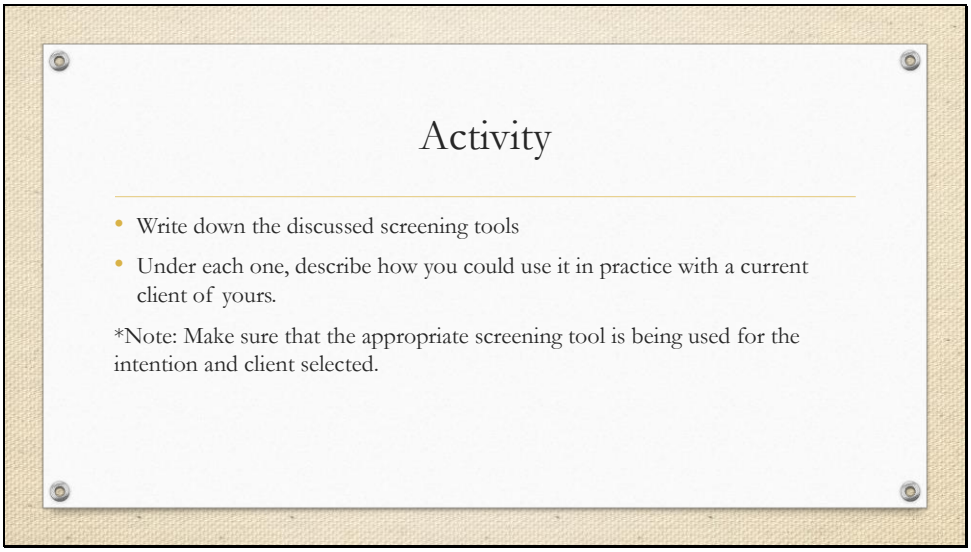
Slide 9


PC-PTSD-5 Continued
Severity is determined by the number of "yes" answers
If the first question regarding experience of a traumatic event is marked "no" then there is no need for completion of the remaining questions
The PC-PTSD-5 was updated with the release of the DSM-V, allowing to be used with all populations and possible traumatic events
The fourth version only screened for PTSD in the veteran population.
For up-to-date and evidence-based practice, the PC-PTSD-5 should be used rather than the PC-PTSD-4
(Prins, Bovin, Kimerling, Kaloupek, Marx, Pless Kaiser, & Schnurr, 2015)

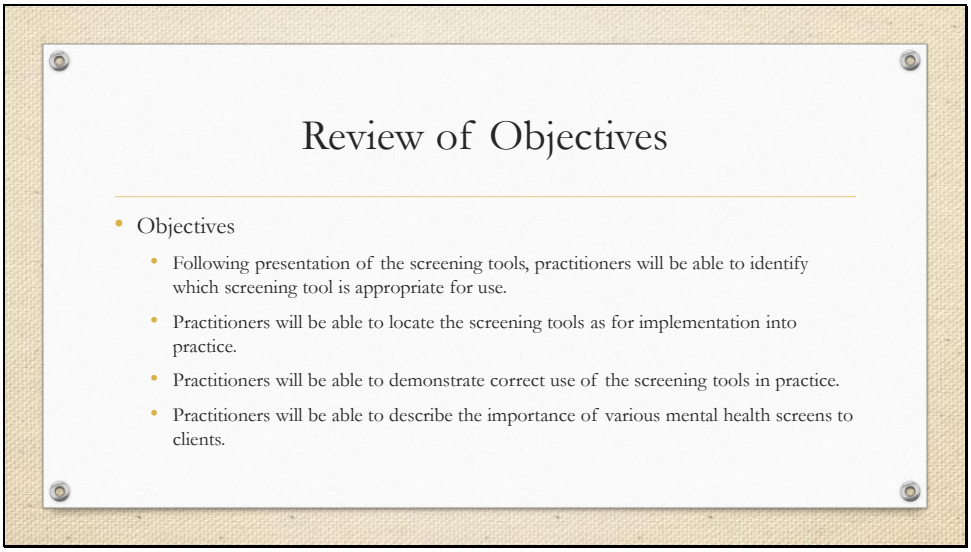
Slide 10


Connection to Theory
These screening tools focus on the connection to the person and contexts that an individual experiences
Person
The screening tools chosen are for the clinician to gain insight into the client factors and psychosocial factors that may be inhibiting their performance range.
Context
Examination of the individual's context can be further delved into following completion of the screening tools.
(Dunn, 2017)

Slide 11


Activity
Write down the discussed screening tools
Under each one, describe how you could use it in practice with a current client of yours.
*Note: Make sure that the appropriate screening tool is being used for the intention and client selected.

Slide 12


Review of Objectives
Objectives
Following presentation of the screening tools, practitioners will be able to identify which screening tool is appropriate for use.
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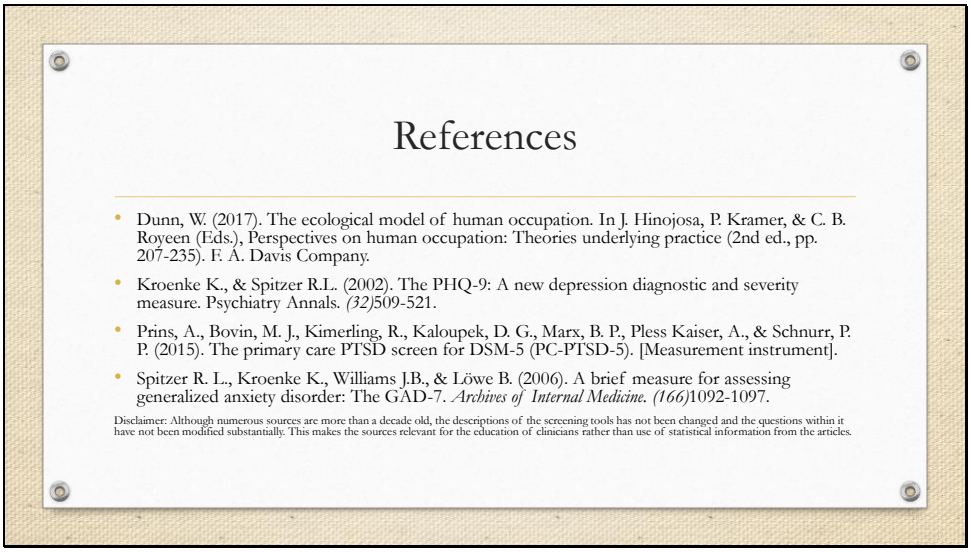
Practitioners will be able to describe the importance of various mental health screens to clients.

Slide 13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Prins, A., Bovin, M. J., Kimerling, R., Kaloupek, D. G., Marx, B. P., Pless Kaiser, A., & Schnurr, P. P. (2015). The primary care PTSD screen for DSM-5 (PC-PTSD-5). [Measurement instrument].
Spitzer R. L., Kroenke K., Williams J.B., & Löwe B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. Archives of Internal Medicine. (166)1092-1097.
Disclaimer: Although numerous sources are more than a decade old, the descriptions of the screening tools has not been changed and the questions within it have not been modified substantially. This makes the sources relevant for the education of clinicians rather than use of statistical information from the articles.

Tips for integration of mental health interventions into orthopedic practice

The intervention tip sheet focuses on the personal aspects of EHP. Looking at the sensorimotor and psychosocial skills the client has as these factors can influence their overall performance range. By being in control of one's person factors, allows individuals to better participate in available tasks within their context, therefore increasing their performance range. With an increase in control over personal factors, task participation can be increased as demonstrated by several intervention types listed below.

The first intervention techniques are geared towards numerous breathing techniques for uses based on individuals' specific needs. Not one breathing technique works for all individuals, which is why a compilation of various types were included on the tip sheet. The initial utilization of these interventions can be associated with the *establish/restore* EHP intervention as the client works to establish a new skill (Dunn, 2017). The techniques included are five-finger breathing, equal time breathes, pursed-lip breathing, and diaphragmatic/deep breathing. These intervention strategies focus on controlling sensorimotor aspects oneself may experience, such as internal anxiety levels, loss of control, or recurring traumatic thoughts. Through the implementation of these breathing techniques, one can increase their ability to participation in desired occupations and increase performance range. The listed breathing techniques can aid the client in control of sensorimotor factors. Using the *create* intervention strategy from EHP, breathing techniques can aid in supporting optimal performance circumstances through gaining control of one's body following increased anxiety, depression, or PTSD (Dunn, 2017).

The second set of interventions included focus on cognitive-behavioral therapy (CBT) techniques. The purpose of using CBT techniques is to aid the client in becoming aware negative thought patterns, and reframing thinking depending on the mental health symptoms they are displaying. Methods in this section include cognitive reframing, Socratic questioning, self-talk, affirmations, and behavioral experiments/therapy. The CBT techniques allow for focus on the cognitive and psychosocial factors of the person. These interventions also focus on person factors of the client to aid in increasing performance range through participation in tasks or increasing task availability. CBT techniques can be associated with the *establish/restore* EHP intervention type, establishing a new skill of guided discovery, positive self-talk, or use of affirmations. It can also aid in the restoration of lost skills following correct utilization for symptom management, taking into consideration that the symptoms they are experiencing was inhibiting their participation in daily activities that required restoring.

The final set of interventions are labelled miscellaneous as they do not fall into a specific category but may connect back to the others in some way. These interventions include seeking family/peer support, participation in valued activities, emotional regulation strategies, meditation, mindfulness, participation in physical activity, and time management strategies.

These interventions are a combination of person and context focused as they aim to increase task availability through changing one's context. These interventions can be associated with numerous EHP intervention strategies and will be discussed within each intervention listed below.

Each subsequent section can be used following collaboration between the clinician and client. Breathing techniques may be the easiest to use if symptoms were to onset rapidly. CBT techniques can be used over various sessions to aid in reconstructing clients' thoughts. And the miscellaneous interventions can be utilized during or outside of traditional therapy sessions.

Breathing techniques

The purpose of various breathing techniques is to teach the body to respond in a way that is not associated with the "fight or flight" response that the body has during experience of symptoms for anxiety, depression, or PTSD. Through engaging the parasympathetic nervous system, the person becomes in-control of their bodily response to these symptoms (Hazlett-Stevens & Craske, 2008; Upoyo & Taufik, 2019). These controlled breathing methods can aid in calming the sympathetic nervous system as to avoid increased symptoms associated with these diagnoses (Hazlett-Stevens & Craske, 2008; Upoyo & Taufik, 2019). Collaboration between the clinician and client and open discussion of each method can aid in finding the best method for their individual needs. To perform the following breathing techniques, walk through their preferred method as to facilitate symptom management.

*It is worth noting that breathing techniques are not always beneficial to all clients but are rather viewed as an option for intervention and symptom management.

Equal time breaths

The concept of equal time breaths is for the inhalation and exhalation phases to be equal in time performed.

How to perform equal time breaths:

- Starting in a comfortable, supportive, seated position, making sure one is relaxed.
- Begin with a low, deep inhale… counting 1, 2, 3.
- Following the inhale, immediately begin to exhale at the same pace… counting 4, 5, 6.
- Complete at least 10 times in a slow and rhythmic fashion, repeating steps 2 and 3.

*As one becomes proficient at this method, they can increase the equal time breaths to 4, 5, 6, etc. seconds.

*This is a great starting point for breathing techniques with minimal complications or difficulty.

(Dasari, Dhaniwala, & Dhaniwala, 2020; Upoyo & Taufik, 2019)

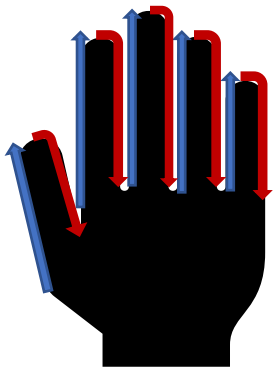
Five-finger breathing (a subset of equal time breaths)

These symptoms such as increased worrying, hyperventilation, feeling a loss of control, and others have the possibility of being controlled by breathing techniques that put the individual back in control of their body.

How to perform five-finger breathing:

1. Instruct the client to find a comfortable, seated position that allow them to relax while keeping the back straight.
2. Hold one hand in-front of your body, palm facing oneself.
3. With the opposite hand, place the pointer finger at the base of the thumb.
4. Using a slow and steady pace, begin tracing up the side of the thumb, breathing in until you reach the tip.
5. Once at the tip of the thumb, pause for 2 seconds.
6. Begin to exhale in a slow and controlled manner as you trace down the thumb into the web space.
7. Repeat steps 3-6 with the remaining fingers.
8. Complete as needed to control breathing or for symptom management.

*Diagram provided below for visual instruction



Blue = breathe in Red = breathe out

(Dasari, Dhaniwala, & Dhaniwala, 2020; Hazlett-Stevens & Craske, 2008; Upoyo & Taufik, 2019)

Pursed-lip breathing & Cooling breath

Pursed-lip breathing and cooling breath are similar methods with slight differences in technique.

How to perform cooling breath:

1. As with the other techniques, begin in a seated and comfortable position.
2. Next, form a cylindrical shape with your tongue, as if you were trying to roll your tongue together. This position allows for a cool influx of air when inhaling into the mouth and lungs which can be soothing to some.
3. In a slow and controlled breath, inhale for approximately 3-5 seconds.
4. Following the inhalation phase, begin to exhale out of both nostrils in a slow and controlled manner.
5. Repeat steps 2-4 at least 10 times or as needed for symptom management.

How to perform pursed-lip breathing:

1. As with the other techniques, begin in a seated and comfortable position.
2. In a slow and controlled breath, inhale through the nostrils for approximately 3-5 seconds or until your lungs are filled with air.
3. Next, purse your lips (as if you were to give a kiss). This positioning of the mouth assists in creating a negative or back pressure when exhaling.
4. Following the inhalation phase, begin to exhale out of your pursed-lips in a slow and controlled manner.
5. Repeat steps 2-4 at least 10 times or as needed for symptom management.

(Dasari, Dhaniwala, & Dhaniwala, 2020; Upoyo & Taufik, 2019)

Diaphragmatic & Deep beathing

Controlled method of breathing in which the diaphragm is used for inspiration and the abdominal muscles for expiration (Dasari, Dhaniwala, & Dhaniwala, 2020; Venes & Taber).

How to perform diaphragmatic breathing:

1. Start by laying comfortable on the ground, in a bed, or on a mat.
2. Place your hands over your lower abdomen, just above the belly button.
3. Breath in through the nose, feeling your abdomen rise as you inhale for approximately 3-5 seconds, or you feel your lungs are fully inflated with air.
4. Once the inhalation phase is done, hold the breath for 2 seconds.
5. Begin to exhale, feeling your abdomen deflate as you release air out of your lungs, using your diaphragm muscle to aid in exhalation.
6. Complete steps 3-5 approximately 5 times or as needed for symptom management.

How to perform deep breathes:

1. Begin in a comfortable position, whether that be seated or laying down.
2. Slowly and steadily inhale through the nostrils, allowing your chest to rise and inflate your lungs with air.
3. Pause and hold the breath for 1-2 seconds.
4. Slowly and steadily exhale out of your mouth, feeling your shoulders drop and depress through the completion of the exhalation phase.

(Dasari, Dhaniwala, & Dhaniwala, 2020; Hazlett-Stevens & Craske, 2008; Upoyo & Taufik, 2019)

Cognition-based therapy techniques

- A problem-focused interventions that strives to identify, understand, and challenge maladaptive beliefs, feelings, and actions (Davis & Noyes, 2019).

Cognitive reframing

- Distorted thoughts/beliefs are pinpointed and challenge with a willful thought/belief.
    - Identifying, reframing, and replacing cognitive distortions or perceptions with more realistic thoughts/attitudes/core beliefs (McCraith, 2019).
    - Common cognitive distortions include (Davis & Noyes, 2019):
        - Filtering – heavy focus on a single negative thought/aspect.
        - Catastrophic thinking – expecting the worst in every situation.
        - Discounting the positives – refusing to accept the good things in life, associating them with a negative.
        - Overgeneralization – applying experiences to each other, no matter the circumstances.
        - Personalization – blaming self for things outside of their control.
    - The purpose of cognitive reframing is to facilitate thinking away from cognitive distortions and think realistic thoughts regarding an individual's diagnosis.
    - Example:
        - A client being seen for a crush injury to the upper extremity is exhibit discounting the positives such as "I will never regain the use of my hand like I had before so what is the point of coming to therapy. It could also just get worse." Aiding in reframing that thought as "I am not where I want to be with the use of my hand, but I have made so much progress since the injury. I just need to keep working at it."

Socratic questioning

- Use of open-ended questions to guide thinking and avoid over-analysis (McCraith, 2019).
- For Socratic questioning methods to be beneficial, client buy-in and participation is required.
- Guided discovery:
    - Collaboration between client and therapist to aid in understanding and revealing information pertinent to the issue at hand (McCraith, 2019).
    - Examples:
        - "Can you provide an example or evidence as to why you think you'll never be able to do _____ again?"
        - "Can you further explain your difficulties?"
        - "What are some other viewpoints to approaching this problem?"

Self-talk

- Talking to oneself, specifically in a positive manner that can influence their psychological state (McCraith, 2019).
- Example:
    - "My care team believes it is possible to get back to my normal function. I just need to follow my home programming and put in the work. I can get back to doing everything I did before this injury."

Affirmations

- A form of positive self-talk that can assist in counteraction against negative or self-defeating thoughts with a possibility of negatively impacting one's performance range (Dunn, 2017; McCraith, 2019).
- Examples:
    - Negative: "I will never be able to work again. All I do is use my hands and I cannot even make a fist after the accident."
    - Positive: "If I work at therapy and in my home programming, the doctor said I should be able to make a fist. I should be able to work again, maybe just switch positions or even find a new job."

Behavioral experiments/therapy

- Techniques of altering maladaptive behaviors through the use of positive reinforcement (McCraith, 2019).
- How to perform a behavioral experiment:
    1. Identify the belief to be tested.
    2. Rate how strong the client believes in the belief. Use of a numerical rating scale of 1-10, 1 being the lowest and 10 being the highest.
    3. Plan an experiment to test the belief.
    4. Identify any obstacles to the experiment.
    5. Perform the experiment.
    6. Record the results.
    7. Reflect and re-examine the strength of the belief tested.
- Example: Client is recovering from a right-handed, 2nd metacarpal fracture, being in an ulnar gutter orthotic that limits the use of their dominant hand.
    - "Nobody will want to help me button my shirt, I have two hands so why couldn't I do it myself?"
    - Client rates belief on as a 7 on a scale of 1-10
    - Experiment: Next time you need to button a shirt, ask someone you trust or have a close relationship with; a parent, sibling or significant other.

- No obstacles identified. Possible obstacles include nobody being home when they need assistance.
- Experiment is performed outside of therapy session
- Results are recorded and brought to next therapy session
- Client reflects and re-examines strength of belief. Client changed rating to a 3 out of 10. Upon questioning, this was due to parents and significant other readily assisting the client in buttoning of their shirt. Realizing that this is only a short-term problem and there is no harm in asking for help, even if the help is denied.

Miscellaneous

Seek family/peer support

- Reaching out to family members for additional support when recovering from physical or mental health diagnoses can be beneficial to not just the individual seeking support, but also the individuals providing support (Shalaby & Agyapong, 2020).
- With increasing use of technology for communication, texting, calling, video calls and various other forms of communication are available to a wide variety of clients that may add to the convenience of these forms of communication.
- Seeking family/peer support can be associated with the EHP interventions of *establish/restore* and *alter* (Dunn, 2017).
    - *Establishing/restoring* support systems to aid in the increase of client performance range.
    - *Alter* the individual's environment to be in a physically supporting environment with their support systems.

Increase participation

- Participation in valued activities or modifications to those activities that allow for participation.
- Occupations can facilitate positive outcomes and have definite value on personal health and well-being (Prizur-Barnekow & Pickens, 2019).
- Increased participation can be associated with the EHP interventions of *establish/restore*, *adapt/modify*, *prevent*, and *alter* (Dunn, 2017).
    - *Establish/restore* the individual's participation in valued occupations.
    - *Adapt/modify* parts of the context to facilitate participation in valued occupations or making direct changes to the task itself to increase participation.
    - *Prevent* increased mental health symptoms relating to anxiety, depression, or PTSD through participation in valued occupations.
    - *Alter* the environment completely by going to a new context for participation in the valued occupations.

Emotional regulation

- Management of one's feelings and how they express those emotions (Giroux, McLaughlin, & Scheinholz, 2019). People can manage their emotions at any time, such as before, during or after an emotional response. Being aware of when an emotional response is imminent can help someone prepare for the event.
- How to facilitate emotional regulation of a client (Renna, Quintero, Fresco, & Mennin, 2017):
    - Acknowledge the presence of emotions in our daily lives.

    - Emotions and emotional responses are valid and should be expressed, expressing them appropriately is the challenge.
        - Learn people, places, things, or events that may trigger an emotional response.
    - Work to interpret what those emotions are trying to tell us.
        - Respond to an unwanted emotion with something positive; favorite picture, favorite food (eating within reason and not binge eating) or doing something enjoyable.
        - Calm your senses with integration of the above breathing techniques.
- Emotional regulation can also be guided using earlier stated CBT techniques to gain further insight into one's emotions.
- Emotional regulation strategies can be associated with the EHP intervention *prevent* as to avoid, or work to avoid increased emotional responses following increased symptoms of anxiety, depression, or PTSD (Dunn, 2017).

Meditation

- Contemplative thinking to control stress, improve relaxation, focus, and lower heart rate (Venes & Taber).
- Mindfulness
    - Subset of meditation focused on breathing awareness, increasing positive attitude and stable mind (Venes & Taber).
- Meditation can be used as a form of emotional regulation, being in the moment and aware of the emotions you are experiencing can help to increase mindfulness (Giroux, McLaughlin, & Scheinholz, 2019).
- Knowing that emotions can trigger a response, either negative or positive, the person can work to achieve the desired goal without influence from the emotional event (Giroux, McLaughlin, & Scheinholz, 2019).
- Meditation aligns with the EHP intervention of *prevent* as a preventative measure to avoid increased symptoms of anxiety, depression, or PTSD (Dunn, 2017).

Physical activity

- Participation in physical activity can have a positive impact on client mental health and relief of symptoms relating to anxiety and depression (White et al., 2017).
- Although this is fairly dependent on client motivation, as research states benefits are mainly seen following self-induced physical activity (White et al., 2017).
- The broad definition of physical activity allows for client to choose what they might enjoy with the added benefit of decreased anxiety or depression symptoms. This could include

going for a walk, running, strength training, participation in sports or other movement-based leisure activities.

- Physical activity can also be associated with the *prevent* EHP strategy as to preclude development of increase symptoms (Dunn, 2017).

Time management strategies

- Implementation of time management strategies can aid in gaining or maintaining control of one's life, especially in factors that are within our control to begin with.
- Make a schedule for day-to-day activities.
    - Implement a planner, whiteboard calendar, or daily to-do list to keep a schedule and stay on track with important tasks that need to be completed.
- Set priorities (Waterworth, 2003).
    - Create a list based on level of necessity.
    - Make sure to not engulf yourself too much in the completion of the list, keep the priority numbers at a manageable level.
    - Allow for flexibility while staying on track for completion of top-level priorities.
- Get organized
    - Plan out your most productive days of the week.
    - Use the schedule and priority list to stay organized throughout the week.
- Minimize procrastination.
    - Set goals for yourself and timelines/deadlines that you plan or want to plan to have things done by. This keeps you accountable.
- Time management strategies can be associated with the EHP interventions *establish/restore*, *adapt/modify*, and *prevent* (Dunn, 2017).
    - *Establish/restore* interventions being used to establish a new skill that the individual may not currently be using for time management.
    - *Adapt/modify* their contexts such as adding a calendar for better scheduling, staying organized, and having priorities set.
    - *Prevent* the use of time management strategies in general to aid in feeling in control of one's daily life and avoid feelings of anxiety, depression, or PTSD.

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Referrals Quick Reference Resource

This section of the product was developed with the contextual aspects of EHP in mind. Looking at the various settings for continued care; the physical, temporal, social, and cultural all influence the person and their overall performance range. The inclusion of these various settings is to aid in increasing performance range of clients based on the level of care they need. Whether the client needs outpatient; coming into the clinic to receive care then leaving following the appointment, which needs a referral from the clients' primary care provider. Clients receiving inpatient care, the most restrictive of the bunch, focuses on caring for severe symptoms that need to be monitored by health professionals, normally in a hospitalized setting, requiring a high level of care to address their psychiatric symptoms, distress levels, and appropriate coping strategies (Mahaffey, Dallas, and Muñoz, 2019). Partial hospitalization programs are a middle ground, clients can participate in a PHP if you do not need to be monitored 24/7 by health care professionals but need more comprehensive attention than outpatient care can provide. Clients receive treatment throughout the day and go home at night. Therapy sessions are structured that will be less structured than inpatient programs, allowing more freedom from clients (Mahaffey, Dallas, and Muñoz, 2019). Community-based services accommodate to a variety of needs to aid in participation of valued occupations and provide support to peers/member. The aim is to increase client performance range with reintegration of valued occupations (Mahaffey, Dallas, and Muñoz, 2019). Lastly, the inclusion of different types of virtual care, including video visits or e-visits which are similar to outpatient therapy services with a higher availability to all populations, specifically the rural. Continued information on how to go about virtual care is presented below. The aim for all therapy referrals is to aid in the increase of available tasks within the clients' context (Dunn, 2017). A person's context can either support or be a barrier to their performance range, through client and therapist collaboration, a best fit can be chosen for maximum benefits of the individual.

The creation of this portion of the product was driven by the need for clinicians to know where they could direct clients experiencing continued mental health illness symptoms following their orthopedic injuries. Clinicians are the intended audience for this portion of the product, although it is encouraged to be used in collaboration with the client being served as a continuation of care. The hope with this handout is to provide a means to open conversation between clinician and client to help the client understand the possible next steps in their care to fit their needs. A limitation of this referral resource is the small amount of mental/behavioral health care that is available in Bismarck, as this is an urban area that rural citizens come to for healthcare needs.

TYPE OF CARE	LOCATION	PHONE NUMBER	WHEN TO REFER
OUTPATIENT MENTAL/BEHAVIORAL HEALTH	Sanford East Interstate Ave Clinic – Behavioral Health: 1800 E Interstate Ave, Bismarck, ND 58503	(701)323-6543	• Intervention strategies from the "Tip Sheet" have not been effective • Client feels they could use separate care for mental/behavioral health and orthopedics
VIRTUAL CARE	N/A: Can be done from anywhere with a stable phone/internet connection	N/A: Use of MyChart through Sanford to setup appointments • Steps listed below.	• Can be used by all populations within the Sanford system • Targets rural clients well, but also beneficial to all as to reduce travel and in-person appointments • Same level of care as outpatient, just a more accessible setting
COMMUNITY-BASED CARE	Mental Health America of ND: 523 N 4th St #2, Bismarck, ND 58501	(701)255-3692	• When clients are looking for peer/community support with their mental health symptoms • If the client were to display that

			they want added support outside of therapy sessions
PARTIAL HOSPITALIZATION PROGRAM	CHI St. Alexius Partial Hospitalization Program: 315 N 11th St, Bismarck, ND 58501	(701)530-7255	• Following discussion on level of care the client thinks they need; PHP is more restrictive than outpatient but allows for a higher level of care but not 24-hour monitoring
INPATIENT MENTAL/BEHAVIORAL HEALTH	Sanford Emergency & Trauma Center: 300 N 7th St, Bismarck, ND 58501	911	• When the client needs a high level of 24-hour care, is a danger to oneself or others, and interventions on the "Tip Sheet" are not effective • Screening tools can be utilized here if client scores highly on the PHQ-9, GAD-7, or (PC-PTSD-5).

*Note: All referrals will be based on level of symptoms the client states they are experiencing and following collaboration between therapist on client on next best step for continued care.
*The services compiled gave verbal permission for use on this product.

Instructions for Virtual Care through Sanford:

- Virtual care offers convenient appointment options. Clients can connect with a specialist using their computer, tablet, or smartphone.
- Video visits
    - On-Demand video visits are available 24/7 for acute/urgent care (but non-emergency) medical needs. Log in to My Sanford Chart and select “Acute/Urgent Care Video Visit” to request a video visit with the next available acute/urgent care provider.
    - Scheduled video visits with your current provider in place of clinic visit may also be available. Log in to My Sanford Chart and select this option under “Appointments and Visits.”
- E-visits – E-visits are a simple and easy option for every member of the family. Request an e-visit by completing a brief questionnaire using your My Sanford Chart account. A Sanford Health provider will then review your submitted information within four hours. They will respond with a treatment plan, prescription order or a request to see you in person.
    - Sanford E-Visits are available seven days a week to clients in Iowa, Minnesota, Nebraska, North Dakota or South Dakota who have previously seen a Sanford Health provider. Some restrictions may apply for certain Sanford Health locations.

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APPENDIX B

Good day to you. My name is Tyler Stecher, and I am a student in the University of North Dakota's Occupational Therapy Doctoral Program. In January of 2022, I will begin a placement at your facility. I will be learning about occupational therapy in an upper extremity orthopedic setting and also working to complete a project as part of my finishing my degree.
I am sending you this survey in the hopes that you will respond so that I can gain further insight into the nature of the occupational therapy in an orthopedic setting, common diagnoses of individuals with whom you work, as well as the assessments and interventions you use. I will be on site, using the information to build a program that aims to implement orthopedic interventions with interventions for psychosocial factors. I would like to thank you in advance for taking the time to respond to this survey contributing to my graduate project.

1. How would you classify the individuals' diagnoses and injuries you see most often?
    a. Traumatic
    b. Non-traumatic
2. What are the most common diagnoses of your clients? (The Role of Occupational Therapy for Rehabilitation of the Upper Extremity, n.d.). Choose all that apply.
    a. Rotator cuff injuries
    b. Fractures
    c. Arthritis
    d. Amputations
    e. Crush injuries/trauma
    f. Cumulative trauma
    g. Dislocations/subluxations
    h. Ligament injury/instability
    i. Muscle strains/tears
    j. Tendon injuries
    k. Nerve injuries or conditions
    l. Pain
    m. Wounds and scars
    n. Neuromuscular pathologies
    o. Other: short answer box/fill in the blank option
3. What are your primary method of assessment/evaluation for individuals with orthopedic injuries? Choose all that apply (Almhdawi et al., 2014).
    a. Manual muscle testing
    b. Range of motion
    c. Dynamometry
    d. Provocative Testing
    e. 9-hole peg test
    f. Assessment of Motor and Processing skills (AMPS)

g. Disabilities of the Arm, Shoulder and Hand (DASH/QuickDASH)
h. Manual Ability Measure
i. Brief Pain Inventory
j. Visual Analog Scale for Pain
k. Numerical Pain-Rating Scale
l. Stanford Pain Scale
m. Semmes-Weinstein Monofilament Test
n. Box and Block Test
o. Jebsen Test of Hand Function
p. Minnesota Rate of Manipulation Test
q. 2-point Discrimination Test
r. Motor Assessment Scale (MAS)
s. Wolf Motor Function Test (WMFT)
t. Fugl-Meyer Motor Assessment (FMA)
u. Miller Function and Participation Scales
v. Action Research Arm Test
w. Arm Motor Ability Test
x. Functional Reach Test
y. Gross Motor Function Measure
z. Modified Barthel ADL Index
aa. Other: short answer box/fill in the blank option

4. How often are you evaluating individuals' psychosocial factors in relation to their orthopedic injury? If never is chosen, skip to question 7.
    a. Never
    b. Sometimes
    c. About half the time
    d. Most of the time
    e. Always
5. How are you currently evaluating the psychosocial aspect (depression, anxiety, isolation, grief, social skills, behavior regulation, stress, fear, PTSD, suicidal ideation, sleep or other mental health diagnoses) of individuals?
    a. Occupational Self-Assessment (OSA)
    b. Model of Human Occupation Screening Tool (MOHOST)
    c. Depression, Anxiety, and Stress Scale (DASS-42)
    d. Patient Health Questionnaire (PHQ-9)
    e. Epworth Sleepiness Scale
    f. Canadian Occupation Performance Measure (COPM)
    g. Occupational Circumstances Assessment Interview Rating Scale (OCAIRS), Version 4
    h. Volition Questionnaire

    i. Allen Cognitive Level Screen, Version 5
    j. Occupational Performance History Interview (OPHI)
    k. Performance Assessment of Self-care Skills
    l. Not assessed
    m. Other: short answer box/fill in the blank option
6. What interventions are you currently using to address individuals' psychosocial factors associated with orthopedic injuries?
    a. Cognitive Behavioral Therapy (CBT)
    b. Coping and self-regulation strategies
    c. Education
    d. Lifestyle Redesign®
    e. Dunn's Model of Sensory Processing
    f. Psychoeducation
    g. Refer patient to mental health center or specialist
    h. Other: short answer box/fill in the blank option
7. What are your orthopedic clients' most common co-occurring diagnoses?
    a. Anxiety
    b. Depression
    c. Post-traumatic stress disorder (PTSD)
    d. Self-harm
    e. Other: short answer box/fill in the blank option
8. What is the primary age range of the majority of your clients?
    a. 0-9
    b. 10-17
    c. 18-24
    d. 25-29
    e. 30-34
    f. 35-39
    g. 40-44
    h. 45-49
    i. 50-54
    j. 55-59
    k. 60-64
    l. 65-69
    m. 70+
9. How would you describe where your clients live?
    a. Rural – defined as an area with a population of 10,000-49,000 people (*Defining Rural Population*, 2017).
    b. Urban – defined as an area with a population greater than 50,000 people (*Defining Rural Population*, 2017).

10. Which of the following best reflects your practice setting (AOTA 2019 Workforce and Salary Survey, n.d.)?
    a. Comprehensive outpatient rehabilitation facility
    b. Physician's office
    c. Private practice
    d. Home health agency
    e. General hospital – acute, inpatient
    f. Hospital-based outpatient
    g. Rehabilitation hospital/unit
    h. Hospital subacute unit
    i. Other: short answer box/fill in the blank option
11. What do you believe to be the biggest needs in your clinic right now in regard to client psychosocial wellbeing? Please provide as many needs as possible.
    a. Fill in the blank
12. What do you believe to be the biggest needs in your clinic right now in regard to therapists and being able to treat patients holistically? Please provide as many needs as possible.
    a. Fill in the blank

I would like to thank you for taking the time to answer this survey. I will do my best to build a product that is useful for your practice and your clients. If you have any questions, please contact me at: [redacted] Thank you.

References

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