

**A SURVEY OF PRACTITIONERS: OCCUPATIONAL THERAPY AND
CHRONIC PAIN**

A Thesis submitted to the faculty at Stanbridge University in partial fulfillment of the
requirements for the degree of Master of Science in Occupational Therapy

by

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Certification of Approval

I certify that I have read A Survey of Practitioners: Occupational Therapy and Chronic Pain by Roxanne Dluzak, Michael Kim, Sofia Popat, and Judy Wu and in my opinion, this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy at Stanbridge University.



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Abstract

This thesis project focused on occupational therapy's evolving role in the treatment of chronic pain through an examination of various interventions used. We conducted a survey of practicing occupational therapists that sought to investigate the trends in evidence-based practice by occupational therapists treating individuals with chronic pain. Through this survey, it was found that occupational therapists are using evidence-based practices in treating chronic pain. Specifically, the most common treatment interventions that our respondents reported they use to treat chronic pain are: energy conservation strategies, task adaptation, coping strategies, relaxation techniques, breathing techniques, and pacing. Occupational therapists are recommended to use evidence-based occupation specific interventions to maintain their unique contribution to treating individuals that have chronic pain.

Keywords: Chronic pain, evidence-based practice, occupational therapy, survey, occupation-based

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A Survey of Practitioners: Occupational Therapy and Chronic Pain Management

Chronic pain affects one in four Americans (Dahlhamer et al., 2018). Without proper treatment, it can lead to a loss of confidence in ability to perform meaningful daily tasks, which precipitates a loss of ability to participate in said meaningful tasks. Chronic pain can be defined as persistent pain that has lasted for at least three months (Franceschelli & Mitchell, 2019). It is linked to a variety of poor outcomes, including: poor engagement in daily activity, limited mobility, opioid dependence, depression, anxiety, and poor perceived health or reduced quality of life (Dahlhamer et al., 2018). Based on current literature, occupational therapists are important members of the interdisciplinary team that treats chronic pain, however, they need to define their distinct role in their treatment of chronic pain (Robinson et al., 2011). While a biomechanical frame of reference may be successful in treating symptoms caused by acute pain, the interdisciplinary approach is critical because chronic pain cannot be solved purely from a biomechanical frame of reference. This is largely due to the psychosocial factors that contribute to chronic pain. Therefore, occupational therapists have a unique and necessary role in chronic pain treatment by assessing daily living performance, identifying valued activities, and using evidence-based practices to address client's goals (American Occupational Therapy Association [AOTA], 2014). Occupation-based interventions are the foundation of the occupational therapy (OT) profession and revolve around using occupations as a means and an end in treatment to facilitate independence in daily life activities. It is imperative that OT develops and strengthens the evidence behind using occupation-based interventions in their treatment of chronic pain to ensure that OT

practitioners continue to bring exclusive contributions to the treatment of individuals with chronic pain.

Statement of the Problem and Statement of Purpose

Many of the common diagnoses that cause chronic pain in individuals occupational therapists treat include osteoarthritis, fibromyalgia, and complex regional pain syndrome (Guy et al., 2019). Treating chronic pain in the United States costs between \$560 to \$635 billion per year (Tefft & Jordan, 2016). Occupational therapists are equipped to help clients with chronic pain because they understand that chronic pain is influenced by psychological and cognitive factors. In addition to physical factors, OT practitioners have been educated on which interventions are most appropriate (Hofmann, 2019).

Currently, there is a lack of sufficient evidence to support the use of occupation-based interventions for treating people with chronic pain (Robinson et al., 2011). Instead, occupational therapists have relied heavily on evidence from fields such as psychology, and adopted techniques such as mindfulness and cognitive behavioral therapy (CBT) when treating chronic pain. While mindfulness can be used to reduce pain, there is a lack of direct evidence that a reduction of pain results in enabling occupational performance and function, which is one of the major goals of OT treatment (Hardison & Roll, 2016). Pain and function are modestly correlated and it cannot be assumed that a reduction of pain is always accompanied by an improvement in function (Robinson et al., 2011). Activity patterns in the chronic pain population are influenced by cognitive, emotional, and social factors in addition to pain levels (Robinson et al., 2011). Thus, an overreliance on other disciplines' interventions may lead to not directly meeting the occupational

needs of patients with chronic pain. Instead of aiming for a complete reduction of pain, occupational therapists should focus on helping clients manage their pain to ultimately increase their function. It is important to realize that for many clients their pain may never dissipate completely, but OT interventions can still help them to improve their quality of life.

OT practitioners have advocated for OT services in pain management. To address the opioid epidemic, OT has made advancements through policy by advocating for the field's importance in pain management. For example, in 2018, Congress included OT in the SUPPORT Act, which seeks to improve availability and access of non-pharmacological pain interventions. Thus, it is imperative that occupational therapists are using occupation-based interventions for chronic pain to support and justify their inclusion in this law. Ultimately, this law aims to encourage the use of non-pharmacological pain management strategies for chronic pain in order to combat the opioid crisis, and occupational therapists have a big role to play in this (AOTA, 2018).

Additionally, there is a need for occupational therapists to advocate for occupation-based interventions specifically in vocational rehabilitation; occupational therapists have a wealth of knowledge on activity analysis and focusing on returning to work is an appropriate focus of OT (Robinson et al., 2011). It is necessary for the OT profession to grow the body of evidence that supports the efficacy of OT interventions in supporting the needs of people with chronic pain—specifically, enabling them to participate in activities such as work and leisure.

While there have been focus groups conducted with occupational therapists to assess what they perceive as indicators of a need for OT, there are few surveys assessing

current trends of OT interventions used to treat people with chronic pain (Skjutar et al., 2009). We conducted a survey to compare which interventions occupational therapists are using with what occupation-based interventions the literature supports. This survey also aimed to identify which assessments occupational therapists are using to compare their client's baseline assessment scores against their outcome measures.

The anticipated outcome was a representative data sample describing current trends of OT interventions utilized with the chronic pain population. Our hypothesis was that the data would reflect that occupational therapists are generally not implementing evidence-based, occupation-based practices in treatment of individuals with chronic pain. We hoped that this information would allow further research to be more precise in filling the gap in this body of research and, in turn, shed light on an occupational behavioral view of pain.

Theoretical Framework

The most relevant OT theoretical framework to treat chronic pain is through the Model of Human Occupation (MOHO). Introduced by Gary Kielhofner and Janice Burke in 1980, MOHO allows for an occupational behavioral view of pain (Gusich, 1984). This occurs by having the occupational therapist consider the patient's volition and potential barriers to the efficacy of interventions. Such barriers consist of a lack of motivation to participate or a loss of belief in skills. Patients with chronic pain may also start to develop a habit of dependence on medication or family members, leading to unhealthy routines in order to avoid or diminish pain. Finally, patients may fear that continued performance of skills may intensify pain, leading to an inability to adapt. When occupational therapists consider volition, habituation, and performance of patients in the context of chronic pain,

they can gain a holistic treatment approach for their patients that suffer from chronic pain that treats the entire person and not just their deficits. A holistic treatment approach is important because chronic pain often involves physical, cognitive, and psychological elements simultaneously (AOTA, 2014).

In addition, MOHO can be integrated with motivational interviewing to improve return-to-work outcomes (Park et al., 2019). Motivational interviewing is a client-centered and evidence-based tactic that facilitates behavioral change by helping clients clarify their motivation behind behavior and resolve ambivalence about their behaviors. Motivational interviewing brings awareness of the client's volition, habituation, and performance capacity by inquiring about their self-efficacy, readiness for change, commitment language (commitment, activation, taking steps), and assertiveness. Considering these factors has been found to increase clients' personal causation, career values, work autonomy, and, overall, lead to positive return-to-work outcomes (Park et al., 2019).

Literature Review

Common Practices for Treating Chronic Pain

CBT, graded motor imagery, mindfulness-based stress reduction (MBSR), eye-movement desensitization reprocessing (EMDR), patient education, and self-management interventions were explored via a literature review of evidence-based chronic pain interventions.

Robinson et al. (2011) explain that CBT has been identified as the most appropriate approach in multidisciplinary pain treatment and that occupational therapists have developed expertise in the use of CBT with people with chronic pain. However, this

is a psychological intervention that is not exclusive to OT, which may lead to occupational therapists duplicating treatments of other members of the interdisciplinary team, and not properly advocating for their own profession. Furthermore, despite its proven efficacy, CBT may contribute to negative patient experiences by over-emphasizing the psychological aspect of chronic pain (Robinson et al., 2011). Because of feelings of their experience being minimized, it is often difficult for individuals with chronic pain to understand their pain experience in a psychosocial framework and they may not understand a therapist who is interpreting it that way.

Graded motor imagery was noted in one study to address phantom limb pain, complex regional pain syndrome, chronic musculoskeletal pain, and pain after a stroke (Mekonen, 2019). Graded motor imagery utilizes laterality training, explicit motor imagery, as well as mirror therapy to reduce pain. Laterality training is a necessary first step because it does not neurologically activate any of these cortices (Mekonen, 2019). Laterality training first activates the premotor regions of the brain. This is accomplished by teaching the patients to differentiate when the left versus right side of the body is being touched without activating the motor or primary somatosensory cortices. This is something that individuals that have neurological difficulties struggle with. Laterality training is used to prepare the brain for movement, while not allowing the primary somatosensory and motor cortices to activate.

Explicit motor imagery is step two in treating chronic pain with graded motor imagery (Mekonen, 2019). The patient will start imagining the unaffected limb moving, then gradually imagine the affected limb moving. This imagery allows the actions to be completed mentally without inducing pain. This is because it slowly activates the motor

cortex. If the individual just moved the limb prior to imagining it, this would induce pain due to too much stimulation in the motor cortex.

The last step of graded motor imagery is to use mirror therapy (Mekonen, 2019). Mirror therapy is when an individual has a mirror placed in front of them which blocks the sight of the affected limb. The patient is instructed to move and complete exercises with their non-affected limb. Mirror therapy creates an activating response in the primary motor cortex of the affected hand, while tricking the brain into thinking the affected limb is in motion.

MBSR has been used to reduce pain and to boost functionality of individuals that have chronic low pain (Morone, 2019). The study stated that patients may not be privy to the knowledge that MBSR will work, because it is not a pharmacological intervention. OT practitioners must educate their patients that they understand their experience of pain is real and that pharmacological interventions are not the only way to treat chronic pain. Patients who do not receive this education may think practitioners only think the pain is in their head. Morone (2019), conducted a randomized control study in which MBSR was the intervention for the experimental group. Outcomes of the study were that after six months, one third of the experimental group had a 30% improvement in the reduction of pain intensity in comparison to the control group. After eight weeks, there was a 50% statistically significant improvement in current pain for the experimental group, and the functionality of patients improved as well. Moreover, when assessed using the Roland and Morris Disability Questionnaire, there was a five-point improvement in disability for 35% of the patients who received MBSR, versus 22% of the control group. A main take

away from this study is that patients need to understand basic pain neuroscience in order for MBSR to have an effect.

A literature review by Tefft and Jordan (2016) evaluated the effectiveness of EMDR in the treatment of chronic pain. Articles for this study were included if they reported on the use of EMDR in chronic pain conditions, somatic symptoms, or medically unexplained symptoms. This study found that EMDR is an effective intervention for decreasing chronic pain. EMDR is considered an evidence-based practice for treating chronic pain. The outcomes for the study show positive implications for EMDR treating chronic pain for those that have and have not experienced trauma.

A level one systematic review was conducted regarding the evidence for the effectiveness of interventions within OT to address occupational performance, pain, fatigue, depression, and sleep in people with fibromyalgia by reviewing 42 articles (Poole & Siegel, 2017). Results from the study concluded that exercise, guided imagery, multidisciplinary approaches have been found to decrease pain. Tai chi, yoga, and aquatic therapy need more research, because at this time their improvements are not clinically significant in reducing pain. This review did not find evidence that self-management programs that include guided imagery, mindfulness, and emotional disclosure to be effective in treating chronic pain long term.

Occupational Therapy's Unique Contribution

It is important to realize that in many chronic pain cases, significant pain reduction is not possible; the main goal instead should be increasing function and role participation. This goal aligns with the professional goals of OT which, for treating chronic pain, include improved activity performance and improved function that allows

for increased participation in meaningful occupations (Robinson et al., 2011). Various studies assessing occupational therapists' role in treating chronic pain have utilized the Canadian Occupational Performance Measure (COPM) to assess functional capacity and occupational performance in patients, before and after the treatment program (Simon & Collins, 2017). The COPM is an occupation-based measurement for progress that can be used to justify occupational therapists' involvement in treating chronic pain. The COPM identifies three functional areas to examine a client's self-perception of their performance: self-care, leisure, and productivity. For each item on the COPM, a client can rate their performance and their satisfaction out of a scale of 1 to 10. A change in two or more points on a single item in the COPM is clinically significant (Simon & Collins, 2017).

When treating chronic pain, occupational therapists are often part of an interdisciplinary team. The efficacy of interdisciplinary rehabilitation on chronic pain was examined in a study that involved 132 participants who were enrolled in a pain rehabilitation center and had a primary diagnosis of central sensitization syndrome (Kurklinsky et al., 2016). This particular team included physical therapists, occupational therapists, and a pain psychologist. The OT portion of the treatment was focused on increasing functional independence and role participation. Occupational therapists would take an educational route and teach patients proper body mechanics, cognitive strategies, fall prevention, workspace ergonomics, and provide individual biofeedback sessions. The COPM was utilized during the OT evaluation and reassessment. On average, the patients in this program had significant increases of 4.1 points for performance scores and 5.1 points for satisfaction scores (Kurklinsky et al., 2016). This study provides support for

occupational therapists working in an interdisciplinary team to help patients experiencing chronic pain to increase their satisfaction and occupational performance.

Another intervention that has been shown to be clinically effective is the lifestyle redesign program. This is an OT treatment method focused on developing healthy self-care routines and habits in chronic pain patients suffering from complex regional pain syndrome, lower back pain, and myalgia (Simon & Collins, 2017). This intervention utilizes module topics specific to chronic pain that were taught to patients in individual sessions; these modules focused on a wide range of health management topics such as routines, medication management, body mechanics, activities of daily living (ADLs), and general pain management. This study found that the means of the COPM performance and satisfaction measures were significantly increased by 2.02 and 2.78 points (Simon & Collins, 2017).

Pacing is another pain management intervention that can be used by occupational therapists for clients with chronic pain. According to a systematic review, pacing can be defined as a strategy that involves preplanning rest breaks or spreading out a task to increase functional tolerance (Guy et al., 2019). Pacing can include “pacing up” to increase activity tolerance or to reintroduce an activity to a client. This study examined the efficacy of pacing for chronic pain populations and found that while this intervention strategy does not reduce pain, pacing can lessen the interference of fatigue and reduce variability in physical activity. This further affirms why it is necessary to separate reduction of pain from increasing function, independence, and activity performance. Occupational therapists should focus on enabling occupational performance and increasing participation in their clients and this may not be accompanied by a reduction in

pain. All of the studies within this systematic review utilized pacing from an educational perspective instead of as a technique used while engaging in a specific occupation. Thus, more research utilizing pacing specifically in occupations is necessary.

Patient Perspectives

A common theme seen throughout various patient interviews is that chronic pain is life changing. Patients have had to abandon jobs, former social networks, and experience a myriad of troubling emotions on a daily basis (Persson et al., 2011; Fisher et al., 2007). Despite these issues, chronic pain patients have adapted without interventions. For example, they reappraise their daily occupations by altering either the process itself or their values (Persson et al., 2011). They do this by slowing down their pace and performance, opening up for improvisation, daydreaming, or prioritizing activities that distract them from pain. They also accept social restrictions, upgrade loneliness, find non-material values, or simply appreciate the ordinary. Another adaptation chronic pain patients have had to make is getting used to taking breaks (Aegler & Satink, 2009). This is not easy because physically interrupting a task triggers ongoing thoughts and emotions about their body, such as any changes or signs of pain. In response, patients have reported following a self-organized time schedule and tried to follow sub-goals.

Perhaps the biggest takeaway for practitioners is that chronic pain and occupation are reciprocally related forces (Aegler & Satink, 2009). After all, engaging in occupations is based on the innate need of human beings to be active. In doing so, pleasurable occupations reduce the perception of pain. In one example, patient John stood for three quarters of an hour to finish making potato salad for his family. His desire to make food for his family superseded his feelings of pain. Afterwards, he felt pain for three days.

This example shows that pressures from patients' social environments influence their pain behavior, as well as their value system.

Chronic Pain-Related Conditions

Fibromyalgia (FM) is a rheumatic disorder that affects an individual's abilities to be independent in their ADLs due to musculoskeletal pain, fatigue, and tenderness (Poole & Siegel, 2017). The symptoms associated with FM are varied, so it is difficult to treat. Yet, due to occupational therapist's ability to provide activity and environmental adaptations they are qualified to treat patients who have deficits in their occupations caused by problematic FM symptoms.

Chronic low back pain has been reported as a chronic pain condition that has led to more individuals using opioids as an intervention to reduce pain (Morone, 2019). This condition creates a nonstop sense of discomfort that impedes upon daily functioning when severe enough (Wattamwar & Nadkarni, 2013). Flare ups in back pain can cause difficulties with occupations such as recreation, paid work, and daily occupations.

A study conducted in 2019 examined the relationships between individuals that have arthritis and their relationship between functional disabilities in the areas of mobility, ADLs, and instrumental activities of daily living (IADLs) when pain was addressed homogeneously versus heterogeneously (James et al., 2019). The study's results stated that individuals that experienced an improvement in pain did not see improvement in their mobility or their ADLs. Therefore, reinforcing the need for occupational therapists to treat individuals with a diagnosis of osteoarthritis. As expected by occupational therapists, those who had an increase in pain exhibited an increase in functional disability.

Complex regional pain syndrome is a neurological disorder that typically occurs after a triggering event or trauma (National Institute of Neurological Disorders and Stroke, 2017). Changes occur in the central nervous system and peripheral nervous system result in the demyelination of nerves at the site of the original injury (Halicka et al., 2020). Other symptoms such as vascular changes, temperature changes, range of motion decreases, and allodynia can also occur (Lundy-Ekman, 2018). Another condition that elicits chronic pain is phantom limb pain. Phantom limb pain is when an individual senses pain in the limb that has previously been amputated (Mekonen, 2019). This pain can last for years and can drastically decrease an individual's mobility, which may lead to decreased independence in occupations.

Hemiplegic shoulder pain is a form of chronic pain and is one of the four major medical complications following a stroke along with depression, falls, and urinary tract infections (Kumar et al., 2021). Through a questionnaire, researchers found that evidence-based guidelines for treating chronic pain include: pain education, physiotherapy with advice, and pain self-management techniques (Kumar et al., 2021). Time constraints was one barrier that 60% of therapists who responded identified as an issue to providing appropriate care for those with hemiplegic shoulder pain. Other barriers to treatment included perceived lack of resources, shortened stroke pathway, lack of awareness among the interdisciplinary team, lack of evidence, and patient anxiety. Overall, there is a need for stronger evidence in management for hemiplegic shoulder pain and a better understanding of individual patient experiences.

Migraines are associated with significant pain and disruption in ability to do day to day activities. In a study examining the effect of the intervention of pacing on migraine

management, pacing was taught by occupational therapists and framed as a technique to allow individuals perform activities while not exacerbating headache triggers or symptoms. It was found that by using pacing, patients reported improvements in their quality of life, functional performance, and increased confidence in how they manage their migraines. In this study, 65% of participants used pacing to decrease the intensity of their migraine and 40% of participants reported that pacing could help shorten the duration of the migraine (McLean et al., 2012).

Cancer-related chronic pain is associated with declining health-related quality of life scores. Chronic pain also negatively impacts employment in working age cancer survivors. Thus, this is a clear indication of the need for OT to help facilitate vocational rehabilitation as well as improve quality of life in these individuals (Cox-Martin et al., 2020).

Pergolotti et al. (2020) examined women's experiences after ovarian cancer surgery. It was found that participants experienced distress regarding pain, fatigue, and worry; in particular, the women in the study were concerned about potential functional limitations regarding their ability to complete basic and IADL. This suggests that OT intervention and evaluation are appropriate to help decrease distress and improve quality of life (QOL) of the women through pain management strategies when performing ADLs and IADLs (Pergolotti et al., 2020).

Pain-Related Assessments

The 36-item short form survey (SF-36) is a tool used to get self-reported QOL measures from patients. This tool includes eight health concepts which are each scored from zero to one hundred. In a study examining the Lifestyle Redesign Program's effects

on treating chronic pain in participants, it was found that all changes for mean scores in SF-36 were trending towards improved QOL and pain levels (Simon & Collins, 2017).

A retrospective study examining three previous studies that looked at patients with low back pain was conducted on the Pain Self-Efficacy Questionnaire (PSEQ) to test if it provides unbiased information on the patient's self-efficacy (Di Pietro et al., 2014). The results from the study concluded that there was internal consistency, unidimensionality, and sufficient category ordering. This suggests that the PSEQ is a valid assessment for measuring pain intensity and duration while taking age, sex, and disability under consideration.

The Pain Anxiety Symptoms Scale was developed to measure fear and anxiety responses to pain. Research suggests that there is a significant relation between avoidance of pain due to fear and disability of chronic pain (McCracken & Dhingra, 2002).

A study of 215 inpatients or outpatients at a university hospital receiving psychiatric OT subjectively reported five psychiatric symptoms (depressive mood, tension, irritability, anxiety, and fatigue) using the visual analogue scale (VAS) before and after intervention (Yamashita et al., 2011). The VAS value at the beginning stage significantly predicted improvement of each psychiatric symptom.

There is limited literature about the efficacy of the VAS in OT evaluations, but there has been a modified VAS suggested for the assessment of chronic pain (Dones et al., 2010). The current VAS assesses the intensity of pain, but it does not test the frequency of pain attacks throughout the day, an important aspect of chronic pain. By implementing a graph that includes both intensity and frequency, the modified VAS

provides a clearer picture of the patient's condition before and during any treatment to relieve pain.

The Chronic Pain Acceptance Questionnaire (CPAQ 20) is a validated tool designed as an assessment for patients that would result in better acceptance of their chronic pain (Scriven et al., 2019). Within this questionnaire are two sub scales which include pain willingness and activity engagement. The two sub-scales are rated separately and then combined for a total score on a seven-point scale. Higher scores indicate higher levels of pain acceptance. The CPAQ 20 was used in a study that examined the effect of a telehealth pain management program on individuals living with chronic pain. This program included occupational therapists, physical therapists, and pharmacists. It was found that after participants completed the program, their activity CPAQ 20 scores and their overall CPAQ 20 scores significantly increased. These results indicate a higher pain acceptance as well as less restriction on activity due to pain (Scriven et al., 2019).

The Faces Pain Scale was tested and it yielded positive results for its validity with geriatric postsurgical patients due to geriatric patients having a difficult time expressing pain (García-Galicia et al., 2018). Additionally, the brief pain inventory is a questionnaire that is used to evaluate pain interferences. There are two dimensions of the questionnaire: activity interference, which is considered general movements, and affective interference, which pertains to affect, quality of life, and sleep (Miettinen et al., 2019). Finally, the McGill Pain Questionnaire asks patients specific questions about their pain including the location, duration, type of pain, and causes improvement in pain (Schell & Gillen, 2018).

Methodology

We designed a survey to obtain up-to-date qualitative and quantitative information from OT practitioners that treat individuals who have chronic pain. Two articles that referenced patients who were treated for chronic pain stated they received better results when they were cared for by an interdisciplinary team and pain management programs (Kurklinsky et al., 2016; Sanos, 2012). Therefore, we decided to see how occupational therapists are creating evidence-based practices to treat chronic pain and if they work on interdisciplinary teams.

We created a pilot survey on Google Forms. We sent it out to the faculty and staff that are occupational therapists at Stanbridge University. The survey consists of fifteen questions: three demographic questions, one question to confirm the participant works with patients that have chronic pain, four evidence-based practice questions, two patient specific questions, one question regarding referrals for patients, two interdisciplinary team questions, one question addressing assessments, and one open ended question about the pilot survey (a question which was omitted in the final survey). The finalized survey was sent out to occupational therapists that treat chronic pain nationwide through OTcommune, Occupational Therapy Association of California (OTAC), Facebook groups, acute hospitals, rehabilitation hospitals, outpatient clinics, and through medical professionals that we know personally. We analyzed our data by utilizing descriptive data.

Ethical and Legal Considerations

Participants for this survey were limited to occupational therapists and OT assistants from the United States. The participants for the survey were recruited

nationally via professional OT organizations such as AOTA and OTAC. Participants were also recruited via Facebook groups, CommunOT, and via personal connections. Each participant was emailed information regarding the survey. A consent form was provided prior to the completion of the survey. Anonymity was an important aspect of this survey. The demographic questions did provide minimal information about the participants, but not enough to determine an individual's identity.

The survey was risk free and participants were free to take it based on their own volition. Furthermore, there was no incentive for participating in the survey. It took about five to ten minutes to complete.

Possible Limitations

This survey has some limitations that should be taken into consideration when conducting future research on how OT practitioners treat chronic pain. Because the project consisted of a survey, the results do not describe which intervention is more effective. Rather, it analyzed current trends across different settings. In addition, the sample size may not be able to be generalized across the population because the invitation was sent out through the OTAC. The survey itself also has multiple choice answers, and participants may have been influenced to pick a choice rather than type in what they actually used. The survey targeted occupational therapists and OT assistants that treat individuals that have chronic pain.

This survey could have been improved in a few ways. Occupational therapists who work in other settings besides outpatient clinics could have been recruited. Additionally, international occupational therapists could have been recruited. Another improvement would have been in the formatting of one of the survey questions. We could

have split up the one survey question we had asking about interventions into two questions, with one being about occupation-based interventions and the other one about common interdisciplinary practices for treating chronic pain. The thesis could have gathered more information on one specific diagnosis of chronic pain rather than numerous diagnoses that result in causing chronic pain. We recognize that our data does not represent the depth to which practitioners are using the listed evidence-based interventions, and that it only suggests trends across a sample size of 87 practitioners.

Results

Pilot Survey Results

We decided to administer a pilot survey to a small sample to ensure our survey questions were relevant and they were addressing our problem statement sufficiently. Additionally, the pilot survey allowed us an opportunity for feedback. We received three responses from the pilot survey. The feedback that we were given pertained to one grammatical error, formatting, one misspelled word, rewording for a question, and adding stroke hemiplegic shoulder pain for a type of pain that is treated.

Survey results

Demographics

Question 1 asked participants to select whether they were an OT or Occupational Therapy Assistant (OTA). This relates to our research question because our target population is OT practitioners. Out of the 87 participants, 81 selected OT and 6 selected OTA (see Figure B1).

Definition of Chronic Pain

Question 2 asked whether or not participants treat patients that fit this diagnosis of chronic pain. This informed our research question of whether or not OT practitioners understand what chronic pain is in the context of evidence-based practice. Chronic pain can be defined as pain that has not resolved within 3 months and is not responsive to routine pain management.” Out of the 87 participants, 77 selected “yes” and 10 selected “no” (see Figure B2).

Practice Setting

Question 3 asked what type of setting do you primarily work in while you treat chronic pain. The purpose of this question was to analyze the correlation between practice setting and evidence-based practice usage. Out of the 87 participants, 27 selected outpatient, 19 selected skilled nursing facility, 13 selected home health, 8 selected acute hospital, 7 selected pain management clinic, 5 selected acute rehabilitation, and 8 participants did not respond (see Figure B3).

Length of Practice

Question 4 asked participants how long they have been a practicing OT or OTA. This question informed us whether there is a relationship between using evidence-based interventions and the amount of experience an occupational therapist has. As shown in Figure 4, out of 87 participants, 40 selected “0-5 years” as the length of time practicing as an OT or OTA. Additionally, 21 participants selected 21-30 years as the length of time practicing as an OT or OTA (see Figure B4).

Pain Management Program

Question 5 asked participants if their facility has a pain management program. This question informed us whether pain management programs have occupational therapists and lends evidence that occupational therapists are treating chronic pain and receiving referrals to treat chronic pain. Out of 87 participants, 50 responded “No” in response to the question. 36 participants responded “Yes.” 1 participant did not respond (see Figure B5).

Multidisciplinary Interactions

Question 6 asked participants if they worked with any of the professions listed in a multidisciplinary approach to pain management. This question informed us whether occupational therapists work in a team setting when treating chronic pain which may impact which interventions they choose to use with patients. For example, in a multidisciplinary setting, an OT may not use a CBT based approach if a psychologist is on the care team for the patient. The professions listed included physical therapists, recreational therapists, social workers, nurses, pain management doctors, pharmacists, and psychiatrists. Out of 76 participants, 71 selected “Physical Therapists,” 51 selected nurses, 31 selected social workers, 31 selected pain management doctors, 24 selected psychiatrists, 10 selected pharmacists, and 5 participants selected recreational therapists (see Figure B6).

Referrals for Pain Management

Question 7 asked participants to select yes or no in response to being asked are patients referred to you for pain management. This was a fundamental question that aimed to give insight into whether or not occupational therapists were being considered

as one of the primary practitioners who receive patients for chronic pain management. 43 respondents selected yes, 41 selected no, and 3 did not respond (see Figure B7).

Chronic Pain Diagnoses

Question 8 asked participants to select diagnoses that their patients with chronic pain have. We listed nine diagnoses based on our literature review. The 9 choices were fibromyalgia, low back pain, arthritis, complex regional pain syndrome, phantom limb pain, cancer, orthopedic injuries, migraines, and hemiplegic shoulder pain due to cardiovascular accident. Of the 87 participants, most selected “arthritis” (n = 64; 15%) and lower back pain (n = 62; 15%). This question was asked to provide an idea of which chronic pain diagnoses are most commonly seen by OT practitioners (see Figure B8).

Assessments/Tools

Question 9 asked participants to select assessment tools that they use in practice to measure a client’s quality of life, functionality, and pain management. This question was included in the survey to understand trends in how individuals with chronic pain are being assessed by occupational therapists. We listed 10 assessment tools based on our literature review that included COPM, Brief Pain Inventory, 30 Item Short Form, Pain Self Efficacy Questionnaire, Chronic Pain Acceptance Questionnaire, Pain Anxiety Symptoms Scale, FACES Scale, McGill Pain Questionnaire, Leisure Checklist, and Visual Analog Scale. Of the ten items, most participants endorsed the “Visual Analog Scale” (n = 37; 21%) and the ‘COPM’ (n = 33, 18%; see Figure B9).

Evidence-Based Practice

Question 10 asked what are the evidence-based interventions that are used to address chronic pain. This question was included to measure what interventions are being

utilized in the field. We wanted to understand exactly how occupational therapists are treating chronic pain and if they are using occupation-based interventions. We found that 72 individuals use energy conservation techniques/joint sparing techniques, 71 individuals use activity (task) adaptation/therapeutic activity, 23 individuals use vocational intervention, 18 individuals use graded in vivo exposure, 20 individuals use massage/acupressure, 30 individuals use thermal modalities, 18 use electrical stimulation, 8 individuals use biofeedback, 36 individuals utilize coordination/dexterity strengthening tasks, 50 individuals use sleep hygiene, 21 individuals use yoga and tai chi, 22 individuals use functional splinting, 64 individuals use coping strategies, 63 individuals use relaxation training/stress management, 35 individuals use mental imagery/visualization, 67 individuals use breathing techniques, 56 individuals use pacing, 22 individuals use graded motor imagery, 47 individuals use mindfulness, 20 individuals use mirror therapy, 17 individuals use EMDR/desensitization techniques/sensory reduction, and 12 individuals use pharmacological interventions (see Figure B10).

Occupation as a Means to Intervention

Question 11 asks if occupational therapists and occupational therapy assistants (OTAs) use occupation as a means to an end in their clinical practice. This question gave us insight into how occupational therapists and OTAs are providing their unique contribution to treating individuals that have chronic pain. 83% of individuals who responded to the survey do use occupation as a means to an end to treat those with chronic pain (see Figure B11).

Percentage of Caseload

Question 12 asks what percent of the respondent's caseload involves treatment of chronic pain. This question gave insight into how often occupational therapists and OTAs are treating chronic pain. The results were that 16% percent of individuals reported they have 76%-100% of their caseload are patients that experience chronic pain. While 17% of individuals have a caseload of chronic pain patients between 51%–75%, 27 % of individuals have a caseload of chronic pain patients between 26%–50%, and 38% of individuals have a caseload of chronic pain patients of less than 25% (see Figure B12).

Post-hoc Analysis

Our first post-hoc analysis examined the relationship between how long a practitioner has been working and the setting that they work in. A statistically significant relationship was found between practitioners who have 0–5 years of experience and those who treat chronic pain in an outpatient setting. ($p = .004$; see Table 1). When examining the relationship between setting and profession, there was a statistically significant relationship between physical therapist and outpatient setting ($p < .001$; see Table 2). When comparing length of practice and type of intervention, there was a statistically significant relationship between 0-5 years of practice and energy conservation techniques ($p < .001$; see Table 3). However, when comparing referrals to pain management and pain management program/setting, there was no statistically significant relationship found between pain management and pain management program/setting ($p = .583$; see Table 4).

Discussion

Our original hypothesis suggested that we would not see a trend of OT practitioners implementing evidence and occupation-based interventions in treatment of

individuals with chronic pain. Contrary to our hypothesis, our survey results indicate that occupational therapists are using evidence-based practices to treat chronic pain. Doctors should continue to refer patients for OT, as they help to keep individuals as functional for as long as possible and uniquely contribute by using evidence-based, occupation centered interventions. Additionally, occupational therapists are referred patients for chronic pain and about half of the participants interviewed had a pain management program where they work, which follows recommendations for interdisciplinary care for treatment of chronic pain (Schatman, 2012).

Our objective in obtaining this data and performing a post-hoc analysis was to show that OT practitioners are answering the call to action from Robinson et al. (2011) by utilizing appropriate interventions in their treatment of individuals with chronic pain. Occupational therapists are currently advocating for the profession through their implementation of such interventions and should continue to be aware of literature that will further support and advance OT as a profession in this field.

Recommendations

Future studies should focus on the specific interventions given for specific diagnosis and should feature a more robust sample size across additional practice settings. Also, including a write-in option regarding chronic pain interventions to better represent practice trends would be beneficial. Future research should also focus on how frequent OT practitioners are using evidence-based interventions to treat chronic pain with an in-depth examination of which specific interventions are used to treat which diagnosis. This might be achieved through interviews and collection of qualitative data based on the practitioner's own perception of their implementation of interventions. Other

recommendations for future research could include gathering patient perspectives and opinions on evidence-based interventions. Furthermore, future studies investigating the specific health outcomes and efficacy of individual interventions would be useful in guiding OT practice in the treatment of those with chronic pain. Occupational therapists should continue using interventions that help patients engage in occupations despite experiencing chronic pain and working on interdisciplinary teams. Our survey data suggests that if occupational therapists want to work treating individuals with chronic pain, they should work in the outpatient setting.

Conclusion

This study highlights the approach OT practitioners take while treating individuals with chronic pain. This approach is centered around engaging their patients in evidence-based occupations, not necessarily decreasing the perception of pain. While non-occupation evidence-based interventions can be used by the profession, OT practitioners must remember their goal is to increase a patient's functionality. OT practitioners do work on interdisciplinary teams while treating patients that have chronic pain. This study acts as a foundational study that will help to shape future research involving OT and the profession's role in treating chronic pain. Finally, OT practitioners should persist with use of evidence-based, occupation-based interventions to treat chronic pain to continue responding to AOTA's call to action for therapists to provide unique contributions to chronic pain treatment.

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Appendix A

Tables

Post-hoc Analysis

1. To examine the relationship between length of practice (Figure 4) and settings (Figure 3), a chi-square goodness of fit test was employed and found a statistically significant relationship between these two variables, [$\chi^2(3, N = 348) = 13.08, p = .004$] indicating setting influences length of practice (Table 1).

Table 1

Length of Practice and Setting

	O	E	χ^2	df	p
0-5 years and outpatient setting	67	87.0	13.08	3	.004
0-5 years and other setting	100	87.0			
Other length of practice and outpatient setting	74	87.0			
Other length of practice and other setting	107	87.0			

2. To examine the relationship between practice setting (Figure 3) and interactions with multidisciplinary professions (Figure 6), a chi-square goodness of fit test was employed and found a statistically significant relationship between these two variables, [$\chi^2(3, N = 620) = 49.35, p < .001$] indicating profession influences setting (Table 2).

Table 2

Setting and Profession

	O	E	χ^2	df	p
Physical therapist and outpatient setting	98	155.0	49.35	3	<.001
Physical therapist and other setting	131	155.0			
Other profession and outpatient setting	179	155.0			
Other profession and other setting	212	155.0			

3. To examine the relationship between length of practice (Figure 4) and types of interventions (Figure 10), a chi-square goodness of fit test was employed and found a statistically significant relationship between these two variables, [$\chi^2(3, N = 1758) = 955.52, p < .001$] indicating length of practice influences type of intervention (Table 3).

Table 3

Length of Practice and Type of Intervention

	O	E	χ^2	df	p
0-5 years and Energy Conservation Techniques	112	439.50	955.52	3	>.001
0-5 years and other interventions	760	439.50			
Other length of practice and Energy Conservation Techniques	119	439.50			
Other length of practice and other interventions	767	439.50			

4. To examine the relationship between referrals for pain management (Figure 7) and pain management program/setting (Figure 5), a chi-square goodness of fit test was employed and did not find a statistically significant relationship between these two variables, [$\chi^2(3, N = 348) = 1.95, p = .583$] indicating no association between length of practice and type of intervention (Table 4).

Table 4*Referrals for Pain Management and Pain**Management Program/Setting*

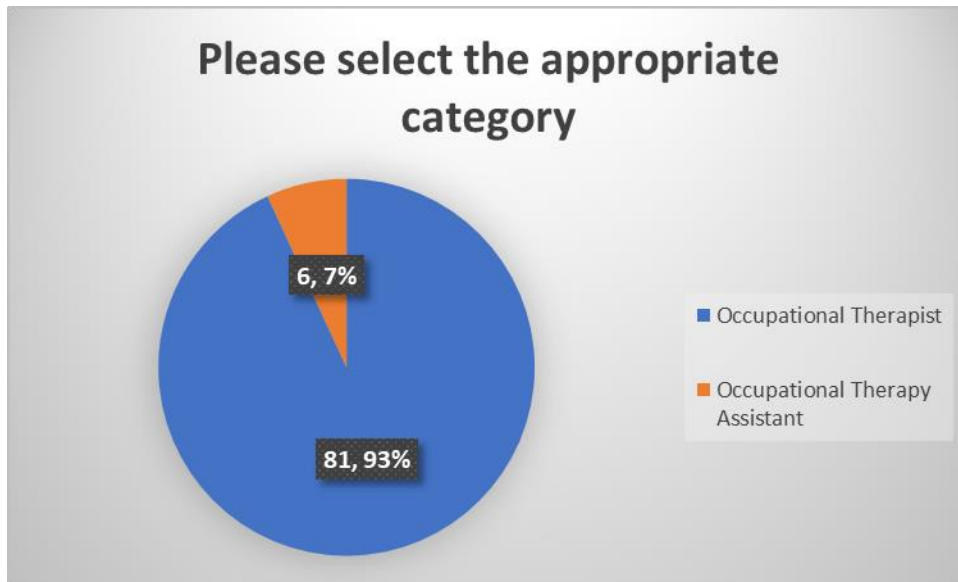
	O	E	χ^2	df	p
'Yes' - pain mgmt referrals and 'no' - pain mgmt program/setting	93	87.0	1.95	3	.583
'Yes' - pain mgmt referrals and 'other' pain mgmt program/setting	80	87.0			
'Other' - pain mgmt referrals and 'no' - pain mgmt program/setting	94	87.0			
'Other' - pain mgmt referrals and 'other' pain mgmt program/setting	81	87.0			

Appendix B

Figures

Figure B1

Are you an OT or OTA?



As presented in Figure B1, the present study involved mostly OTs (n = 81; 93%) compared to OTAs (n = 6; 7%).

Figure B2

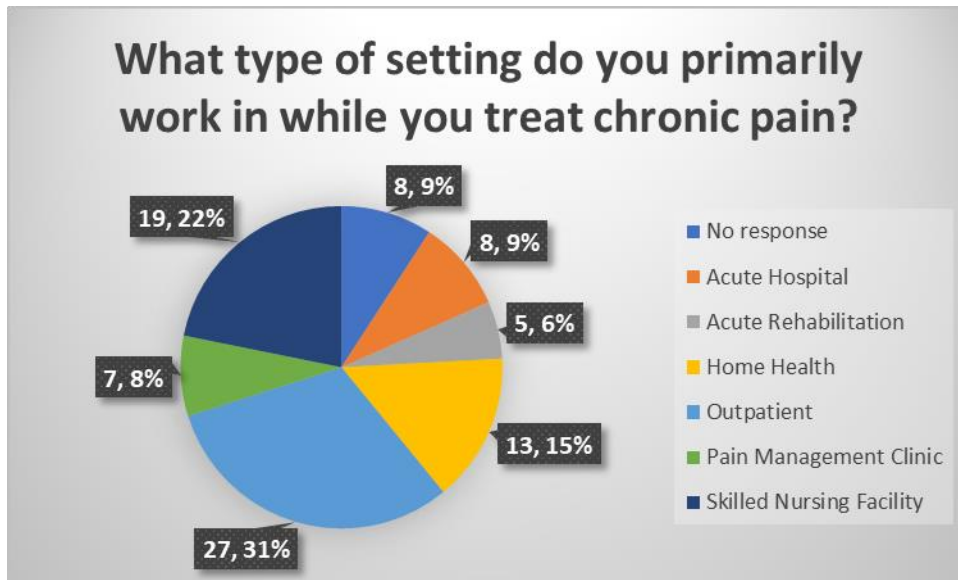
Chronic Pain Can Be Defined as Pain That Has Not Resolved Within 3 Months and Is Not Responsive to Routine Pain Management



As presented in Figure B2, most participants agreed with the statement, "Chronic pain can be defined as pain that has not resolved within 3 months and is not responsive to routine pain management" (n = 77; 89%).

Figure B3

What Type of Setting Do You Primarily Work in While You Treat Chronic Pain?



As presented in Figure B3, most participants endorsed “Outpatient” as the setting they primarily work in while treating chronic pain (n = 27; 31%).

Figure B4

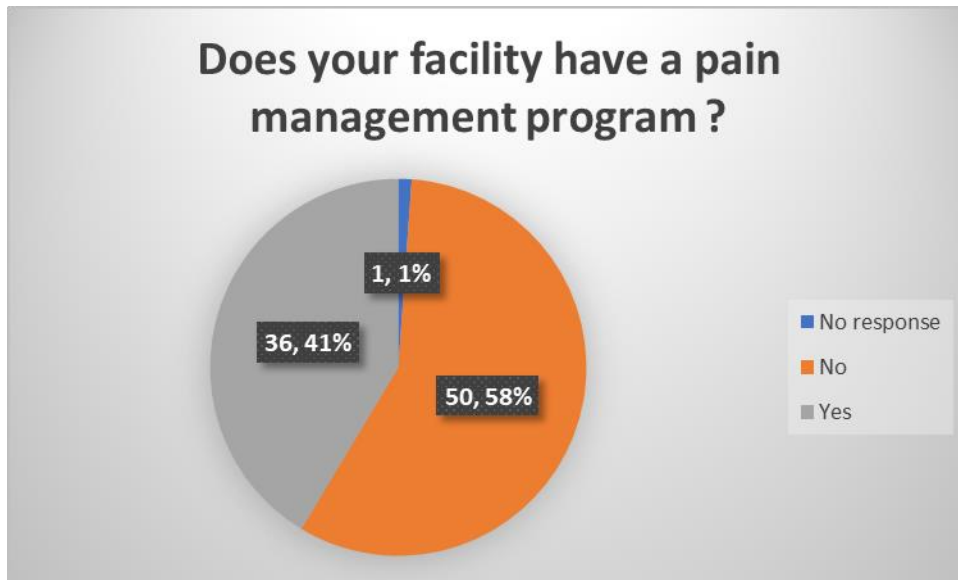
How Long Have You Been a Practicing OT or OTA?



As presented in Figure B4, most participants endorsed “0-5 years” as the length of time practicing as an OT or OTA (n = 40; 46%).

Figure B5

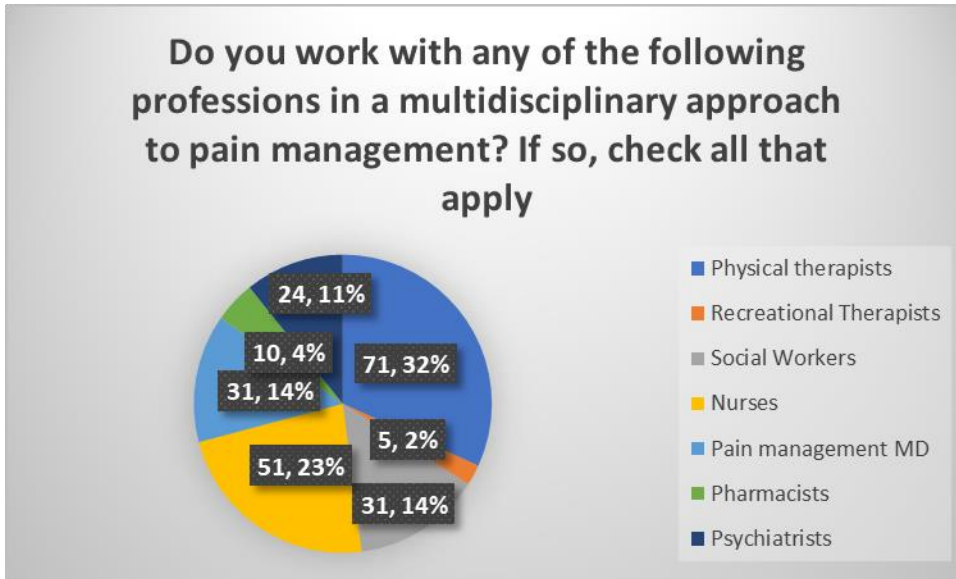
Does Your Facility Have a Pain Management Program?



As presented in Figure B5, most participants endorsed “No” in response to the question, “Does your facility have a pain management program?” (n = 50; 58%).

Figure B6

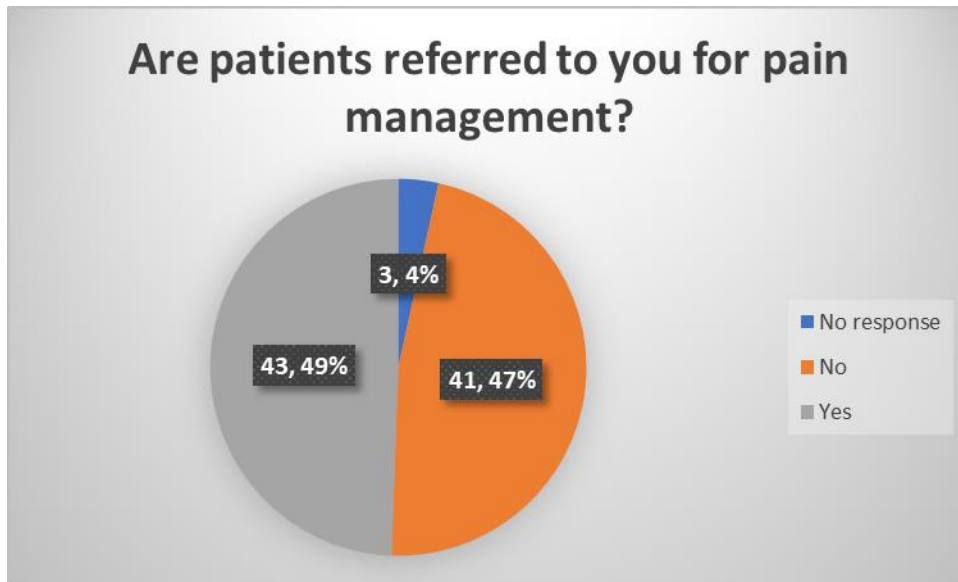
Do You Work with any of the Following Professions in a Multidisciplinary Approach to Pain Management?



As presented in Figure B6, most participants endorsed “Physical Therapists” in response to the question, “Do you work with any of the following professions in a multidisciplinary approach to pain management?” (n = 71; 32%).

Figure B7

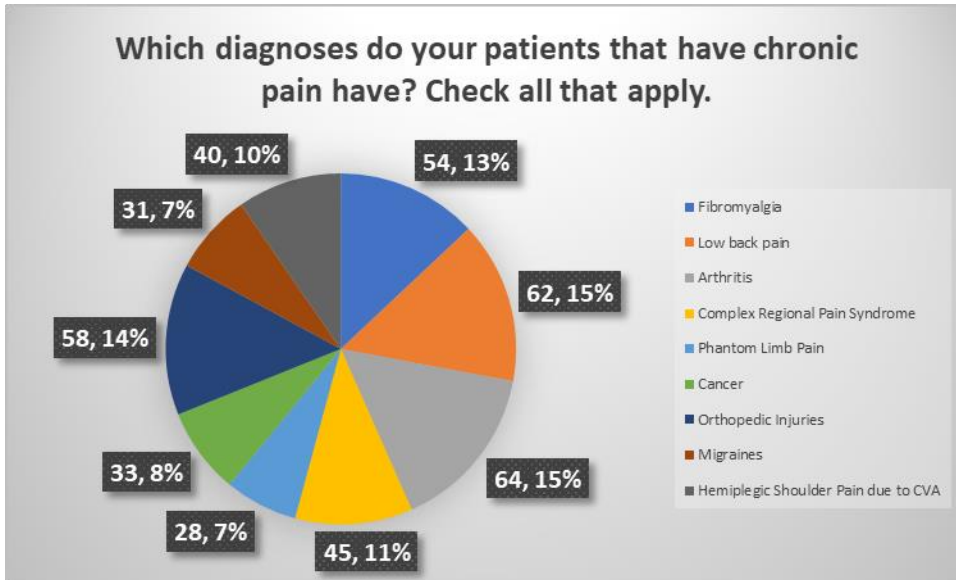
Are Patients Referred to you for Pain Management?



As presented in Figure B7, most participants endorsed "Yes" when asked "Are patients referred to you for pain management?" (n = 43; 49%).

Figure B8

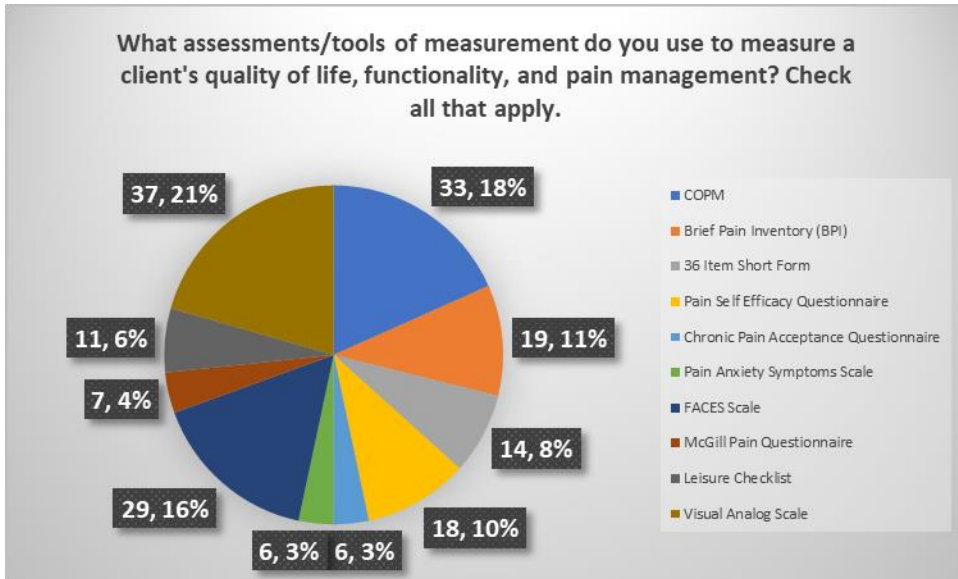
Which Diagnoses Do Your Patients That Have Chronic Pain Have?



As presented in Figure B8, most participants endorsed “Arthritis” when asked “Which diagnoses do your patients that have chronic pain have?” (n = 64; 15%).

Figure B9

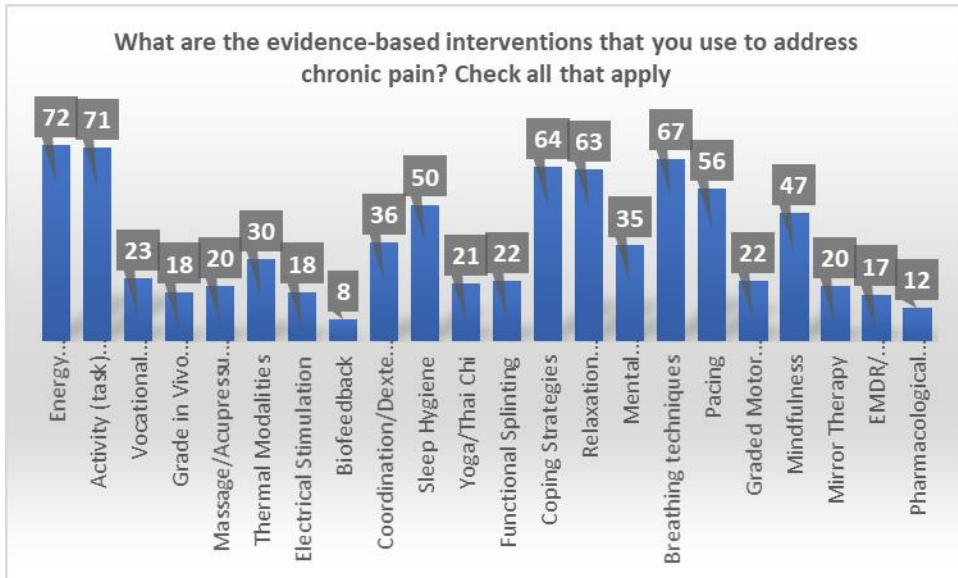
What Assessments/Tools of Measurement Do You Use to Measure a Client's Quality of Life, Functionality, and Pain Management?



As presented in Figure B9, most participants endorsed “Visual Analog Scale” when asked “What assessments/tools of measurement do you use to measure a client's quality of life, functionality, and pain management?” (n = 37; 21%).

Figure B10

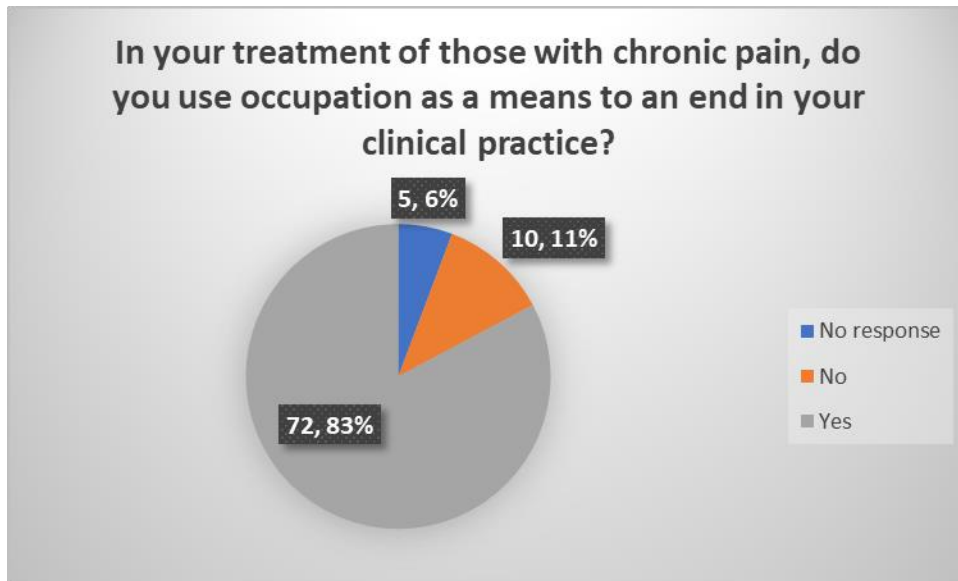
What Are the Evidence-Based Interventions That You Use to Address Chronic Pain?



As presented in Figure B10, most participants endorsed “Energy Conservation Techniques” as the evidence-based intervention that’s used to address chronic pain (n = 72; 9%).

Figure B11

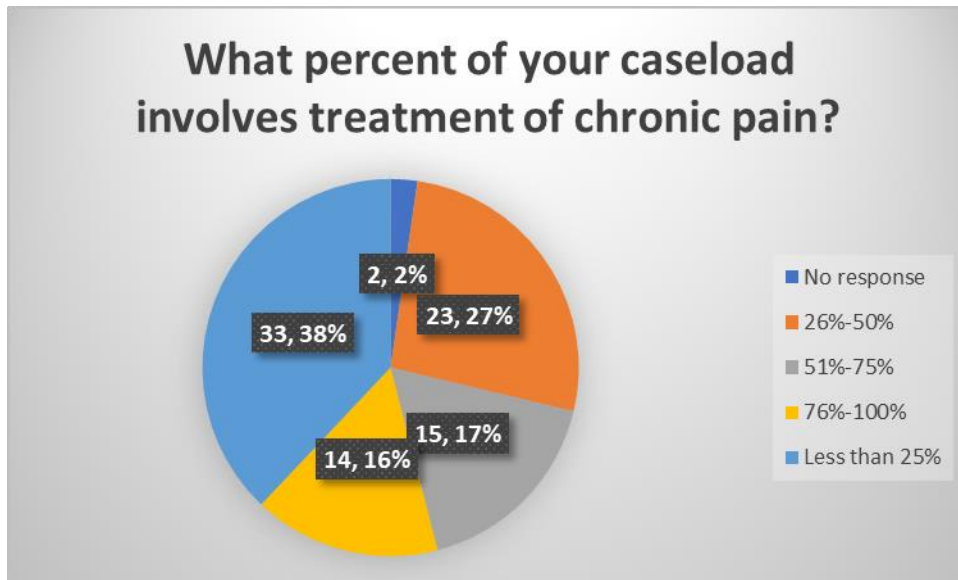
In Your Treatment of Those With Chronic Pain, Do You Use Occupation as a Means to an End in Your Clinical Practice?



As presented in Figure B11, most participants endorsed “Yes” when asked “In your treatment of those with chronic pain, do you use occupation as a means to an end in your clinical practice?” (n = 72; 83%).

Figure B12

What Percent of Your Caseload Involves Treatment of Chronic Pain?



As presented in Figure B12, most participants endorsed “Less than 25%” when asked “What percent of your caseload involves treatment of chronic pain?” (n = 33; 38%).