Examining Complementary Health Approaches and Integrative Health (CHAIH) Practices among Occupational Therapists in the United States: A Mixed Methods Approach

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EXAMINING COMPLEMENTARY HEALTH APPROACHES AND INTEGRATIVE HEALTH (CHAIH) PRACTICES AMONG OCCUPATIONAL THERAPISTS IN THE UNITED STATES: A MIXED METHODS APPROACH

by

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A dissertation submitted to the Graduate College in partial fulfillment of the requirements for the degree of Doctor of Philosophy
Interdisciplinary Health Sciences
Western Michigan University
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EXAMINING COMPLEMENTARY HEALTH APPROACHES AND INTEGRATIVE HEALTH (CHAIH) PRACTICES AMONG OCCUPATIONAL THERAPISTS IN THE UNITED STATES: A MIXED METHODS APPROACH

Sarah M. Renner, Ph.D.
Western Michigan University, 2021

The use of complementary health approaches and integrative health (CHAIH) is increasing among adults and children in the United States and continues to grow within various health care settings. With Health and Wellness identified as a key practice area for occupational therapists and the American Occupational Therapy Association supporting the use of CHAIH in occupational therapy (OT) practice, practitioners must offer safe, research-driven treatments supporting this movement. Research around CHAIH continues to grow; yet the gaps in the literature make it difficult to determine how CHAIH is being used in OT practice as well as the practitioner’s perspectives on the integration of these therapies. This mixed methods dissertation implements an exploratory, cross-sectional survey design to examine the prevalence of use and practitioner’s perceptions around the integration of CHAIH in OT practice.

The first study explores the prevalence of CHAIH among OT practitioners, which CHAIH therapies are most commonly integrated into OT practice, and whether there are differences in the responses between the practitioners who do and do not integrate CHAIH in practice when self-rating their knowledge of and their general attitudes toward CHAIH. The results found that the majority of practitioners in the United States are using CHAIH in their clinical practice and that the most commonly used therapies include deep breathing, sensory techniques, yoga, mindfulness, and massage. The results also found a statistically significant
difference between practitioners who do and do not integrate CHAIH therapies with clients, both when considering their self-rated knowledge of and their general attitudes toward these approaches.

The second study investigates which factors and characteristics of OT practitioners are significant predictors of whether they are integrating CHAIH into their clinical practice. A multiple logistic regression analysis found six significant predictors of whether an OT practitioner is more likely to use CHAIH with clients. These included the practitioner’s: perceived ability to bill for CHAIH services, primary practice setting, primary population served, years of clinical experience, exposure to CHAIH as a student, and personal use of CHAIH.

The third study examines what OT practitioners perceive to be the benefits and the barriers to integrating CHAIH and explores the differences in perspectives based on the primary setting in which they practice. Using a qualitative thematic content analysis, five major themes were derived reflecting the benefits and the barriers to integrating CHAIH. The perceived benefits include: Holistic/Client-Centered, Improve Mental Health, Access, Pain Management/Improved Physical Health, and Adds to “OT Toolbox.” The perceived barriers include: Lack of Knowledge/Formal Education, Reimbursement/Billing Issues, Access, Lack of EBP/Research, and Acceptance/Patient Buy-In.

Having a better understanding of the prevalence and perceptions around the incorporation of CHAIH within the OT profession will help to prioritize future research supporting the safe and consistent professional integration of these therapies. This three-paper dissertation offers a foundation for strategizing how to close the relevant gaps in the evidence-based practices related to CHAIH to help the OT profession tailor their standards more effectively.
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Sarah M. Renner
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CHAPTER I
INTRODUCTION

Complementary Health Approaches and Integrative Health (CHAIH)

As scientific research focused on the use of complementary health approaches and integrative health (CHAIH) continues to emerge, the definition of the term remains fluid (American Occupational Therapy Association [AOTA], 2011). However, defining each part of this phrase separately offers a clear introduction to the essence of CHAIH. Complementary health approaches are more unconventional, non-mainstream practices used to complement traditional Western medicine practices (National Center for Complementary and Integrative Health [NCCIH], 2018a). Integrative health incorporates both conventional and complementary approaches into treatment, highlighting an inclusive approach (NCCIH, 2018a). As we continue to transition this definition toward clinical practice, it is critical to detail that CHAIH approaches offer a holistic and individualized focus with clients. This client-centered emphasis includes the mental, emotional, functional, spiritual, social, and community aspects relating to the “whole person” (NCCIH, 2018a).

Complementary health approaches and integrative health practices are categorized in a complementary health domain determined by the National Center for Complementary and Integrative Health (NCCIH), a branch of the National Institutes of Health (NIH). These domains include natural products and mind body practices (NCCIH, 2018a). Some examples of CHAIH practices (also, therapies) include deep breathing, yoga, meditation, massage, special diets, and relaxation techniques (NCCIH, 2018a); however, the inclusive list of these practices is far more
extensive. Complementary health approaches and integrative health practices are often incorporated as preventative measures or used to stabilize symptoms related to clinical conditions. These CHAIH practices can empower people to enhance their quality of life and reinforce a personal sense of well-being (AOTA, 2017).

Increasing Use across United States

Historically, the United States’ healthcare system has prioritized addressing disease and illness over promoting health or preventative services (Elite Healthcare, 2016). However, the number of adults and children using CHAIH approaches has considerably increased over the years and continues to persist (NCCIH, 2018b). The 2017 National Health Interview Survey (NHIS) showed substantial increases in the use of mind body practices among United States’ adults and children when compared to the data fielded from the 2012 survey (NCCIH, 2018b). For instance, the use of meditation (considered a CHAIH practice) increased more than threefold from 4.1 percent in 2012 to 14.2 percent in 2017 (NCCIH, 2018c). David Shurtleff, the acting Director of NCCIH, offers that the 2017 data suggest that more people are turning to mind body practices to support their health than ever before (NCCIH, 2018b).

A recent study published a report from the NHIS from years 2002, 2007, 2012, and 2017. The authors found that that the use of yoga, tai-chi, and Qigong (YTQ; categorized as CHAIH therapies) have also significantly increased from 5.8 percent in 2002 to 14.5 percent in 2017 ($p \leq .001$) among United States’ adults within the past 15 years for all ages, racial groups, and genders, and its use is expected to continue to increase (Wang et al., 2019). Moreover, the NCCIH indicated that the use of these CHAIH approaches to support health and wellness has also grown within various health care settings (e.g., hospitals, hospices, skilled nursing/health facilities) across the United States for more than 15 years (Elite Healthcare, 2016).
has identified a strategic plan in complementary and integrative health research which aims to promote a thorough understanding of the efficacy associated with these practices with support from progressive scientific evidence (NCCIH, 2016).

Relevance to Occupational Therapy (OT) Practice

With holism integrated into the diverse scope of practice and with the profession's complementary creative tendencies, there is an opportunity for OT practitioners to be at the forefront of this notable shift in the United States’ healthcare system (Schmid, 2004). Within the OT practice framework, the characterization of OT aligns with the NIH’s definition of integrative health as both definitions put a strong emphasis on incorporating holistic, person-centered approaches when managing general health and wellness (AOTA, 2014; NCCIH, 2018a). Additionally, the OT practice framework and the NIH definition highlight the importance of an inclusive focus when treating the “whole person,” considering all aspects of one’s health (i.e., mental, emotional, functional, spiritual, social, and community) (AOTA, 2014; NCCIH, 2018a).

The American Occupational Therapy Association (AOTA) has established that CHAIH practices may be used by practitioners to "prepare and enhance participation and engagement in occupation by persons, groups, and populations" (AOTA, 2014). The profession's philosophical background and client-centered approach to practice also substantiate the use of CHAIH (AOTA, 2017). There are many ways that OT practitioners can integrate CHAIH approaches into their professional practice, including as preparatory methods and tasks (e.g., Qigong, deep breathing, and guided imagery for stress reduction before treatment session intervention or activities of daily living [ADLs]), to support occupations (e.g., mindfulness or meditation for pain reduction),
and with various activities (e.g., Yoga or Tai Chi for standing balance during occupations) (AOTA, 2017).

The Accreditation Council for Occupational Therapy Education (ACOTE), a part of AOTA, is recognized as the accrediting agency for OT education by both the United States Department of Education (USDE) and the Council for Higher Education Accreditation (CHEA) (Accreditation Council for Occupational Therapy Education [ACOTE], n.d.). While ACOTE is not explicit in specifying the integration of CHAIH into OT education, several parts of the 2018 Standards and Interpretive Guide indirectly substantiate their inclusion. For instance, the guidelines establish that OT programs must promote “the formulation and implementation of the therapeutic intervention plan to facilitate occupational performance and participation must be client centered and culturally relevant,” (ACOTE, 2020). This aligns with AOTA’s position that CHAIH is a client-centered approach and may enhance participation in occupation by persons, groups, and populations (AOTA, 2014).

While various interdisciplinary team members can offer CHAIH therapies (e.g., physical therapists, speech and language pathologists, nurses), OT practitioners are uniquely positioned to do so in an inclusive and therapeutic manner. Occupational therapists are recognized for their holistic perspectives which address one’s mind, body, and spirit as well as environmental aspects (Elite Healthcare, 2016). Moreover, Health and Wellness has been identified as one of six “key practice areas” for OT practitioners (AOTA, 2020). Notably, OT practitioners can also bill federal and private insurances (e.g., Medicare, Medicaid, Blue Cross and Blue Shield, Health Maintenance Organizations, etc.) for the provision of these CHAIH therapies (Holistic OT, n.d.). With supportive documentation on which intervention is being used, the changes it produced for
the client, and how it enhanced their individualized occupation(s), CHAIH therapies are classified as reimbursable OT services (Holistic OT, n.d.; AOTA, 2017).

Background

In response to the increasing consumer demands of a more integrative United States’ healthcare system, many OT educators are incorporating CHAIH content into their teaching (Elite Healthcare, 2016). Bradshaw (2016a) conducted an exploratory survey that examined the extent to which CHAIH approaches were included in OT curricula in the United States. The survey results found that 79 percent of respondents (N = 302) reported curricular inclusion of these approaches; however, most educators felt inadequately prepared to teach general CHAIH content and to instruct students to incorporate these approaches into OT practice (Bradshaw, 2016a). These results coincide with Bradshaw's (2016b) discussion that, without adequate support or professional consistency, practitioners are at a disadvantage when engaging with these persisting trends in healthcare. One potential source of the issue relating to the inconsistencies across OT programs in the United States may pertain to ACOTE not explicitly including CHAIH in their educational standards; hence, not all schools are integrating them into their curriculum.

To effectively contribute to the expanding body of scientific research surrounding these CHAIH practices, OT educators must stay current in the evolving healthcare system. Jackman et al. (2017) aimed to explore healthcare professional trainees’ (among which included OT students) perceptions of CHAIH. While the predominant attitude was supportive of CHAIH, numerous participants expressed that these practices may be underused due to a lack of knowledge or a negative preconception about them (Jackman et al., 2017). These results substantiate that perceptions of CHAIH develop early in education and that unfamiliarity with these practices may be associated with unwarranted fear about them (Jackman et al., 2017). This
research also supports that consistency in OT curricula is necessary in ensuring that student understanding of CHAIH is informed and can be safely translated into clinical practice (Jackman et al., 2017).

Beyond curricular inclusion, research suggests that OT practitioners who are more likely to implement CHAIH approaches with clients may be influenced by their years of clinical experience and mentorship (Thompson-Hodgetts & Magill-Evans, 2018). Thompson-Hodgetts and Magill-Evans (2018) explored OT practitioner perceptions related to their use of sensory-based interventions (classified as CHAIH) with children diagnosed with autism spectrum disorder (ASD). Their results determined that newer therapists were less likely to recommend these approaches when compared to more established practitioners and that mentorship predicted both use and perceived benefit of these interventions (Thompson-Hodgetts & Magill-Evans, 2018).

Providing additional therapies is more than just an expanding practice. In fact, research suggests that individuals who received any complementary therapies throughout their rehabilitation (involving OT intervention) for a traumatic spinal cord injury (SCI) showed more significant decreases in pain severity from the six-month to 12-month follow-up assessments than the control group (Taylor et al., 2018). The most frequently used complementary therapies with the SCI patients were yoga and relaxation techniques (Taylor et al., 2018). Paras-Bravo et al. (2017) found that patients who reported symptoms of anxiety and who also received a protocol of abbreviated progressive muscle relaxation training (classified as CHAIH approach) showed improvements in their perceived quality of life and emotional, functional, and physical well-being. Both studies suggest that continued research is needed to further assess these
treatments' safety, efficacy, and clinical outcomes, but preliminarily point to a beneficial therapeutic role for these alternative therapies as they relate to OT practice.

Hardison and Roll (2016) describe how mindfulness interventions are being used in physical rehabilitation (OT practitioners represented) and shed light on the notable gaps in research. Promising findings were noted for improvements in adaptation to illness or disability (i.e., self-efficacy for disease management, increased quality of life, acceptance of pain symptoms), each well-defined within the OT scope of practice (Hardison & Roll, 2016). Another relevant article examines the impact of sensory integration therapy (SIT) (also classified as a CHAIH approach) on occupational performance in children with autism spectrum disorder (ASD). The intervention group showed significantly greater improvements in most assessment domain areas, including habituation, communication, interaction skills, process skills, and motor skills, supporting the effectiveness of SIT as it relates to OT practice (Kashefimehr et al., 2018).

One study that analyzed data from the NHIS acknowledged regional differences across a variety of CHAIH practices in the United States, which may have its own implications for OT practice (Peregoy et al., 2014). Peregoy et al. (2014) found regional variation amid the use of CHAIH practices, affirming that yoga with deep breathing and meditation was nearly 40 percent higher in the Pacific and Mountain regions when compared to the United States overall. In addition, the data showed lower use of practitioner based CHAIH approaches (such as chiropractic or manipulation) in the East South Central, South Atlantic, and West South Central regions when compared to the national average (Peregoy et al., 2014). This National Center for Health Statistics (NCHS) data brief reveals that regional differences, likely related to the environmental, cultural, and economic factors that are unique to various towns and regions, persist across a wide range of CHAIH practices in the United States (Peregoy et al., 2014).
Finally, a key consideration that lacks magnitude in the available literature today relates to the OT practitioner’s views of CHAIH therapies in relation to their clinical practice and the translation of evidence-based research. Van Puymbroeck and colleagues (2015) examined the perceptions of key agency personnel (among which included two OT representatives) on the feasibility and utility of yoga therapy (classified as a CHAIH practice) being implemented in a rehabilitation setting. The therapists described feeling that the yoga intervention was “holistic” and addressed the physical, social, and mental needs of their patients (Van Puymbroeck et al., 2015). Their perceptions also included that yoga therapy provided skills that were helpful in improving other aspects of their patient’s recovery and overall, they identified that adding yoga to the rehabilitation program was a positive and non-intrusive experience (Van Puymbroeck et al., 2015).

Significance of Research

Complementary health approaches and integrative health is a term which extends beyond the capacity of a single discipline. Therefore, assimilating pertinent data, information, and perspectives from an interdisciplinary team can help to advance our knowledge and understanding of these practices in a more comprehensive manner. The research team supporting this dissertation is comprised of experts from various fields including occupational therapy, holistic health and wellness, psychology, epidemiology, public health, and statistics. The interdisciplinary nature of this dissertation will help to establish a foundation for strategizing how to close the relevant gaps in evidence-based practices and the translational research related to CHAIH, not only for OT practitioners but for various healthcare professionals.
Chapter Summary

While the supporting evidence for the effectiveness of CHAIH continues to grow, the gaps in the literature make it difficult to determine how commonly OT practitioners are integrating these approaches with clients as well as how feasible the practitioners perceive the execution of these therapies to be in their professional practice. With the increasing use of these therapies among adults and children in the United States, practitioners ought to be able to offer safe, research-driven treatments that support this persisting health care trend (NCCIH, 2018b). It also remains critical to be mindful of the efficacy of these therapies while considering the translation of evidence-based approaches into OT practice. Understanding the prevalence and perceptions around the integration of CHAIH practices within the OT profession can help to prioritize future research supporting the safe and consistent professional integration of CHAIH therapies.

This three-paper dissertation aims to analyze the following research questions:

- Paper One: (1) What is the prevalence of CHAIH practices among OT practitioners in the United States?; (2) Which CHAIH therapies are most commonly integrated into OT practice?; Is there a difference in the responses between the practitioners who do integrate CHAIH in practice versus those who do not when self-rating their (3) knowledge of CHAIH and (4) their general attitudes regarding CHAIH?

- Paper Two: Which factors and characteristics of OT practitioners, if any, are significant predictors of whether a practitioner is integrating CHAIH approaches into their clinical practice?
• Paper Three: What do OT practitioners in the United States perceive to be (1) the benefits and (2) the barriers to integrating CHAIH approaches in their clinical practice?; (3) Are there differences amid the practitioner’s perspectives on these benefits and/or barriers based on the primary practice setting in which they work?

Definition of Terms

• Complementary Health Approaches: Unconventional, non-mainstream practices used to complement traditional Western medicine practices (NCCIH, 2018a).

• Integrative Health: Incorporates both conventional and complementary approaches into treatment, highlighting an inclusive approach (NCCIH, 2018a).

• Complementary Health Approaches and Integrative Health (CHAIH): Emphasizes a holistic and client-centered approach while incorporating both conventional and complementary practices into treatment which often focus on mental, emotional, functional, spiritual, social, and community aspects relating to the “whole person” (NCCIH, 2018a).

• Interdisciplinary: An interdisciplinary approach involves team members from different disciplines working collaboratively to set goals, make decisions, and share resources and responsibilities in support of a common objective (Department of Health & Human Services, 2015).

References


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CHAPTER II

PREVALENCE, KNOWLEDGE, AND ATTITUDES OF COMPLEMENTARY HEALTH APPROACHES AND INTEGRATIVE HEALTH (CHAIH) PRACTICES AMONG OCCUPATIONAL THERAPY PRACTITIONERS IN THE UNITED STATES

Introduction

As scientific research focused on the use of complementary health approaches and integrative health (CHAIH) continues to emerge, the definition of the term remains fluid (American Occupational Therapy Association [AOTA], 2011). However, defining each part of this phrase separately offers a clear introduction to the essence of CHAIH. Complementary health approaches are more unconventional, non-mainstream practices used to complement traditional Western medicine practices (National Center for Complementary and Integrative Health [NCCIH], 2018a). Integrative health incorporates both conventional and complementary approaches into treatment, highlighting an inclusive approach (NCCIH, 2018a). As we continue to transition this definition toward clinical practice, it is critical to detail that CHAIH approaches offer a holistic and individualized focus with clients. This client-centered emphasis includes the mental, emotional, functional, spiritual, social, and community aspects relating to the “whole person” (NCCIH, 2018a).

Within the occupational therapy (OT) practice framework, the characterization of OT aligns with the National Institutes of Health’s (NIH) definition of integrative health as both definitions put a strong emphasis on incorporating holistic, person-centered approaches when managing general health and wellness (AOTA, 2014; NCCIH, 2018a). Additionally, the OT practice framework and the NIH definition highlight the importance of offering an inclusive
focus on mental, emotional, functional, spiritual, social, and community aspects while treating the "whole person" (AOTA, 2014; NCCIH, 2018a). The National Center for Complementary and Integrative Health (NCCIH) indicates that the use of an integrative approach for health and wellness has grown within care settings (e.g., hospitals, hospices, health facilities) across the United States for over 15 years (Elite Healthcare, 2016). The NCCIH identified a strategic plan in complementary and integrative health research which aims to promote a thorough understanding of the efficacy associated with these practices with support from progressive scientific evidence (NCCIH, 2016).

The American Occupational Therapy Association (AOTA) has established that CHAIH practices may be used by practitioners to "prepare and enhance participation and engagement in occupation by persons, groups, and populations" (AOTA, 2014). The profession's philosophical background and client-centered approach to practice also substantiate the use of CHAIH (AOTA, 2017). There are many ways that OT practitioners can integrate CHAIH approaches into their professional practice, including as preparatory methods and tasks (e.g., Qigong, deep breathing, and guided imagery for stress reduction before treatment session intervention or activities of daily living [ADLs]), to support occupations (e.g., mindfulness or meditation for pain reduction), and with various activities (e.g., Yoga or Tai Chi for standing balance during occupations) (AOTA, 2017).

The Accreditation Council for Occupational Therapy Education (ACOTE), a part of AOTA, is recognized as the accrediting agency for OT education by both the United States Department of Education (USDE) and the Council for Higher Education Accreditation (CHEA) (Accreditation Council for Occupational Therapy Education [ACOTE], n.d.). While ACOTE is not explicit in specifying the integration of CHAIH into OT education, several parts of the 2018
Standards and Interpretive Guide indirectly substantiate their inclusion. For instance, the guidelines establish that OT programs must promote “the formulation and implementation of the therapeutic intervention plan to facilitate occupational performance and participation must be client centered and culturally relevant,” (ACOTE, 2020). This aligns with AOTA’s position that CHAIH is a client-centered approach and may enhance participation in occupation by persons, groups, and populations (AOTA, 2014).

While various interdisciplinary team members can offer CHAIH therapies (e.g., physical therapists, speech and language pathologists, nurses), OT practitioners are uniquely positioned to do so in an inclusive and therapeutic manner. Occupational therapists are recognized for their holistic perspectives which address one’s mind, body, and spirit as well as environmental aspects (Elite Healthcare, 2016). Moreover, Health and Wellness has been identified as a “key practice area” for practitioners (AOTA, 2020b). Notably, OT practitioners can also bill for the provision of these CHAIH therapies (Holistic OT, n.d.). With supportive documentation on which intervention is being used, the changes it produced for the client, and how it enhanced their individualized occupation(s), CHAIH therapies are classified as reimbursable OT services (Holistic OT, n.d.; AOTA, 2017).

Historically, the United States’ healthcare system has prioritized addressing disease and illness over promoting health or preventative services (Elite Healthcare, 2016). However, the number of adults and children using CHAIH approaches has significantly increased over the years and continues to persist (NCCIH, 2018b). With holism integrated into the diverse scope of practice and with the profession's complementary creative tendencies, there is an opportunity for OT practitioners to be at the forefront of this notable shift in the United States’ healthcare system (Schmid, 2004).
Background and Significance

Complementary health approaches and integrative health practices are categorized in a complementary health domain determined by NCCIH; these domains include natural products and mind body practices (NCCIH, 2018a). The 2017 National Health Interview Survey (NHIS) showed significant increases in the use of mind body practices among United States’ adults and children when compared to the data fielded from the 2012 survey (NCCIH, 2018b). David Shurtleff, the acting Director of NCCIH, offers that the 2017 data suggest that more people are turning to mind body practices to support their health than ever before (NCCIH, 2018b). A recent study published a report from the NHIS from years 2002, 2007, 2012, and 2017. The authors found that the use of yoga, tai-chi, and Qigong (YTQ) (categorized as CHAIH therapies) have also substantially increased from 5.8 percent in 2002 to 14.5 percent in 2017 ($p \leq .001$) among United States’ adults within the past 15 years for all ages, racial groups, and genders, and its use is expected to continue to increase (Wang et al., 2019).

In response to the demands of a more integrative healthcare system, many OT educators are incorporating CHAIH content into their teaching (Elite Healthcare, 2016). An exploratory survey was used to examine the extent to which CHAIH approaches were included in OT curricula in the United States. Bradshaw (2016a) found that 79 percent of survey respondents ($N = 302$) reported curricular inclusion of these approaches. However, most educators felt inadequately prepared to teach general CHAIH content and to instruct students to incorporate these approaches into OT practice (Bradshaw, 2016a). These results coincide with Bradshaw’s (2016b) discussion that, without adequate support or professional consistency, practitioners are at a disadvantage when engaging with these persisting trends in healthcare. One potential source of the issue relating to the inconsistencies across OT programs in the United States may pertain
to ACOTE not explicitly including CHAIH in their educational standards; hence, not all schools are integrating them into their curriculum.

Jackman and associate’s 2017 study explored healthcare professional trainees’ (among which included OT students) perceptions around the integration of CHAIH. Although the trainees’ general attitudes were predominately supportive of CHAIH, many students expressed that these practices may be underused due to a lack of knowledge or a negative preconception about them (Jackman et al., 2017). These results corroborate that perceptions of CHAIH develop early in education and that unfamiliarity with these therapies may be associated with unwarranted fear regarding their integration in clinical practice (Jackman et al., 2017). This research also substantiates that consistency in OT curricula is necessary in guaranteeing that student understanding of CHAIH is informed and can be safely translated into clinical practice (Jackman et al., 2017).

Providing additional therapies is more than just an expanding practice. In fact, research suggests that individuals who received any complementary therapies during rehabilitation (provided by OT/PT practitioners) for a traumatic spinal cord injury (SCI) showed more significant decreases in pain severity from the six-month to 12-month follow-up assessments than the control group (Taylor et al., 2018). The most frequently used complementary therapies with the SCI patients were yoga and relaxation techniques (Taylor et al., 2018). Paras-Bravo et al. (2017) found that patients who reported symptoms of anxiety and who also received a protocol of abbreviated progressive muscle relaxation training (classified as CHAIH approach) showed improvements in their perceived quality of life and emotional, functional, and physical well-being. Both studies suggest that continued research is needed to further assess these
treatments' safety, efficacy, and clinical outcomes, but preliminarily point to a beneficial therapeutic role for these alternative therapies as they relate to OT practice.

Hardison and Roll (2016) describe how mindfulness interventions are being used in physical rehabilitation (OT practitioners represented) and shed light on the notable gaps in research. Promising findings were noted for improvements in adaptation to illness or disability (i.e., self-efficacy for disease management, increased quality of life, acceptance of pain symptoms), each well-defined within the OT scope of practice (Hardison & Roll, 2016). Another relevant article examines the impact of sensory integration therapy (SIT) (also classified as a CHAIH approach) on occupational performance in children with autism spectrum disorder (ASD). The intervention group showed significantly greater improvements in most assessment domain areas, including habituation, communication, interaction skills, process skills, and motor skills, supporting the effectiveness of SIT as it relates to OT practice (Kashefimehr et al., 2018).

Purpose of the Study

While the supporting evidence for the effectiveness of CHAIH continues to grow, the gaps in the literature make it difficult to determine how commonly OT practitioners are integrating these approaches with clients in their professional practice. With the increasing use of these therapies among adults and children in the United States, practitioners ought to be able to offer safe, research-driven treatments that support this persisting healthcare trend (NCCIH, 2018b). Understanding the prevalence and perceptions around the integration of CHAIH practices within the OT profession can help to prioritize future research supporting the safe and consistent professional integration of these approaches.
This research explores: (1) what is the prevalence of CHAIH practices among OT practitioners in the United States?; (2) which CHAIH therapies are most commonly integrated into OT practice?; (3) whether there is a difference in the responses between the practitioners who do integrate CHAIH in practice versus those who do not when self-rating their knowledge of and (4) their general attitudes regarding CHAIH?

Methods

Study Design

This research study implemented an exploratory, cross-sectional survey design and was approved by the affiliated University's human subjects institutional review board (HSIRB). The National Board for Certification in Occupational Therapy (NBCOT), the regulatory board that certifies OT practitioners across the United States, sent an email to all registered practitioners to support the research being conducted. During the research period, NBCOT reported that there were greater than 132,900 certified registered OT practitioners in the United States (NBCOT, 2019). The email included a thorough description of the research, informed consent, and a direct link to participate in the study. The inclusionary criteria for the study population detailed: (1) Practitioner must be currently registered with NBCOT (OTR); and (2) must hold a position involving direct patient care (or have not had a break from direct patient care lasting greater than six months over the past one year).

Data Collection

After conducting a thorough literature review and consultations with content experts, a 17-question online survey was developed. Data was collected using SurveyMonkey©. The survey included 16 close-ended questions and one open-ended question. The survey offered a
comprehensive definition of CHAIH and a wide-ranging list of examples to provide clarification and consistency for each participant completing it. The survey was pilot tested by three professional colleagues (NBCOT registered practitioners) prior to it being sent out. Modifications to the survey were made based on their input which resulted in the final version of the survey that was used. The survey instrument is included in Appendix B.

Data Analysis

The survey was open from November 6th, 2019, until November 27th, 2019. A database was generated including the responses from all OT practitioners registered with NBCOT who completed the survey (N = 4,420). Of the 17 questions included in the survey, four are being analyzed in this particular study. Those survey questions include:

1. Do you currently use CHAIH approaches with clients in your professional practice?
2. Check up to three of the CHAIH therapies you use most frequently with clients.
3. How knowledgeable would you rate yourself on the topic of CHAIH therapies?
4. What is your general attitude regarding the use of CHAIH in clinical practice?

Descriptive statistics are used to examine the general frequency of the responses. Difference between proportions is evaluated to investigate research questions three and four further. Two z-tests were conducted to assess whether there is a statistically significant difference in the responses between the practitioners who do integrate CHAIH in practice versus those who do not when self-rating the respective category: knowledge of or general attitude regarding CHAIH.
Results

A total of 4,420 practitioners across the United States and registered with the NBCOT completed this survey. The total number of responses fluctuates with each survey question given skip patterns within the survey. This survey captured responses from practitioners registered with NBCOT from each of the 50 United States, representing nine designated OT practice settings (e.g., school-based, home health, mental health, outpatient, skilled nursing, acute care, etc.), and working across all age groups from neonatal to geriatrics. The inclusion of rural, urban, and suburban communities, educational degrees attained, wide-ranging years of clinical experience, and responses including all gender and ethnic groups are also reflected in the comprehensive survey results.

Survey question one (N = 3,985) asked participants if they are currently using CHAIH approaches with clients in their professional practice. Graph 1 depicts these results. Sixty-six percent (N = 2,636) of practitioners responded "Yes" to implementing at least one of these complementary health practices with clients. Less than 30 percent (N = 1,150) responded "No" and five percent (N = 198) were still "Unsure" after reviewing the comprehensive definition and list of examples provided on that survey page.

Graph 1: Prevalence of Use of CHAIH Therapies among OT Practitioners in the United States

![Graph showing the prevalence of CHAIH therapies among OT practitioners.](graph)

(N = 3,985)
Question two on the survey (N = 2,647) continued by specifying which CHAIH therapies are being used most frequently in the respondent's professional practice. Graph 2 represents the frequency of each CHAIH therapy offered on the survey which is being integrated into OT practice across the United States. Of the 21 survey options provided, each CHAIH practice was represented by no fewer than five respondents.

Graph 2: Occurrence of Each CHAIH Therapy Used Among OT Practitioners in U.S.

The top five CHAIH approaches being incorporated by practitioners were deep breathing, sensory techniques, yoga, mindfulness, and massage. Each of these therapies had a response rate greater than eight percent. Deep breathing was the most commonly integrated CHAIH approach, with 24 percent of practitioners (N = 1,692) specifying the practice. Ayurveda, Alexander Technique, and reflexology were the least commonly integrated approaches among U.S. OT practitioners. These CHAIH therapies each had a response rate lower than 0.20 percent.

Survey question seven (N = 3,969) asked about the practitioner's self-rated knowledge of CHAIH therapies using a Likert-scale format. Graph 3 represents the responses regarding the practitioner's self-rated knowledge. Forty-one percent of practitioners (N = 1,618) rated themselves as "Moderately" knowledgeable, making this the most common survey response.
Seven percent of respondents (N = 277) rated themselves as "Not at all" knowledgeable.

Eighteen percent of respondents rated themselves as either "very" or "extremely" knowledgeable when implementing these approaches with clients in their professional practice.

Graph 3: OT Practitioner’s Self-Rated Knowledge of CHAIH Therapies

Difference between proportions was used to analyze this data further. The results of a z-test determined that there is a statistically significant difference (p < .001) between the responses when comparing the groups of practitioners who do and those who do not integrate these CHAIH therapies with clients regarding their self-rated knowledge of the clinical integration of these approaches. These results suggest that OT practitioners in the United States who incorporate these CHAIH approaches tend to have a higher self-rated level of knowledge on their use in clinical practice than their professional colleagues who do not integrate them.

Finally, question eight on the survey (N = 3,979) asked about the practitioner's general attitudes surrounding CHAIH therapies using a Likert-scale format. Graph 4 depicts the responses regarding the practitioner's general attitudes. A combined total of approximately 78 percent of respondents (N = 3,118) reported a "Positive" or "Slightly Positive" view on the integration of CHAIH therapies in OT practice. Less than five percent combined (N = 173)
responded with a "Negative" or "Slightly negative" attitude surrounding the integration of CHAIH therapies in their professional practice.

Graph 4: OT Practitioner's Self-Rated Attitudes toward CHAIH Therapies

Difference between proportions was used to analyze this data further. The results of a z-test determined that there is a statistically significant difference ($p < .001$) between the responses when comparing the groups of practitioners who do and those who do not integrate these CHAIH therapies with clients regarding their general attitudes surrounding the clinical integration of these CHAIH approaches. These results suggest that OT practitioners who do not incorporate CHAIH approaches tend to have a more negative attitude toward their integration in OT practice than their professional colleagues who integrate them with clients.

Discussion

The first research question focuses on the prevalence of the use of CHAIH therapies in clinical practice. The results suggest that the majority of OT practitioners across the United States are implementing CHAIH approaches with their clients in practice. However, less than 18 percent of practitioners self-rated their level of knowledge of CHAIH therapies as "Very" or "Extremely" knowledgeable. Having found that 66 percent of practitioners incorporate these
practices with their clients, it is concerning that so few practitioners would rate their level of knowledge as more than "Moderate." These results further substantiate the potential knowledge gap discussed in the literature surrounding the inadequate preparation of OT students entering a healthcare system that is progressively integrating these CHAIH approaches (Bradshaw, 2016b; Morris & Jenkins, 2018). This supports the need for further research examining these knowledge and practice discrepancies to close this significant gap for the OT profession.

This study also evaluates which CHAIH therapies are most commonly integrated with OT clients across the United States. These results also validate the literature, verifying that among the most integrated CHAIH approaches are relaxation techniques (e.g., deep breathing, mindfulness) and yoga (Taylor et al., 2018). Furthermore, having determined the occurrence of use of a wide-ranging list of CHAIH therapies among OT practitioners in the United States, this study offers guidance that could aid in determining focus areas for future evidence-based and translational research related to the safety and efficacy of these therapies to improve their utilization in practice. With the data suggesting that deep breathing, sensory techniques, and yoga are being integrated more frequently in OT practice than reflexology or Alexander Technique, prospective research can be directed in a way that supports more practitioners in offering evidence-based CHAIH practices to their clients receiving these services.

Finally, this paper focuses on the practitioner's self-perceived knowledge of CHAIH therapies and their general attitudes surrounding the integration of CHAIH in OT practice. The results from both analyses were statistically significant, determining a meaningful difference between the groups of practitioners who do and do not integrate these CHAIH therapies with clients in their professional practice, both when considering their self-rated knowledge and their general attitudes. This study further substantiates Bradshaw's (2016b) statement that addressing
this knowledge gap is crucial to positively impacting a change in attitudes toward these CHAIH therapies.

Strengths and Limitations

This study is the first to develop a comprehensive database of its size regarding the integration of CHAIH in clinical practice including responses from OT practitioners registered with NBCOT across the United States, from nine OT practice settings, and with varying years of clinical experience. These results can help establish a foundation for strategizing how to close these gaps in evidence based CHAIH practices and the translational research that drives our healthcare system. The estimated number of practitioners registered with NBCOT at the time the survey was sent out was greater than 132,900 (NBCOT, 2019). While the survey obtained responses from a broad and inclusive audience, the total number of respondents (N = 4,420) only secured a three percent response rate. To determine whether these results are generalizable, it is important to compare the participant demographics with the available data which encompasses the OT profession across the United States.

The AOTA 2019 Workforce and Salary Survey is the most recent and comprehensive dataset detailing the United States’ OT profession workforce. The results from AOTA found that 84 percent of OT practitioners classified themselves as white and 91 percent classified themselves as female (AOTA, 2020a). Those results correspond with this research which found that 87 percent of participants were white, and 93 percent were female. The AOTA survey detailed that 67 percent of practitioners who responded earned a master’s degree (AOTA, 2020a); similarly, this research found that 63 percent of participants also reported earning a master’s degree. As it relates to years of clinical experience, the following percentages are
reported by AOTA and this research study, respectively: two to ten years (40%; 36%), 11 to twenty years (both were 23%), and twenty or more years (both were 37%) (AOTA, 2020a).

The distribution of respondents’ geographic location in which they practice as well as their primary practice setting also correspond between each of these surveys. The results from AOTA found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (8%) (AOTA, 2020a). Similarly, this study found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (7%). Finally, the AOTA 2019 Workforce and Salary Survey results compare to this research study’s results regarding practice setting. The following percentages are reported by AOTA and this research, respectively: early intervention (both were 4%), mental health (2%; 3%), schools (both were 18%), and skilled nursing facility (14%; 13%) (AOTA, 2020a).

Largely, the results from the AOTA 2019 Workforce and Salary Survey coincide with the results found in this research study. This could be an indication that, while this particular study only captured a three percent response rate overall, the results are sufficient and can be generalized to the United States’ OT profession as a whole. After having established the similarities in AOTA’s survey results as it relates to the OT profession across the United States, the broad and inclusive survey responses are considered a strength of this research.

Limitations of the study include the possibility of response bias. While the sample size is suitable for this research, a potential bias is that those with skills in and positive attitudes toward CHAIH approaches may have been more likely to respond to the survey. Furthermore, because this was a self-administered online survey, responses may not be an accurate representation of
the practitioner’s actual clinical practices and the possibility of social desirability bias should be considered. In addition, the broad and inconsistent definition of CHAIH related to the OT scope of practice could have impacted consistency between participants completing the survey. While a comprehensive definition of this term was offered along with a vast list of examples to provide clarification and uniformity, respondents may not have read or understood that section of the survey page or may have responded "No" if a specific CHAIH approach they use was not included in the list of examples.

Implications for OT Practice

The results of this study have the following implications for OT practice:

- This paper exemplifies the broad and inconsistent definition of CHAIH. With the majority of OT practitioners integrating these approaches with clients in their professional practice and with the persisting trends in healthcare across the United States, it is necessary to develop a consistent and concise definition as it relates to the OT scope of practice.

- These results support previous research studies which indicate that OT programs across the United States have inconsistencies regarding the inclusion of CHAIH into the curricula. To ensure the consistent integration of CHAIH throughout United States’ OT programs, ACOTE ought to revise the educational standards to explicitly include these approaches to ensure well-rounded therapists are entering the field in a healthcare system that is progressively integrating these practices. Addressing this knowledge gap is essential in impacting the practitioner’s attitudes toward these CHAIH therapies.
• With this knowledge and practice gap defined, and these results substantiating the relevant literature, we must expand the awareness of these CHAIH approaches among practicing clinicians and their client base. Continuing to expand the research related to the efficacy of various CHAIH therapies with an emphasis on their relation to OT practice would support the advancement of the profession, the skill of the practitioners, and the confidence of their client base.

Conclusion

With the discernable growing popularity of these complementary health practices across the United States, it is important to understand the prevalence of and perceptions toward these CHAIH approaches among OT practitioners (NCCIH, 2018a). Having a better understanding of how frequently CHAIH approaches are being integrated, which specific therapies are most common in OT practice, and the self-rated knowledge and general perceptions of these practices amid practitioners will help to prioritize prospective evidence based and translational research supporting the safe and consistent professional integration of these approaches. Occupational therapists must stay current in the evolving healthcare system to effectively contribute to the expanding body of evidence-based research surrounding the integration of these CHAIH practices with clients.

References


Occupational Therapy in Health Care, 30(1), 80-94.

https://doi.org/10.3109/07380577.2014.982315


http://dx.doi.org/10.5014/ajot.2016.018069


https://doi.org/10.3390/ijerph15020392

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CHAPTER III

PREDICTING A MODEL OF USAGE OF CHAIH APPROACHES IN CLINICAL PRACTICE AMONG OCCUPATIONAL THERAPISTS ACROSS THE UNITED STATES

Introduction

While the scientific research concentrated on the integration and efficacy of complementary health approaches and integrative health (CHAIH) continues to emerge, the definition of this term remains fluid (American Occupational Therapy Association [AOTA], 2011). Delineating each part of this phrase separately offers a more precise introduction to the essence of CHAIH. Complementary health approaches are more unconventional, non-mainstream practices used to complement traditional Western medicine practices (National Center for Complementary and Integrative Health [NCCIH], 2018a). Integrative health incorporates both conventional and complementary approaches into treatment, promoting a more inclusive approach (NCCIH, 2018a). As this definition continues to adapt toward clinical practice, it is important to detail that CHAIH approaches offer a holistic and individualized focus with clients. This client-centered distinction includes the mental, emotional, functional, spiritual, social, and community characteristics relating to the “whole person” (NCCIH, 2018a).

Within the occupational therapy (OT) practice framework, the interpretation of OT aligns with the National Institutes of Health's (NIH) definition of integrative health as both definitions prioritize incorporating holistic, person-centered approaches when managing overall health and wellness (AOTA, 2014; NCCIH, 2018a). Moreover, the OT practice framework and the NIH definition each identify the value of offering an inclusive focus when treating the whole person, considering all aspects of one’s health (i.e., mental, emotional, functional, spiritual, social, and community) (AOTA, 2014; NCCIH, 2018a). The National Center for Complementary and
Integrative Health (NCCIH) indicates that the use of CHAIH approaches to support health and wellness has grown within various health care settings (e.g., hospitals, hospices, skilled nursing/health facilities) across the United States for more than 15 years (Elite Healthcare, 2016). The NCCIH has established a plan which aims to promote a thorough understanding of complementary and integrative health approaches and the efficacy associated with these practices with support from progressive scientific evidence (NCCIH, 2016a).

While many members of an interdisciplinary team can provide CHAIH therapies (e.g., physical therapists, speech and language pathologists, nurses), OT practitioners are particularly positioned to do so in an inclusive and therapeutic manner. Occupational therapists are often recognized for applying a holistic perspective to address one’s mind, body, and spirit as well as environmental aspects (Elite Healthcare, 2016). Additionally, Health and Wellness has been identified as one of six “key practice areas” for practitioners (AOTA, 2020b). Occupational therapists can also bill federal and private insurances (e.g., Medicare, Medicaid, Blue Cross and Blue Shield, Health Maintenance Organizations, etc.) for the provision of these CHAIH therapies (Holistic OT, n.d.). With descriptive documentation on which intervention is being used, the changes it produced for the client, and how it enhanced their individualized occupation(s), CHAIH therapies are classified as reimbursable OT services (Holistic OT, n.d.; AOTA, 2017).

The American Occupational Therapy Association (AOTA) endorses that CHAIH practices may be used by practitioners to "prepare and enhance participation and engagement in occupation by persons, groups, and populations" (AOTA, 2014). With the profession's client-centered approach to practice and philosophical background substantiating the use of CHAIH, there are many ways that OT practitioners can integrate these therapies in their clinical practice (AOTA, 2017). Some examples include incorporating CHAIH as preparatory methods and tasks
(e.g., Qigong, deep breathing, and guided imagery for stress reduction before treatment session intervention or activities of daily living [ADLs]), to support occupations (e.g., mindfulness or meditation for pain reduction), and with various activities (e.g., Yoga or Tai Chi for standing balance during occupations) (AOTA, 2017).

The Accreditation Council for Occupational Therapy Education (ACOTE) is a part of AOTA which is recognized as the accrediting agency for OT education by both the United States Department of Education (USDE) and the Council for Higher Education Accreditation (CHEA) (Accreditation Council for Occupational Therapy Education [ACOTE], n.d.). Although the incorporation of CHAIH into OT education is not explicitly stated by ACOTE, the inclusion is indirectly supported throughout the 2018 Standards and Interpretive Guide. As an example, the guidelines define that OT programs must promote “the formulation and implementation of the therapeutic intervention plan to facilitate occupational performance and participation must be client centered and culturally relevant,” (ACOTE, 2020). This statement parallels AOTA’s position that CHAIH approaches are client-centered and may enhance participation in occupation by persons, groups, and populations, enhancing their cultural relevance (AOTA, 2014).

Traditionally, the United States’ healthcare system has concentrated on addressing disease and illness over promoting health or preventative services (Elite Healthcare, 2016). Nonetheless, the number of adults and children using CHAIH approaches has considerably increased over the years and this trend continues to persist (NCCIH, 2018b). Occupational therapists exemplify a holistic and client-centered approach which is embedded in their diverse scope of practice. With the profession's complementary creative tendencies, there is a unique opportunity for OT practitioners to be at the forefront of this momentous shift in the United States’ healthcare system (Schmid, 2004).
Background and Significance

Wang and associates (2019) published a report from the National Health Interview Survey (NHIS) from years 2002, 2007, 2012, and 2017. Their results indicated that the use of yoga, tai-chi, and Qigong (YTQ) (each categorized as CHAIH therapies) have significantly increased from 5.8 percent in 2002 to 14.5 percent in 2017 ($p \leq .001$) among United States’ adults within the past 15 years for all ages, racial groups, and genders (Wang et al., 2019). The 2017 NHIS also revealed substantial increases in the use of mind body practices among United States’ adults and children when compared to the data fielded from the 2012 survey (NCCIH, 2018b). Mind body practices is one of the domains designated by the NCCIH in which CHAIH practices are categorized (NCCIH, 2018a). David Shurtleff, the acting Director of NCCIH, offers that the 2017 data suggest that more people are turning to mind body practices to support their health than ever before (NCCIH, 2018b).

In response to the increasing consumer demands for a more integrative United States’ healthcare system, many OT educators are incorporating CHAIH content into their teaching (Elite Healthcare, 2016). Data collected from Bradshaw’s (2016a) exploratory survey, which examined the extent to which CHAIH approaches were included in OT curricula in the United States, found that 79 percent of respondents ($N = 302$) reported curricular inclusion of these approaches. Still, most educators felt inadequately prepared to teach general CHAIH content and to instruct students to incorporate these approaches into OT practice (Bradshaw, 2016a). These results substantiate Bradshaw's (2016b) analysis which asserts that practitioners are at a disadvantage when engaging with these persisting healthcare trends without adequate support or professional consistency. One potential source of the inconsistencies noted across OT programs in the United States may be related to the lack of explicitness regarding the inclusion of CHAIH
in ACOTE’s educational standards; therefore, not all OT programs are integrating them into the curriculum.

Beyond curricular inclusion, Hardison and Roll (2016) describe how mindfulness interventions are being used in physical rehabilitation (with OT practitioners represented). Their results were promising, noting improvements in adaptation to illness or disability (i.e., self-efficacy for disease management, increased quality of life, acceptance of pain symptoms), which are well-defined within the OT scope of practice (Hardison & Roll, 2016). Another study found that patients who reported symptoms of anxiety and who also received a protocol of abbreviated progressive muscle relaxation training (classified as CHAIH approach) showed improvements in their perceived quality of life and emotional, functional, and physical well-being (Paras-Bravo et al., 2017). Both studies suggest that continued research is needed to further assess these treatments’ safety, efficacy, and clinical outcomes, but preliminarily point to a beneficial therapeutic role for these alternative therapies as they relate to OT practice.

Providing additional therapies is more than just an expanding practice. Research also suggests that individuals who received any complementary therapies during rehabilitation (provided by OT/PT practitioners) for a traumatic spinal cord injury (SCI) showed more significant decreases in pain severity from the six-month to 12-month follow-up assessments than the control group (Taylor et al., 2018). Yoga and relaxation techniques were among the most used complementary therapies with the SCI patients (Taylor et al., 2018). Kashefimehr and colleagues (2018) examine the impact of sensory integration therapy (SIT) (also classified as a CHAIH approach) on occupational performance in children with autism spectrum disorder (ASD). The intervention group showed significantly greater improvements in most assessment
domain areas, including habituation, communication, interaction skills, process skills, and motor
skills, supporting the efficacy of SIT as it relates to OT practice (Kashefimehr et al., 2018).

Finally, a previous study which analyzed data from the NHIS acknowledged regional
differences across a variety of CHAIH practices in the United States, which may have its own
implications for OT practice (Peregoy et al., 2014). Peregoy et al. (2014) found regional
variation amid the use of CHAIH practices, affirming that yoga with deep breathing and
meditation was nearly 40 percent higher in the Pacific and Mountain regions when compared to
the United States overall. In addition, the data showed lower use of practitioner based CHAIH
approaches (such as chiropractic or manipulation) in the East South Central, South Atlantic, and
West South Central regions when compared to the national average (Peregoy et al., 2014). This
National Center for Health Statistics (NCHS) data brief reveals that regional differences, likely
related to the environmental, cultural, and economic factors that are unique to various towns and
regions, persist across a wide range of CHAIH practices in the United States (Peregoy et al.,
2014).

Purpose of the Study

Previous research indicated that the majority of OT practitioners across the United States
are incorporating CHAIH approaches with their clients in clinical practice; however, only 18
percent of respondents rated themselves as “Very” or “Extremely” knowledgeable on these
practices (Renner et al., 2021). While the use of these therapies continues to expand among
adults and children in the United States, practitioners must feel capable to offer safe, research-
driven interventions which support this notable and persisting healthcare trend (NCCIH, 2018b).
More than just having a better understanding of the incidence of CHAIH use amid OT
practitioners, determining whether the data suggest any relationship(s) (i.e., considering
geographic regions, practice settings, client populations, years of practice, etc.) could help to dissolve the treatment and literature gaps more productively. Understanding the prevalence and significant predictors, if any, regarding the integration of CHAIH practices within the OT profession can help to prioritize future research supporting the safe and consistent professional integration of these approaches.

This research explores which factors and characteristics of OT practitioners, if any, are significant predictors of whether a practitioner is integrating CHAIH approaches into their clinical practice? The specific factors being considered in this study include the practitioner’s: geographic location (using nine designated geographic regions per the United States Census Bureau’s designated divisions); community type; practice setting; population served; highest degree attained; years of clinical experience; exposure as a student; personal use; perceived ability to bill for services; gender (Female/Non-Female); and race (White/Non-White).

Methods

Study Design

This research study employed an exploratory, cross-sectional survey design and was approved by the affiliated University's human subjects institutional review board (HSIRB). The National Board for Certification in Occupational Therapy (NBCOT), the regulatory board that certifies OT practitioners across the United States, sent an email to all registered practitioners to support the research being conducted. At the time the research was piloted, NBCOT reported that there were greater than 132,900 certified practitioners in the United States (NBCOT, 2019). The email which was sent out included a thorough description of the research, informed consent, and a direct link to participate in the study. The inclusionary criteria for the study population
detailed: (1) Practitioner must be currently registered with NBCOT (OTR); and (2) must hold a position involving direct patient care (or have not had a break from direct patient care lasting greater than six months over the past one year).

Data Collection

After completing a detailed literature review and consultations with content experts, a 17-question online survey was developed. The survey included 16 close-ended questions and one open-ended question. Included in the survey was a comprehensive definition of CHAIH and a wide-ranging list of examples to provide clarification and consistency for each participant completing it. Data was collected using SurveyMonkey©. The survey was pilot tested by three professional colleagues (NBCOT registered practitioners) prior to it being sent out. Amendments were made to the survey based on their input which resulted in the final version of the survey that was sent out. The survey instrument is included in Appendix B.

Data Analysis

The survey was open from November 6th, 2019, until November 27th, 2019. A database was created including the responses from all practitioners registered with NBCOT who participated (N = 4,420). Of the 17 survey questions, 11 questions are being analyzed in this study (questions 4-6, 10-17; see Appendix B for more detail on specific questions).

Descriptive statistics were used to examine the frequency of the responses. A multiple logistic regression analysis was then completed by fitting a model to estimate the effects of predictors on whether a practitioner was currently incorporating CHAIH therapies with clients in their professional practice. The goal of this regression analysis was to find a parsimonious regression model that best fits the survey response data to predict whether a clinician is using
CHAIH therapies with clients in practice. Data analysis was performed using Minitab software and Excel.

The dependent binary variable is focused on whether the practitioner is currently using CHAIH therapies in their clinical practice; a response indicating that they are incorporating these therapies will be modeled with the multiple logistic regression. The 11 independent variables considered in the regression include the practitioner’s: (1) geographic location (using nine designated geographic regions per the United States Census Bureau’s designated divisions); (2) community type; (3) practice setting; (4) population served; (5) highest degree attained; (6) years of clinical experience; (7) exposure as a student; (8) personal use; (9) perceived ability to bill for services; (10) gender; and (11) race. The purpose of conducting this multiple logistic regression analysis is to explore any potential relationships that may exist within the survey response data. To ensure the quality of the regression analysis, basic model-fitting techniques for variable selection and regression diagnostics were used.

Results

A total of 4,420 practitioners registered with NBCOT and working in the United States completed this survey. The total number of responses between each survey question varies due to the use of skip patterns within the survey. This survey captured responses from OT practitioners registered with NBCOT from each of the 50 United States (including rural, urban, and suburban communities), representing nine designated OT practice settings (e.g., school-based, home health, mental health, outpatient, skilled nursing, etc.), and working across all age groups from neonatal to geriatrics. The responses also include various educational degrees attained, wide-ranging years of clinical experience, and responses from all gender and ethnic groups.
Prior to conducting the multiple logistic regression analysis, descriptive statistics were obtained on the 11 independent variables. The descriptives were reviewed to determine if any adjustments would be needed due to factors such as insufficient sample sizes. Among the 11 independent variables, adjustments were made on six. The participant’s geographic locations were recoded to categorize each of the 50 states into one of nine designated regions per the United States Census Bureau’s divisions which include: East North Central, East South Central, Middle Atlantic, Mountain, New England, Pacific, South Atlantic, West North Central, and West South Central (United States Bureau of the Census, 1995; Table 1).

Table 1: States Categorized in Nine Designated Geographic Regions

<table>
<thead>
<tr>
<th>Geographic Regions</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>East North Central</td>
<td>Illinois, Indiana, Michigan, Ohio, Wisconsin</td>
</tr>
<tr>
<td>East South Central</td>
<td>Alabama, Kentucky, Mississippi, Tennessee</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>DC, Delaware, Maryland, New York, New Jersey, Pennsylvania</td>
</tr>
<tr>
<td>Mountain</td>
<td>Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming</td>
</tr>
<tr>
<td>New England</td>
<td>Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont</td>
</tr>
<tr>
<td>Pacific</td>
<td>Alaska, California, Hawaii, Oregon, Washington</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>Florida, Georgia, North Carolina, South Carolina, Virginia, West Virginia</td>
</tr>
<tr>
<td>West North Central</td>
<td>Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota</td>
</tr>
<tr>
<td>West South Central</td>
<td>Arkansas, Louisiana, Oklahoma, Texas</td>
</tr>
</tbody>
</table>

(United States Bureau of the Census, 1995)

For primary population served, the categories initially included geriatrics, adults, pediatrics, neonatal, and other; however, the neonatal population had less than a one percent response rate. With such a small sample size (N = 32), a decision was made to group “neonatal” into the “other” category. As it pertains to the highest degree attained by the respondent, the sample size for “PhD” and “Other” were each less than one percent. While the sample size for
participants who attained an OTD was a bit higher (approximately six percent), a decision was made to combine “PhD,” “OTD,” and “Other” into one category described as “Higher than Masters.” The reason that “Other” was also included in this category was because the majority of these respondents classified themselves as achieving degrees such as Doctorate in Health Sciences, Educational Doctorate, Psychology Doctorate, or “nearly completed” a Doctoral degree (such as a PhD). The categories for years of clinical experience were also modified. The practitioners with less than one year of clinical experience also had a small sample size with a response rate below four percent. The adjusted categories for years of clinical experience include: zero to ten years, 11 to twenty years, and more than 20 years.

The gender and race variables were also modified prior to conducting the multiple logistic regression analysis. The options for gender initially included Female, Male, Non-Binary, Other, and Prefer Not to Say; however, the sample sizes for all genders combined (excluding female) reached less than seven percent. Therefore, a decision was made to classify gender as Female or Non-Female for the logistic regression. Regarding race, when combining the nine categories offered on the survey (excluding white), the sample size was less than 12 percent (with the highest reaching only three percent). Consequently, a similar decision was made to organize race by White and Non-White when completing the regression analysis.

Finally, two of the 11 independent variables were recoded prior to completing the multiple logistic regression analysis to change the nominal response variables from three levels (yes, no, and unsure) to two levels represented by 0 and 1 (removing “unsure”). These independent variables include exposure to CHAIH as a student and personal use. Similarly, the dependent variable, whether the practitioner is using CHAIH in their clinical practice, was also recoded to two levels represented by 0 (non-use) and 1 (use). For the variable community type,
the “unsure” response was also removed. The decision was made to remove “unsure” from these nominal responses for the logistic regression primarily due to insufficient sample sizes.

Each of the 11 categorical predictors also required a reference level to be set prior to conducting the analysis. These levels were chosen based on educated assessments regarding the response that would be most likely to incorporate CHAIH in clinical practice. If a reference level was unable to be established in accordance with previous research or clinical expertise, it was based on the response with the largest sample size. The reference levels chosen for each explanatory variable are as follows: Geographic location (Pacific); Community type (Urban); Practice setting (Inpatient Rehabilitation); Population served (Adults); Highest degree attained (Masters); Years of clinical experience (More than 20); Exposure as a student (1 or “yes”); Personal use (1 or “yes”); Perceived ability to bill for services (1 or “yes”); Gender (Female); and Race (White).

A p-value of 0.05 was set prior to performing the analysis. Based on the results of the multiple logistic regression analysis, the practitioners were more likely to incorporate CHAIH approaches into their clinical practice if they worked in the following practice settings: home health ($p = .004$), mental health ($p < .001$), private practice ($p < .001$) and school-based ($p = .004$). The primary population the OT practitioner served was also statistically significant, indicating that practitioners working with the pediatric population ($p < .001$) were more likely to integrate CHAIH approaches. Moreover, the results showed that practitioners working with the geriatric population ($p = .004$) were less likely to integrate CHAIH into their clinical practice. Whether an OT practitioner thought they were able to bill for CHAIH therapies was also statistically significant. The results showed that if a respondent were unsure if they could bill ($p$
or if they believed they could not bill ($p < .001$) for CHAIH therapies, they were less likely to use them in their clinical practice.

Occupational therapists with 21 or more years of clinical experience were most likely to use CHAIH with clients. The results showed that a practitioner with zero to ten years of clinical experience ($p < .001$) and with 11 to 20 years of clinical experience ($p = .014$) were less likely to incorporate CHAIH approaches into their clinical practice. Moreover, the results showed a statistically significant increase in use if a practitioner was exposed to CHAIH as a student as well as if they integrate CHAIH practices into their personal lives. Thus, if an OT practitioner was not exposed as a student ($p < .001$) or if they do not use CHAIH in their personal lives ($p < .001$), they are less likely to integrate CHAIH into their clinical practice. No significant associations were found for geographic location ($p = .074$), community type ($p = .271$), degree attained ($p = .212$), gender ($p = .733$), or race ($p = .369$). For the independent variables listed with multiple categories (i.e., geographic region consists of nine designated divisions/categories), the lowest $p$-value is indicated.

Table 2 illustrates the odds ratios (OR) for each statistically significant categorical predictor. An OR is a measure of association between an exposure and an outcome, representing the odds that an outcome will occur given a particular exposure (Szumilas, 2010). For this research study, the exposure is the independent or predictor variable being considered (e.g., primary practice setting, years of clinical experience, gender, etc.) and the outcome is whether the practitioner is using CHAIH with clients in their professional practice. An OR less than one indicates the modeled outcome is less likely to occur in the presence of the indicated category and an OR above one indicates the modeled outcome is more likely to occur in the presence of the indicated category. The 95 percent confidence interval (CI) is used to estimate the precision.
of the OR, with CIs with large ranges suggesting a low level of precision and CIs with small ranges suggesting a higher precision (Szumilas, 2010).

Table 2: Odds Ratios for Categorical Predictors

<table>
<thead>
<tr>
<th>Predictor Variable**</th>
<th>Odds Ratio</th>
<th>95% C.I.</th>
<th>P-Value (Sig*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing (Yes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.1</td>
<td>(0.0, 0.1)</td>
<td>0.000 *</td>
</tr>
<tr>
<td>Unsure</td>
<td>0.0</td>
<td>(0.0, 0.1)</td>
<td>0.000 *</td>
</tr>
<tr>
<td>Practice Setting (IPR***)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Care</td>
<td>0.9</td>
<td>(0.6, 1.3)</td>
<td>0.654</td>
</tr>
<tr>
<td>Early Intervention</td>
<td>1.2</td>
<td>(0.7, 2.1)</td>
<td>0.555</td>
</tr>
<tr>
<td>Home Health</td>
<td>1.9</td>
<td>(1.2, 2.8)</td>
<td>0.002 *</td>
</tr>
<tr>
<td>Mental Health</td>
<td>6.1</td>
<td>(3.0, 12.3)</td>
<td>0.000 *</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>1.5</td>
<td>(1.0, 2.2)</td>
<td>0.073</td>
</tr>
<tr>
<td>Outpatient</td>
<td>1.4</td>
<td>(1.0, 2.0)</td>
<td>0.072</td>
</tr>
<tr>
<td>Private Practice</td>
<td>4.7</td>
<td>(2.6, 8.0)</td>
<td>0.000 *</td>
</tr>
<tr>
<td>School-Based</td>
<td>2.1</td>
<td>(1.3, 3.2)</td>
<td>0.001 *</td>
</tr>
<tr>
<td>Skilled Nursing Facility</td>
<td>1.0</td>
<td>(0.7, 1.5)</td>
<td>0.901</td>
</tr>
<tr>
<td>Years of Experience (21+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-10</td>
<td>0.7</td>
<td>(0.5, 0.8)</td>
<td>0.000 *</td>
</tr>
<tr>
<td>11-20</td>
<td>0.8</td>
<td>(0.6, 0.9)</td>
<td>0.014 *</td>
</tr>
<tr>
<td>Exposure as Student (Yes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (No)</td>
<td>0.5</td>
<td>(0.4, 0.5)</td>
<td>0.000 *</td>
</tr>
<tr>
<td>Personal Use (Yes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (No)</td>
<td>0.1</td>
<td>(0.1, 0.1)</td>
<td>0.000 *</td>
</tr>
<tr>
<td>Population Served (Adults)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geriatrics (65+ years)</td>
<td>0.7</td>
<td>(0.5, 0.9)</td>
<td>0.004 *</td>
</tr>
<tr>
<td>Other (includes Neonatal)</td>
<td>1.1</td>
<td>(0.7, 1.6)</td>
<td>0.791</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>1.9</td>
<td>(1.4, 2.6)</td>
<td>0.000 *</td>
</tr>
</tbody>
</table>

* The p-value was set at 0.05; anything below 0.05 is considered statistically significant.
** The predictor variables listed are the independent variables which showed statistical significance. Reference levels are detailed next to each of the predictor variables.
*** IPR stands for Inpatient Rehabilitation.

Predictors of OT practitioners Incorporating CHAIH into Their Clinical Practice

The multiple logistic regression showed that, of the 11 independent variables in the analysis, the six that were statistically significant included: (1) ability to bill for services; (2)
practice setting; (3) years of clinical experience; (4) exposure as a student; (5) personal use; and (6) primary population served (shown in Table 2). As it related to the practitioner’s perceived ability to bill for CHAIH services, those who reported that they were unable to bill for CHAIH (OR: 0.1; CI: 0.0, 0.1) as well as those who were unsure if they could bill for CHAIH (OR: 0.0; CI: 0.0, 0.1) were significant predictors which indicated non-use of CHAIH approaches with clients. Among the ten designated OT practice settings included in the analysis, the home health (OR: 1.9; CI: 1.2, 2.8), mental health (OR: 6.1; CI: 3.0, 12.3), private practice (OR: 4.7; CI: 2.6, 8.0), and school-based (OR: 2.1; CI: 1.3, 3.2) settings were among the significant predictors indicating the incorporation of CHAIH into the practitioner’s clinical practice. The results from the analysis indicated that practitioners working in the mental health setting were six times more likely to incorporate CHAIH approaches into their clinical practice when compared to practitioners working in inpatient rehabilitation.

Years of clinical experience was also a significant predictor of whether a practitioner was integrating CHAIH into their clinical practice, showing that practitioners with 21 or more years of experience are more likely to use these approaches. The respondents with zero to ten years of experience (OR: 0.7; CI: 0.5, 0.8) as well as those with 11 to 20 years of experience (OR: 0.8; CI: 0.6, 0.9) were less likely to use CHAIH with clients. Exposure as a student and personal use of CHAIH practices were also significant predictor variables. Practitioners who were not exposed as a student (OR: 0.5; CI: 0.4, 0.5) as well as those who do not use these practices in their personal lives (OR: 0.1; CI: 0.1, 0.1) were less likely to incorporate them into their clinical practice. Finally, OT practitioners who worked with the geriatric population (OR: 0.7; CI: 0.5, 0.9) were less likely to use CHAIH while practitioners working with the pediatric population
(OR: 1.9; CI: 1.4, 2.6) were nearly twice as likely to incorporate these practices with their clients as those working primarily with an adult population.

A stepwise regression, which involves the computerized removal of independent variables which are not significant to determine the model that best predicts the use of CHAIH in clinical practice, was also performed (shown in Table 3). For the enter criteria, a value of 0.05 was used and for the exit criteria, a value of 0.15 was used. The results show that the area under the Receiver Operating Characteristics (ROC) curve is 0.84. The higher the value for the area under the ROC curve (up to 1) suggests that the model is a good prediction of whether an OT practitioner is integrating CHAIH into their clinical practice based on the predictor variables included. Generally, an ROC of less than 0.6 will suggest the model needs further refinement (Hosmer & Lemeshow, 2004). Because this is a novel dataset, 0.84 is a strong value suggesting a good fit for this prediction model. The coefficient of the six variables in the final stepwise model verify the findings of the odds ratios discussed previously.

Table 3: Final Stepwise Selection Model

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Billing</td>
<td>-3.15</td>
<td>0.000</td>
</tr>
<tr>
<td>Personal Use (Yes)</td>
<td>-2.20</td>
<td>0.000</td>
</tr>
<tr>
<td>Practice Setting</td>
<td>1.81</td>
<td>0.000</td>
</tr>
<tr>
<td>Exposed as Student (Yes)</td>
<td>-0.79</td>
<td>0.000</td>
</tr>
<tr>
<td>Population Served</td>
<td>0.65</td>
<td>0.000</td>
</tr>
<tr>
<td>Years of Experience</td>
<td>-0.41</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Area Under ROC Curve</strong></td>
<td>0.84</td>
<td></td>
</tr>
</tbody>
</table>

- Candidate terms: Billing, Practice Setting, Gender, Race, Years of Experience, Highest Degree, Geographic Location, Exposed as Student, Personal Use, Population Served, Community Type
- $\alpha$ to enter = 0.05, $\alpha$ to remove = 0.15
Discussion

Of the 11 independent variables considered in the multiple logistic regression analysis, six were statistically significant. These predictor variables included: (1) perceived ability to bill for services; (2) primary practice setting; (3) years of clinical experience; (4) exposure to CHAIH as a student; (5) personal use; and (6) primary population served. Practitioners who perceived they were unable to bill as well as those who were unsure if they could bill for CHAIH in their clinical practice are significantly less likely to use these approaches with clients. These results further substantiate a knowledge and practice gap within the OT profession. The American Occupational Therapy Association has established that CHAIH may be used by practitioners in clinical practice and that, with supportive documentation, these therapies are classified as reimbursable OT services (AOTA, 2014; AOTA, 2017; Holistic OT, n.d.) Coinciding with previous research, these results validate that CHAIH may be underused due to inconsistencies within the OT curriculum which is translating to a lack of knowledge in clinical practice (Bradshaw 2016a; Jackman et al., 2017).

Occupational therapists working in the following settings are more likely to incorporate CHAIH into their clinical practice: home health, mental health, private practice, and school based. When compared to OT practitioners primarily working in inpatient rehabilitation (IPR), a practitioner is twice as likely to use CHAIH if they work in the schools or home health, nearly five times more likely if they work in private practice, and six times more likely if they work in a mental health setting. While continuing to evolve, OTs’ professional roots are distinct in mental health practice (Brown et al., 2019). Complementary health approaches can be used to prepare and enhance participation and engagement in meaningful, everyday occupations for people
across the lifespan which is critical to mental health, well-being, and quality of life (AOTA, 2014; Brown et al., 2019).

The primary population a practitioner serves is another significant predictor of whether they are more or less likely to integrate CHAIH with their clients. When compared to OT practitioners working primarily with adults, practitioners working with the geriatric population are less likely to use CHAIH with clients. The results also indicate that practitioners working with the pediatric population are nearly twice as likely to incorporate these practices with their clients as those working primarily with an adult population. Moreover, the number of years an OT practitioner has been practicing can also predict whether they are using CHAIH approaches. Practitioners with 21 or more years of clinical experience are significantly more likely to integrate CHAIH into their clinical practice. These results support previous research indicating that practitioners with more years of clinical experience were more likely to recommend CHAIH therapies (such as sensory-based approaches) than compared to practitioners with less than five years of experience (Thompson-Hodgetts & Magill-Evans, 2018).

Whether a practitioner was exposed to CHAIH as a student as well as if they use these approaches in their personal lives may also indicate their professional integration. The results found that OT practitioners who were not exposed as a student as well as those who do not use CHAIH in their personal lives are less likely to integrate these approaches into their clinical practice. Thompson-Hodgetts and Magill-Evans (2018) also found that mentorship (/exposure to CHAIH) predicted both increased use as well as perceived benefit of these therapies in clinical practice. Furthermore, it is reasonable to presume that personal use of CHAIH can be associated with a more positive attitude regarding these approaches. Renner and colleagues (2021) found
that OT practitioners who do not incorporate CHAIH approaches tend to have a more negative attitude toward their integration in OT practice, validating this assumption.

Of the five remaining variables which showed no significance in predicting a practitioner’s use of CHAIH in clinical practice, the most remarkable was their geographic location. Peregoy and associates (2014) found regional variation amid CHAIH practices, indicating that specific practices were being used nearly 40 percent more in the Pacific and Mountain regions. Moreover, they acknowledged a lower use of practitioner based CHAIH approaches in the East South Central, South Atlantic, and West South Central regions (Peregoy et al., 2014). One potential reason this research study shows no regional variation regarding CHAIH in OT practice may relate back to the lack of curricular inclusion in OT programs across the United States.

As Bradshaw (2016a) indicated, most educators feel inadequately prepared to teach CHAIH content and to instruct students to incorporate these approaches into their clinical practice. Moreover, previous research found that, while the majority of OT practitioners across the United States are incorporating CHAIH into their clinical practice, only 18 percent of practitioners rated themselves as “Very” or “Extremely” knowledgeable on these practices (Renner et al., 2021). This defined knowledge gap may be an indication that practitioners nationwide are ill-prepared to offer these therapies to their client base, no matter the geographic location in which they practice.

Strengths and Limitations

This research is first to produce a comprehensive database of its size regarding the use of CHAIH with clients in OT practice with responses from practitioners across the United States,
from nine OT practice settings, and with varying years of clinical experience. The results from this study create a foundation for strategizing how to close the relevant gaps in evidence-based practices and the translational research related to CHAIH, not only for OT practitioners but for various healthcare professionals. The approximate number of practitioners registered with NBCOT at the time the survey was sent out was greater than 132,900 (NBCOT, 2019). Even though this survey gathered responses from a large and wide-ranging audience, the total number of respondents (N = 4,420) only captured a three percent response rate. Therefore, it is necessary to compare participant demographics from the survey with the available data encompassing United States’ OT professionals to establish whether these results are generalizable.

The most recent and comprehensive dataset which details the OT profession’s workforce in the United States is the AOTA 2019 Workforce and Salary Survey. The findings from AOTA showed that 84 percent of OT practitioners classified themselves as white and 91 percent as female (AOTA, 2020a). Those findings coincide with this research which found that 87 percent of participants were white, and 93 percent were female. Moreover, AOTA’s survey found that 67 percent of practitioners who responded earned a master’s degree (AOTA, 2020a). Similarly, this research study found that 63 percent of respondents reported earning a master’s degree. Regarding years of clinical experience, each survey determined the following (AOTA followed by this study, respectively): two to ten years (40%; 36%), 11 to twenty years (both were 23%), and twenty or more years (both were 37%) (AOTA, 2020a).

Furthermore, the respondent’s practice setting as well as the distribution of the geographic locations correlated between each of the surveys. As it related to the practitioner’s primary practice setting, the following percentages were reported by AOTA and this research study, respectively: early intervention (both 4%), mental health (2%; 3%), schools (both 18%),
and skilled nursing facility (14%; 13%) (AOTA, 2020a). The results from the AOTA 2019 Workforce and Salary Survey also found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (8%) (AOTA, 2020a). Comparably, this study found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (7%).

As demonstrated, the results from AOTA’s 2019 Workforce and Salary survey largely coincide with the findings from this research study. While this particular research only captured a three percent response rate overall, based on the comparisons above, these results are sufficient and can be generalized to the OT profession across the United States. Having determined the vast similarities between AOTA’s survey results and this study’s results, the broad and inclusive survey responses are considered a strength of this research.

Limitations of this study include the recoding of the data prior to performing the regression analysis. Due to insufficient sample sizes from categories within the recoded variables (such as race), the adjustments were justified; however, although they had small sample sizes, some of the specific categories may have come out as significant predictors. For instance, race was recoded as White and Non-White due to insufficient sample sizes for the remaining nine categories (Hispanic/Latino, Not Hispanic/Latino, American Indian/Alaskan Native, Asian, Black/African American, Native Hawaiian/other Pacific Islander, multiple races, other, and prefer not to say). It is possible that some of the recoded categories could have been significant predictors of CHAIH use would we have had the granularity to represent them in the data.

Another limitation of this study relates to the possibility of response bias. Practitioners with skills in and positive attitudes toward CHAIH or laterally, those with negative attitudes
toward these approaches, may have been more likely to respond to the survey. Additionally, because the online survey was self-administered, it is possible that the answers provided were not an accurate representation of the respondent’s clinical practices and the possibility of social desirability bias should be considered. Finally, the broad and inconsistent definition of CHAIH as it relates to the OT scope of practice could have impacted coherence between participants who completed the survey. Even though a thorough definition of CHAIH with a list of examples was offered on the survey to provide clarification and consistency, respondents may not have read or understood that section of the survey.

Implications for OT Practice

The results of this study have the following implications for OT practice:

- Occupational therapists are significantly less likely to incorporate CHAIH approaches into their clinical practice when considering their ability to bill for these services and insurance reimbursement. Many Americans use CHAIH; however, their health insurance coverage may impact their decision (as well as their healthcare provider’s) to incorporate these practices (NCCIH, 2016b). These results support the urgent need to address this gap in OT practice. Even with AOTA establishing that CHAIH may be used by practitioners in clinical practice and that, with supportive documentation, these therapies are classified as reimbursable OT services, this research highlights a critical knowledge gap which significantly impacts a practitioner’s decision to incorporate CHAIH with clients in their professional practice (AOTA, 2014; AOTA, 2017).
• This paper substantiates previous research which emphasizes the inconsistencies related to CHAIH in OT curriculum across the United States. With the knowledge and practice gaps clearly defined, expanding the awareness of CHAIH among practicing clinicians is critical to improving professional consistency. Perceptions of CHAIH develop early in education and unfamiliarity with these practices may be associated with an OT practitioner’s inability to effectively translate these approaches into their clinical practice (Jackman et al., 2017).

• This research offers a foundation to help the OT profession tailor their evidence-based practice (EBP) research more effectively to support professional consistency and the translation of EBP standards. With the results verifying the most common practice settings in which these approaches are being used as well as the primary patient populations, practitioners ought to focus their research to support the safe and consistent professional use here before expanding across settings and populations.

Conclusion

With the use of CHAIH therapies continuing to expand among adults and children in the United States, OT practitioners must feel capable and competent when offering safe, research-driven interventions to support this notable and persisting healthcare trend (NCCIH, 2018b). More than just having a better understanding of the incidence of CHAIH use amid practitioners, determining which variables suggest a practitioner is more likely to integrate them into their clinical practice could help to prioritize prospective evidence based and translational research supporting the safe and consistent professional integration of these approaches. Occupational therapists must stay current in the evolving healthcare system to effectively contribute to the growing body of evidence-based research related to the use of CHAIH with clients.
References


CHAPTER IV
BENEFITS AND BARRIERS CONCERNING THE INTEGRATION OF CHAIH APPROACHES IN OCCUPATIONAL THERAPY PRACTICE: A PRACTITIONER’S PERSPECTIVE

Introduction

While the term complementary health approaches and integrative health (CHAIH) can be quite pervasive, the definition continues to adapt as the research supporting its use continues to emerge (American Occupational Therapy Association [AOTA], 2011). Outlining each part of this phrase independently offers a more distinct introduction to the meaning of CHAIH. Complementary health approaches are more unconventional, non-mainstream practices used to complement traditional Western medicine practices (National Center for Complementary and Integrative Health [NCCIH], 2018a). Integrative health incorporates conventional and complementary approaches into treatment together, emphasizing an inclusive approach (NCCIH, 2018a). As this definition continues to transform in its application to clinical practice, it is essential to note that CHAIH approaches incorporate a holistic and individualized focus with clients. This client-centered emphasis includes the mental, emotional, functional, spiritual, social, and community aspects relating to the “whole person” (NCCIH, 2018a).

The characterization of occupational therapy (OT), as outlined in the OT practice framework, aligns with the National Institutes of Health's (NIH) definition of integrative health as each of these definitions accentuate the importance of adopting a holistic, person-centered approach when managing one’s health and wellness (AOTA, 2014; NCCIH, 2018a). The OT practice framework and the NIH definition also focus on the importance of maintaining an inclusive focus when treating the whole person, considering all facets of one’s health (i.e.,
mental, emotional, functional, spiritual, social, and community) (AOTA, 2014; NCCIH, 2018a). Research indicates that the application of an integrative approach for managing general health and wellness has grown within various health care settings (e.g., hospitals, hospices, skilled nursing facilities) across the United States for over 15 years (Elite Healthcare, 2016). The National Center for Complementary and Integrative Health (NCCIH) has identified a strategic plan in complementary and integrative health research with the intent to bolster a comprehensive understanding of the efficacy associated with these practices with backing from progressive scientific evidence (NCCIH, 2016).

Complementary health approaches and integrative health practices are often incorporated as preventative measures or used to stabilize symptoms related to clinical conditions. These practices can empower people to enhance their quality of life and reinforce a personal sense of well-being (AOTA, 2017). Historically, the United States’ healthcare system has aimed to address disease and illness over promoting health or preventative services (Elite Healthcare, 2016). Even so, the number of adults and children using CHAIH approaches has considerably increased over the years (NCCIH, 2018b). For instance, the use of meditation (considered a CHAIH practice) increased more than threefold from 4.1 percent in 2012 to 14.2 percent in 2017 (NCCIH, 2018c). With holism weaved into the diverse scope of practice along with the profession's inherent creative tendencies, there is an opportunity for OT practitioners to be at the forefront of this noteworthy shift in the United States’ healthcare system (Schmid, 2004).

The American Occupational Therapy Association (AOTA) has established that CHAIH practices may be used by practitioners to "prepare and enhance participation and engagement in occupation by persons, groups, and populations" (AOTA, 2014). The profession's philosophical background and client-centered approach to practice also substantiate the use of CHAIH (AOTA,
2017). Notably, Health and Wellness has also been identified as one of six “key practice areas” for OT practitioners (AOTA, 2020b). Complementary health approaches and integrative health practices can be integrated into OT practice in many ways, including as preparatory methods and tasks (e.g., Qigong, deep breathing, and guided imagery for stress reduction before treatment session intervention or activities of daily living [ADLs]), to support occupations (e.g., mindfulness or meditation for pain reduction), and with various activities (e.g., Yoga or Tai Chi for standing balance during occupations) (AOTA, 2017).

The appointed agency for OT education, the Accreditation Council for Occupational Therapy Education (ACOTE), is recognized by both the United States Department of Education (USDE) and the Council for Higher Education Accreditation (CHEA) (Accreditation Council for Occupational Therapy Education [ACOTE], n.d.). While ACOTE, a part of AOTA, does not specifically detail the incorporation of CHAIH into OT education, various parts of the 2018 Standards and Interpretive Guide justify their inclusion. The guidelines do explicitly establish that OT programs must promote “the formulation and implementation of the therapeutic intervention plan to facilitate occupational performance and participation must be client centered and culturally relevant,” (ACOTE, 2020). This statement, as an example, endorses AOTA’s position that CHAIH is a client-centered approach which may enhance participation in occupation by persons, groups, and populations (AOTA, 2014).

Moreover, OT practitioners can bill federal and private insurances (e.g., Medicare, Medicaid, Blue Cross and Blue Shield, etc.) for the provision of these CHAIH therapies (Holistic OT, n.d.). Providing documentation to support the specific approach being used, the changes it produced for the client, and how it enhanced their individualized occupation(s), CHAIH therapies are classified as reimbursable OT services (Holistic OT, n.d.; AOTA, 2017). While
various members of the interdisciplinary team can provide CHAIH therapies (e.g., physical therapists, speech and language pathologists, nurses), OT practitioners are uniquely suited to do so in an inclusive and therapeutic manner. Occupational therapists are commonly recognized for their holistic approach to treatment, focusing on a client’s mind, body, and spirit as well as environmental aspects (Elite Healthcare, 2016).

**Background and Significance**

The 2017 National Health Interview Survey (NHIS) found substantial increases in the use of mind body practices (classified as CHAIH) among United States’ adults and children when compared to the data fielded from the 2012 survey (NCCIH, 2018b). This complementary health questionnaire was developed by the NCCIH, part of the NIH, and by the Centers for Disease Control and Prevention’s (CDC) National Center for Health Statistics (NCHS) (NCCIH, 2018c). A recent study published a report from the NHIS from years 2002, 2007, 2012, and 2017. The authors found that that the use of yoga, tai-chi, and Qigong (YTQ) (categorized as CHAIH therapies) have also significantly increased from 5.8 percent in 2002 to 14.5 percent in 2017 ($p \leq .001$) among United States’ adults within the past 15 years for all ages, racial groups, and genders (Wang et al., 2019). Furthermore, Wang and colleagues (2019) detail that its use is expected to continue to increase.

With this distinguished trend persisting across the United States, many OT educators have started incorporating CHAIH content into their teaching (Elite Healthcare, 2016). Bradshaw (2016a) used an exploratory survey to examine the extent to which CHAIH approaches were included in OT curricula in the United States. The data revealed that 79 percent of survey respondents ($N = 302$) reported curricular inclusion of these approaches; however, most educators felt inadequately prepared to teach general CHAIH content and to instruct students to
incorporate these approaches into OT practice (Bradshaw, 2016a). These results correspond with Bradshaw's (2016b) examination that, without sufficient support or professional consistency, this may have a detrimental outcome for practitioners when engaging with this enduring movement in healthcare. Because ACOTE is not explicit in including CHAIH in their education standards, OT programs throughout the United States are not consistently integrating them into the curriculum, potentially being a source of this issue.

To effectively contribute to the expanding body of scientific research surrounding these CHAIH practices, OT educators must stay current in the evolving healthcare system. Jackman et al. (2017) aimed to explore healthcare professional trainees’ (among which included OT practitioners) perceptions of CHAIH. While the predominant attitude was supportive of CHAIH, numerous participants expressed that these practices may be underused due to a lack of knowledge or a negative preconception about them (Jackman et al., 2017). These results substantiate that perceptions of CHAIH develop early in education and that unfamiliarity with these practices may be associated with unwarranted fear about them (Jackman et al., 2017). This research also supports that consistency in OT curricula is necessary in ensuring that student understanding of CHAIH is informed and can be safely translated into clinical practice (Jackman et al., 2017).

Beyond curricular inclusion, research suggests that OT practitioners who are more likely to implement CHAIH approaches with clients may be influenced by their years of clinical experience and mentorship (Thompson-Hodgetts & Magill-Evans, 2018). Thompson-Hodgetts and Magill-Evans (2018) explored OT practitioner perceptions related to their use of sensory-based interventions (classified as CHAIH) with children diagnosed with autism spectrum disorder (ASD). Their results determined that newer therapists were less likely to recommend
these approaches when compared to more established practitioners and that mentorship predicted both use and perceived benefit of these interventions (Thompson-Hodgetts & Magill-Evans, 2018).

A key consideration that lacks magnitude in the available literature today relates to the OT practitioner’s views of CHAIH therapies in relation to their clinical practice and the translation of evidence-based research. Van Puymbroeck and colleagues (2015) examined the perceptions of key agency personnel (among which included two OT representatives) on the feasibility and utility of yoga therapy (classified as a CHAIH practice) being implemented in a rehabilitation setting. The therapists described feeling that the yoga intervention was “holistic” and addressed the physical, social, and mental needs of their patients (Van Puymbroeck et al., 2015). Their perceptions also included that yoga therapy provided skills that were helpful in improving other aspects of their patient’s recovery and overall, they identified that adding yoga to the rehabilitation program was a positive and non-intrusive experience (Van Puymbroeck et al., 2015).

A prior research study explored which factors and characteristics were significant predictors of whether an OT practitioner is integrating CHAIH approaches into their clinical practice. Notably, no significant associations were found as it related to the practitioner’s geographic location in which they practiced (Renner et al., 2021b). Peregoy and associates (2014) analyzed data from the NHIS and found regional differences across a variety of CHAIH practices in the United States; however, Renner and colleague’s (2021b) results did not correspond when exclusively focusing on the use of CHAIH in OT practice. One significant predictor variable that was associated with a practitioner integrating CHAIH into their clinical practice was the primary setting in which they practiced (Renner et al., 2021b). Renner and
colleagues (2021b) found that OT practitioners were more likely to use CHAIH if they worked in home health, mental health, private practice, and school-based settings.

Purpose of the Study

While the scientific evidence supporting the value and effectiveness of CHAIH continues to expand, the gaps in the literature make it difficult to determine how feasible the practitioners perceive the execution of these therapies to be with clients in their professional practice. With the increasing use of these therapies among adults and children in the United States, OT practitioners ought to be able to offer safe, research-driven treatments that support this persisting health care trend (NCCIH, 2018b). It remains critical to be mindful of the efficacy of these therapies while considering the translation of evidence-based approaches into OT practice. Understanding the practitioner’s perceptions around the integration of CHAIH practices within the OT profession can help to prioritize future research supporting the safe and consistent professional integration of CHAIH therapies.

This research explores three primary research questions including: What do OT practitioners in the United States perceive to be (1) the benefits and (2) the barriers to integrating CHAIH approaches in their clinical practice? Moreover, taking into consideration the results from previous research which focused on the factors and characteristics that are significant predictors of whether a practitioner is integrating CHAIH into their clinical practice, a second tier of this particular study’s analysis will focus on (3) are there differences amid the OT practitioner’s perspectives on these benefits and/or barriers based on the primary setting they practice in?
Methods

Study Design

An exploratory, cross-sectional survey design was used to conduct this research study which was approved by the affiliated University's human subjects institutional review board (HSIRB). The National Board for Certification in Occupational Therapy (NBCOT), the regulatory board that certifies OT practitioners across the United States, sent an email to all registered practitioners supporting the research being conducted. During the research period, NBCOT reported that there were greater than 132,900 registered practitioners in the United States (NBCOT, 2019). The email sent to participants included a thorough description of the research, informed consent, and a direct link to participate in the study. The inclusionary criteria for the study population detailed: (1) Practitioner must be currently registered with NBCOT (OTR); and (2) must hold a position involving direct patient care (or have not had a break from direct patient care lasting greater than six months over the past one year).

Data Collection

After conducting a detailed literature review and consultations with content experts, a 17-question online survey was developed. The survey included 16 close-ended questions and one open-ended question. Data was collected using SurveyMonkey©. The survey provided a comprehensive definition of CHAIH and a wide-ranging list of examples to offer clarification and consistency for each participant completing it. Three professional colleagues (NBCOT registered practitioners) pilot tested the survey prior to it being sent out. Adjustments to the survey were made based on their input which resulted in the final version of the survey that was used. The survey instrument is included in Appendix B.
Data Analysis

The survey was open from November 6th, 2019, until November 27th, 2019. A database which included the responses from all practitioners registered with NBCOT who completed the survey was generated (N = 4,420). Of the 17 questions included in the survey, one is being analyzed in this study. Survey question nine, formatted with an open-ended response, asked: what do you believe are the benefits and/or barriers, if any, to using CHAIH therapies in clinical practice as an occupational therapist? Those results will be analyzed in this paper.

A qualitative thematic content analysis approach, as described by Braun and Clarke (2006), will be used on the data that was collected. Thematic content analysis is a method for identifying, analyzing, and reporting data patterns or themes, to assist with organizing and describing the data in “rich” detail (Braun & Clarke, 2006). An inductive process will be implemented to allow themes to emerge from the data. This specific form of thematic analysis is data-driven; an inductive analysis generates themes that are not driven by a researcher’s theoretical interest in the topic and minimizes the researcher’s analytic preconceptions (Braun & Clarke, 2006). This six-step process outlined by Braun and Clarke (2006) includes: (1) familiarizing yourself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report.

The practitioners were organized by the primary practice setting in which they reported working in when completing the survey. The ten survey options included: School-Based, Early Intervention, Home Health, Mental Health, Outpatient, Skilled Nursing Facility, Inpatient Rehabilitation Hospital, Acute Care, Private Practice, and Other. A decision was made to remove the survey option “Other” from the analysis due to the number of duplicate and blank responses as well as the broadness of specialty practice settings with insufficient sample sizes (i.e., yoga
Once the data was separated by primary practice setting, the practitioners were then categorized into the second tier: whether they were using CHAIH therapies with clients in their professional practice. After completing the two-tiered organization, a sub-sample from each of these nine designated OT practice settings, separated by “use” and “non-use” (N= 18), were examined using the thematic content analysis as described above.

While there are no clear guidelines for the specific number of samples required to conduct a content analysis, it is suggested that when the addition of new information is no longer adding anything substantial to the data-driven themes, to terminate the analysis (Braun & Clarke, 2006). A decision was made to begin with the random selection of 15 responses from each category (N = 270). This randomization process was completed online by using a random integer generator site (https://www.random.org/integers/). While most categories had a total number of responses greater than 100, the practitioners working in mental health that did not use CHAIH in their clinical practice only had a total of 11 responses; therefore, each of these responses were used in the analysis. This was the only category of the 18 with less than 15 responses where random selection was unable to be used.

Once the randomization process was completed for this qualitative data analysis, the six-step process as outlined by Braun and Clarke (2006) was initiated. After becoming familiar with the data (1) and generating initial codes (2), the search for themes (3) was initiated. When the initial themes were derived from the thematic content analysis, they were reviewed (4) and defined (5). Steps four and five were repeated a second time to ensure a comprehensive examination of the data was accomplished and the themes were categorized appropriately. Finally, the results from each category were compared (N = 266) to examine whether there were
any meaningful differences within the themes when considering the practitioner’s perspectives on the benefits/barriers of the integration of CHAIH approaches in their clinical practice.

Results

A total of 4,420 OT practitioners across the United States who are registered with NBCOT completed this survey. Among the participants who completed the survey, 90 percent (N = 3,971) responded to question nine, the open-ended question being analyzed in this study. Once the data for question nine was reviewed and cleaned (e.g., responses such a “N/A”, “none”, etc. were removed), the number of responses totaled 3,740. This survey captured responses from practitioners working across each of the 50 United States, working with all age groups from neonatal to geriatrics, and representing nine designated OT practice settings (e.g., school-based, mental health, outpatient, skilled nursing, acute care, etc.). The inclusion of rural, urban, and suburban communities, a variety of educational degrees, wide-ranging years of clinical experience, and responses including all gender and ethnic groups are also reflected in these extensive survey results.

Perceived Benefits of Using CHAIH in OT Practice

There were five major themes that were derived from the data that reflected the benefits of incorporating CHAIH approaches into OT practice from a practitioner’s perspective. These themes included: (1) Holistic/Client-Centered (100%); (2) Improve Mental Health (89%); (3) Access (61%); (4) Pain Management/Improved Physical Health (61%); and (5) Adds to “OT Toolbox” (100%). The numbers following each of the five themes indicate the percentage of the designated categories (N = 18) which revealed this specific theme when reviewing the data. While all five themes were established by more than half the categories, “Holistic/Client-Centered” and “Adds to OT Toolbox” were both designated as benefits to using CHAIH in OT
practice by all practice settings (N = 9), whether the practitioner was incorporating these approaches in their clinical practice or not. Table 1 depicts the themes as it relates to the benefits of integrating CHAIH in OT practice per the designated practice settings. Below, each of these themes are discussed in more detail including some of the practitioner’s responses from the open-ended survey question.

Table 4: Benefits of CHAIH in OT Practice: Themes per Practice Setting

<table>
<thead>
<tr>
<th>THEME: BENEFITS</th>
<th>Acute Care</th>
<th>E.I.*</th>
<th>Home Health</th>
<th>Inpatient Rehab</th>
<th>Mental Health</th>
<th>Outpatient</th>
<th>Private Practice</th>
<th>School Based</th>
<th>Skilled Nursing</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holistic/Client-Centered</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>100%</td>
</tr>
<tr>
<td>Improved Mental Health</td>
<td>N</td>
<td>Y/N</td>
<td>Y</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>89%</td>
</tr>
<tr>
<td>Access</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>---</td>
<td>Y</td>
<td>N</td>
<td>Y/N</td>
<td>61%</td>
</tr>
<tr>
<td>Pain Management/Improved Physical Health</td>
<td>N</td>
<td>---</td>
<td>Y</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y</td>
<td>Y</td>
<td>61%</td>
</tr>
<tr>
<td>Adds to “OT Toolbox”</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table Key:
Y = Practitioners using CHAIH
N = Practitioners NOT using CHAIH

Theme One: Holistic/Client-Centered

This theme was represented by 100 percent of respondents from each of the nine practice settings, whether the practitioners were using CHAIH in their clinical practice or not.

Practitioner’s perspectives included that CHAIH approaches were a perceived benefit because they offered a more holistic, individualized, and client-centered focus to clinical practice. For example, some of the specific responses detailed:

- CHAIH is a client-centered approach allowing OTRs to create treatment plans based off the individual needs of the patients.
- Holistically promotes self-care and overall health and well-being.

- Promotes holistic healing which is an essential benefit to mind, body, and spirit.

- These practices get back to the holistic nature of OT and better address the whole person’s needs.

Theme Two: Improve Mental Health

Improved mental health was a theme described by the majority of respondents (89%), whether or not they were incorporating CHAIH in their clinical practice. Categorized within this theme, the practitioners included that CHAIH therapies helped to improve a patient’s regulation, awareness, and attention (general and to task). Some of the OT practitioner’s perspectives on the benefit of these approaches improving mental health included:

- CHAIH can address some underlying mental health issues which can be a barrier that is difficult to address with traditional treatment approaches.

- Benefits to improving mental health such as trauma-informed care.

- A lot of these therapies are integral to finding mental health and wellness.

- Increased access to self-regulation and coping skills and facilitates relaxation and decreased anxiety.

Theme Three: Access

Access was described by more than half of practitioners within each of the nine practice settings, whether they used CHAIH with clients or not. Within this theme, respondents described CHAIH as easy to incorporate (non-restrictive) and easy for patients and families to carry-over or self-administer once therapy is discontinued. Practitioners also noted that these practices are
generally inexpensive and can be modified for any patient, no matter their level of function. Examples of practitioner’s perspectives on the benefit of CHAIH as it relates to access include:

- Many of these therapies are easy to build-in to therapy (such are breathwork with gross motor movement) and to use as preparatory activities.

- Once patients/families are trained and educated on how to implement them, they can be simple and effective to carry-over without depending on clinicians.

- CHAIH can continue at home after therapy and become a life skill.

- These practices are generally inexpensive and do not require a ton of time and space to use with patients.

Theme Four: Pain Management/Improved Physical Health

Pain management and improved physical health was another theme described by more than half of the respondents within the nine practice settings. Also categorized within this theme is decreased need for medications to manage pain. Practitioners detailed that CHAIH therapies are “harm-free” and have little to no negative side effects that could further inhibit a patient’s progress. Some of the practitioner’s responses included:

- Relaxation of muscles, stretching of muscles, reducing “guarding” for better body mechanics, strengthening and balance are a few benefits that can decrease a patient’s pain and improve their overall physical health.

- Highly beneficial to provide pain relief without the side effects from medications.

- Practices like mindfulness assist with pain management which have physical benefits too.
- When used correctly/consistently, they can be a healthy alternative to using opioids for pain management.

Theme Five: Adds to “OT Toolbox.”

This theme was represented by 100 percent of respondents from each of the nine practice settings, whether the practitioners were using CHAIH in their clinical practice or not. Practitioner’s perspectives included that these approaches were a perceived benefit because they offered more options that can be used by a clinician to meet their client’s unique needs and therapy goals. For example, some of the specific responses detailed:

- Expands our therapy toolbox for treatment beyond limited traditional treatments while still in our scope of practice.

- CHAIH provides OT with a greater market to expand our practice with increased “toolbox”.

- The more options and resources we have for our patients, the higher chance of success.

  CHAIH gives us more options.

- Not only good for physical health but they can be used as an additional tool in our toolbox for individuals needing support to manage emotions, trauma, pain, etc.

Perceived Barriers of Using CHAIH in OT Practice

As it related to the practitioner’s perspectives of the barriers of incorporating CHAIH approaches into OT practice, there were also five major themes. These themes included: (1) Lack of Knowledge/Formal Education (100%); (2) Reimbursement/Billing Issues (100%); (3) Access (83%); (4) Lack of evidence-based practice (EBP)/Research (89%); and (5) Acceptance/Patient Buy-In (100%). As noted above, the numbers following each of the five themes indicate the
percentage of the designated categories (N = 18) which produced this specific theme when reviewing the data. Whether or not the respondent was using CHAIH approaches in their clinical practice, 100 percent of the practice settings (N = 9) distinguished “Lack of Knowledge/Formal Education,” “Reimbursement/Billing Issues,” and “Acceptance/Patient Buy-In” as barriers to integrating CHAIH into OT practice. Table 2 depicts the themes as it relates to the barriers of integrating CHAIH in OT practice per the designated practice settings. Below, each of these themes are discussed in more detail including some of the practitioner’s responses from the open-ended survey question.

Table 5: Barriers of CHAIH in OT Practice: Themes per Practice Setting

<table>
<thead>
<tr>
<th>THEME: BARRIERS</th>
<th>Acute Care</th>
<th>E.I.*</th>
<th>Home Health</th>
<th>Inpatient Rehab</th>
<th>Mental Health</th>
<th>Outpatient</th>
<th>Private Practice</th>
<th>School Based</th>
<th>Skilled Nursing</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Knowledge/Education</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>100%</td>
</tr>
<tr>
<td>Reimbursement/Billing Issues</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>100%</td>
</tr>
<tr>
<td>Access</td>
<td>Y/N</td>
<td>Y</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>83%</td>
</tr>
<tr>
<td>Lack of EBP/Research</td>
<td>Y/N</td>
<td>Y</td>
<td>Y/N</td>
<td>N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>89%</td>
</tr>
<tr>
<td>Acceptance/Patient Buy-In</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>100%</td>
</tr>
</tbody>
</table>

*E.I. stands for Early Intervention

Table Key:
Y = Practitioners using CHAIH
N = Practitioners NOT using CHAIH

Theme One: Lack of Knowledge/Formal Education

Lack of knowledge and formal education was represented by 100 percent of respondents from each of the nine practice settings, whether the practitioners were using CHAIH in their clinical practice or not. Categorized within this theme, the respondents included that CHAIH therapies are not prioritized in the OT education standards, translating to the need for additional training as a practitioner. Moreover, the lack of formal education related to these approaches...
trends as a general lack of knowledge of their use in clinical practice. Some of the specific responses included:

- **Limited knowledge on this topic which impacts my ability to document effectively when I am using CHAIH with my patients.**

- **Lack of knowledge and understanding of how they can be beneficial because we don’t learn about these in OT school and finding additional training can be difficult.**

- **The lack of knowledge or teaching on the subject during one's OT education is a huge barrier and leads to a misunderstanding of their effectiveness as therapeutic interventions.**

- **Not having the curriculum in grad school leads to poor clinical reasoning when applying these therapies to OT framework so the lack of formal education is a barrier.**

**Theme Two: Reimbursement/Billing Issues**

This theme was also represented by 100 percent of respondents from each of the nine practice settings, whether they used CHAIH with clients or not. Practitioner’s perspectives included that these approaches were a perceived barrier to OT practice due to difficulty with billing and getting reimbursed for providing these therapies. Examples of responses related to this theme include:

- **Difficult to structure sessions that included these supports (even just yoga and sensory therapies) as insurance companies (especially state-funded programs) often deny claims.**

- **Insurance regulations drive our treatments these days, so if something is not reimbursable (even if it benefits the patient), it probably won’t make it into regular treatments.**
- No specific billing codes to be used for insurance reimbursement so the unclear nature of reimbursement is a huge barrier.

- Reimbursement being largest barrier; I’m reluctant to try anything that’s not clearly reimbursable by Medicare for fear of denials in my practice.

Theme Three: Access

Access was described by more than 80 percent of OT practitioners within each of the nine practice settings, whether or not the practitioners were using CHAIH in their clinical practice. Within this theme, respondents described CHAIH as a barrier due to time-restraints, including productivity standards. Practitioners also noted that these practices can be difficult to implement unless the proper space and equipment is available. Examples of practitioner’s perspectives on the barrier of CHAIH as it relates to access include:

- In the acute care setting, we often don’t have enough time with the patients or the ability to follow up and space can be limited so CHAIH can be difficult.

- Takes too much time in the inpatient setting where productivity is often emphasized more than quality of therapy.

- I work in private practice and I think a barrier is that billed time is too short for all procedures that are beneficial.

- There is a push in skilled nursing facilities for group treatment now which means time constraints during treatment sessions and less time for hands on approaches.
Theme Four: Lack of EBP/Research

This theme was described by the majority of respondents (89%), whether or not they were incorporating CHAIH in their clinical practice. The respondent’s perceptions included that many of these approaches lack the research needed to support evidence-based practices with clients which is a barrier to implementation. Examples of responses related to this theme include:

- **Concerns include lack of evidence for use.** While some therapies such as MFR, Pilates, and cranial sacral therapy have the evidence supporting their use, there’s not a ton of research on how these translate specifically to OT practice.

- **Very limited evidence demonstrating positive impact in therapy outcomes or application that prove efficacy and validity of use in rehabilitation.**

- **Most do not have scientifically acceptable evidence of being effective so they can be perceived as less effective than more mainstream approaches.**

- **I think the barriers are a lack of evidence and education on how CHAIH can definitively help specific patient/client populations. We need more science for CHAIH in OT.**

Theme Five: Acceptance/Patient Buy-In

Acceptance of CHAIH practices and patient buy-in was represented by 100 percent of respondents from each of the nine practice settings, whether the practitioners were using CHAIH in their clinical practice or not. Categorized within this theme, the respondents included that CHAIH therapies are not always widely accepted by other healthcare providers or administration. Moreover, due to the lack of acceptance by the "traditional" medical field, patient buy-in can be a barrier to implementation. Some of the specific responses included:
Because these practices aren’t widely used, acceptance and open-mindedness by patients and their families can be a barrier.

I work in pediatrics so getting parents to buy in is biggest barrier.

It's not something elderly patients are familiar with and they are rarely interested in different/new approaches. I would say the majority don't see the benefits vs strict exercise.

I work in home health and I believe that client and family acceptance and corporate support can be hard to get sometimes because they don’t understand the therapies.

Discussion

Using the practitioner’s responses from the open-ended question on the survey, the thematic content analysis found five major themes related to the benefits as well as the barriers of integrating CHAIH with clients in OT practice. The five themes which describe the benefits of using these approaches in OT practice include: (1) Holistic/Client-Centered, (2) Improve Mental Health, (3) Access, (4) Pain Management/Improved Physical Health, and (5) Adds to “OT Toolbox.” The five themes describing the barriers to implementing CHAIH in OT practice include: (1) Lack of Knowledge/Formal Education, (2) Reimbursement/Billing Issues, (3) Access, (4) Lack of EBP/Research, and (5) Acceptance/Patient Buy-In.

Two benefits that were perceived by practitioners were that these practices are holistic and client-centered and that they improve mental health. These themes coincide with the NCCIH (2018a) definition that CHAIH practices are holistic and individualized in nature and emphasize the mental, emotional, functional, spiritual, social, and community aspects relating to the “whole person”. Moreover, OT’s roots emerged from mental health practice and today’s characterization of OT highlights the importance of incorporating holistic, person-centered approaches when
managing health and wellness (Brown et al., 2019; AOTA, 2014). Van Puymbroeck and colleagues (2015) also found that therapists described feeling that CHAIH practices (i.e., yoga) were holistic and addressed the physical, social, and mental needs of their patients.

The third theme derived from the analysis that related to a benefit of incorporating CHAIH in OT practice was access. Respondents detailed that these approaches are easy to build-in to therapy and do not require substantial time or space to use with patients. These results also substantiate Van Puymbroeck and associates (2015) study which found that therapists identified adding a CHAIH practice (i.e., yoga) to their rehabilitation program was a non-intrusive experience. Another benefit that arose from the content analysis and supports previous research is that CHAIH can help with pain management and improve physical health. Research suggests that individuals who received CHAIH therapies throughout their rehabilitation for a traumatic spinal cord injury (SCI) showed more significant decreases in pain severity from the six-month to 12-month follow-up assessments than the control group (Taylor et al., 2018).

The fifth theme derived as a benefit of using CHAIH in OT practice was that it adds to the OT toolbox. Respondents explained that the use of these approaches can expand our therapeutic toolbox beyond the limitations of traditional treatments while still being within in our scope of practice. Moreover, it was detailed that the more options and resources we have for our patients, the more likely they are to improve holistically. These results validate Hardison and Roll’s (2016) findings that integrating mindfulness interventions (a CHAIH practice) led to improvements in adaptation to illness or disability (i.e., self-efficacy for disease management, increased quality of life, acceptance of pain symptoms), all well-defined within the OT scope of practice.
Two barriers which were derived from the content analysis included a lack of knowledge relating to CHAIH and difficulty with getting reimbursed for these practices. A previous research study defined this knowledge gap, finding that less than 18 percent of practitioners self-rated their level of knowledge of CHAIH therapies as "Very" or "Extremely" knowledgeable (Renner et al., 2021a). This theme validates the knowledge gap discussed in the literature regarding the inadequate preparation of OT students entering a healthcare system that is progressively integrating these CHAIH approaches (Bradshaw, 2016b; Morris & Jenkins, 2018). Furthermore, AOTA has established that, with supportive documentation, CHAIH therapies are classified as reimbursable OT services (AOTA, 2017); yet issues with billing and reimbursement appeared as a barrier. This theme also highlights Renner and colleagues’ (2021b) findings indicating that this knowledge gap is significantly impacting a practitioner’s decision to incorporate CHAIH with clients in their professional practice.

The lack of EBP and research as it relates to these therapies in OT practice was another barrier determined in the results. Although the supporting evidence for the effectiveness of CHAIH continues to grow, substantial gaps in the literature make it difficult to determine if the efficacy can be translated to OT practice as well as throughout client populations. Previous research set out to establish a foundation for strategizing how to close the relevant gaps in EBP and the translational research related to CHAIH to help the OT profession tailor their standards more effectively (Renner et al., 2021a). The fifth theme described in the content analysis was a general lack of acceptance. Bradshaw (2016b) detailed that addressing the knowledge gap is vital to positively impacting a change in attitudes toward these CHAIH therapies. If practitioners can demonstrate an increase in knowledge and professional consistency regarding CHAIH practices and as EBPs continue to expand, the profession will be more prepared to educate other
healthcare providers, patients, and families on the benefits of these therapies as they relate to OT practice.

Strengths and Limitations

This is the first study to produce a comprehensive database of its size related to the use of CHAIH in clinical practice which includes responses from OT practitioners registered with NBCOT from nine OT practice settings, working across patient populations, and with varying years of clinical experience. The results from this research set forth to establish a foundation for strategizing how to close the notable gaps in the translation research and evidence based CHAIH practices that drive our healthcare system. At the time this survey went out, the estimated number of practitioners registered with NBCOT was greater than 132,900 (NBCOT, 2019). This survey obtained responses from a broad and inclusive audience; however, the total number of respondents (N = 4,420) secured a response rate of just three percent. To determine whether these results can be generalized to the OT profession across the United States, it is essential to compare the participant demographics with the available data reflecting the field.

The most recent and exhaustive dataset which describes the United States’ OT profession workforce is the AOTA 2019 Workforce and Salary Survey. The results from the AOTA survey found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (8%) (AOTA, 2020a). Likewise, this research found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (7%). The AOTA survey results also relate to this study’s results regarding practice setting. The following percentages are reported by AOTA and this study, respectively: early intervention (both were 4%), mental health (2%; 3%), schools (both were 18%), and skilled nursing facility (14%; 13%) (AOTA, 2020a).
The AOTA 2019 Workforce and Salary Survey discovered that 91 percent of OT practitioners categorized themselves as female and 84 percent as white (AOTA, 2020a). Those results resemble this research which found that 93 percent of respondents were female, and 87 percent were white. The AOTA survey also detailed that 67 percent of OT respondents earned a master’s degree while this research study found that 63 percent of respondents similarly reported earning a master’s degree (AOTA, 2020a). Years of clinical experience noted for each survey included (AOTA followed by this study, respectively): two to ten years (40%; 36%), 11 to twenty years (both were 23%), and twenty or more years (both were 37%) (AOTA, 2020a).

Overall, the results from the AOTA 2019 Workforce and Salary Survey widely correspond with the results found in this research study. This could be an indication that, while this research only captured a three percent response rate, the results are adequate and making a generalization to the United States’ OT profession is justified. After confirming the similarities with the AOTA 2019 Workforce and Salary Survey results, the comprehensive survey responses are considered a strength of this research.

A limitation of qualitative research is its subjectivity and inability to replicate. When completing an open-ended content analysis, the results will be based more on the researcher’s judgement rather than objective results. The reviewers of the data have extensive knowledge as it relates to CHAIH approaches in OT practice. It is important to consider the possibility of reviewer bias when themes were discovered and defined. Another limitation of the study includes the possibility of response bias. While the sample size is satisfactory for this research, a potential bias is that those with skills in and positive attitudes toward CHAIH approaches and laterally, those with negative perceptions, may have been more likely to respond to the survey.
Additionally, because this survey was self-administered online, responses may not be an authentic description of the practitioner’s standard clinical practices; therefore, the possibility of social desirability bias should also be considered. Moreover, CHAIH is defined broadly and inconsistently as it relates to the OT scope of practice at this time. This could have impacted consistency between participants completing the survey. Even though a comprehensive definition of this term was offered along with a clear list of examples to provide clarification and uniformity between respondents, some may not have read or understood that section of the survey.

Implications for OT Practice

The results of this study have the following implications for OT practice:

- These results support previous research validating the inconsistencies regarding the inclusion of CHAIH in OT curriculum standards. To guarantee professional consistency around the integration of CHAIH throughout United States’ OT programs, ACOTE should revise the educational standards to clearly define these approaches in OT education to ensure that well-rounded practitioners enter the field in a healthcare system that is increasingly incorporating CHAIH practices.

- This research exemplifies that, even though AOTA has established that CHAIH therapies may be used by practitioners in clinical practice, and with supportive documentation, these approaches are considered reimbursable OT services, practitioners are still concerned about the incorporation of CHAIH with clients due to billing and reimbursement issues (AOTA, 2014; AOTA, 2017). As a profession, we must begin to standardize the terminology as it relates to CHAIH in OT practice and
address this gap through policy reform, considering a Current Procedural Terminology (CPT) code specific to CHAIH in OT practice.

- This paper substantiates the relevant literature focused on the expansion of scientific research related to the efficacy of various CHAIH therapies with an emphasis on their relation to OT practice. We must tailor evidence-based practices more effectively to support professional consistency and the translation of EBP standards across patient populations and practice settings. Continuing to expand this research would support the advancement of the profession, the skill of the practitioners, and the confidence of their client base. Addressing this knowledge gap is essential in impacting the practitioner’s attitudes toward and patient’s acceptance of CHAIH therapies.

Conclusion

As the scientific evidence supporting the value and effectiveness of CHAIH continues to expand, the gaps in the literature make it difficult to determine how feasible the practitioners perceive the execution of these therapies to be with clients in their professional practice. With the increasing use of these therapies trending among adults and children in the United States, OT practitioners must be able to offer safe, research-driven treatments that support this persisting movement within our healthcare system (NCCIH, 2018b). It is critical that the OT profession becomes increasingly mindful of the efficacy of these therapies while considering the translation of evidence-based approaches into OT practice. Understanding the practitioner’s perceptions around the integration of CHAIH practices within the OT profession will help to prioritize future research supporting the safe and consistent professional integration of CHAIH therapies.
References


https://doi.org/10.3390/ijerph15020392


https://www.cdc.gov/nchs/data/databriefs/db146.htm


CHAPTER V

CONCLUSION

Summary

With the discernable growing popularity of these complementary health practices across the United States, it is important to understand the prevalence of and perceptions toward these CHAIH approaches among OT practitioners (NCCIH, 2018). Having a better understanding of how frequently CHAIH approaches are being integrated, which specific therapies are most common in OT practice, any indicators that may influence whether a practitioner is integrating these therapies with clients, and the general perceptions of these practices amid practitioners will help to prioritize prospective evidence based and translational research supporting the safe and consistent professional integration of these approaches. Occupational therapists must stay current in the evolving healthcare system to effectively contribute to the expanding body of evidence-based research surrounding the integration of these CHAIH practices with clients.

Study One (Chapter II)

The first research question in this study focuses on the prevalence of the use of CHAIH therapies in clinical practice. The results suggest that the majority of OT practitioners across the United States are implementing CHAIH approaches with their clients in practice. However, less than 18 percent of practitioners self-rated their level of knowledge of CHAIH therapies as "Very" or "Extremely" knowledgeable. Having found that 66 percent of practitioners incorporate these practices with their clients, it is concerning that so few practitioners would rate their level of knowledge as more than "Moderate." These results further substantiate the potential knowledge gap discussed in the literature surrounding the inadequate preparation of OT students entering a healthcare system that is progressively integrating these CHAIH approaches.
(Bradshaw, 2016b; Morris & Jenkins, 2018). This supports the need for further research examining these knowledge and practice discrepancies to close this significant gap for the OT profession.

This study also evaluates which CHAIH therapies are most commonly integrated with OT clients across the United States. These results also validate the literature, verifying that among the most integrated CHAIH approaches are relaxation techniques (e.g., deep breathing, mindfulness) and yoga (Taylor et al., 2018). Furthermore, having determined the occurrence of use of a wide-ranging list of CHAIH therapies among OT practitioners in the United States, this study offers guidance that could aid in determining focus areas for future evidence-based and translational research related to the safety and efficacy of these therapies to improve their utilization in practice. With the data suggesting that deep breathing, sensory techniques, and yoga are being integrated more frequently in OT practice than reflexology or Alexander Technique, prospective research can be directed in a way that supports more practitioners in offering evidence based CHAIH practices to their clients receiving these services.

Finally, this study focuses on the practitioner's self-perceived knowledge of CHAIH therapies and their general attitudes surrounding the integration of CHAIH in OT practice. The results from both analyses were statistically significant ($p < .001$), determining a meaningful difference between the groups of practitioners who do and do not integrate these CHAIH therapies with clients in their professional practice, both when considering their self-rated knowledge and their general attitudes. This study further substantiates Bradshaw's (2016) statement that addressing this knowledge gap is crucial to positively impacting a change in attitudes toward these CHAIH therapies.
Study Two (Chapter III)

Study Two explores which factors and characteristics of an OT practitioner, if any, are significant predictors of whether they are integrating CHAIH approaches into their clinical practice. The specific factors considered in this study included the practitioner’s: geographic location; community type; practice setting; population served; highest degree attained; years of clinical experience; exposure as a student; personal use; perceived ability to bill for services; gender; and race. Of the 11 independent variables considered in the multiple logistic regression analysis, six were statistically significant. These predictor variables included: (1) perceived ability to bill for services; (2) primary practice setting; (3) years of clinical experience; (4) exposure to CHAIH as a student; (5) personal use; and (6) primary population served.

Practitioners who perceived they were unable to bill \((p < .001)\) as well as those who were unsure if they could bill \((p < .001)\) for CHAIH in their clinical practice are significantly less likely to use these approaches with clients. These results further substantiate a knowledge and practice gap within the OT profession. The American Occupational Therapy Association has established that CHAIH may be used by practitioners in clinical practice and that, with supportive documentation, these therapies are classified as reimbursable OT services, (AOTA, 2014; AOTA, 2017; Holistic OT, n.d.) Coinciding with previous research, these results validate that CHAIH may be underused due to inconsistencies within the OT curriculum which is translating to a lack of knowledge in clinical practice (Bradshaw 2016a; Jackman et al., 2017).

Occupational therapists working in the following settings are more likely to incorporate CHAIH into their clinical practice: home health \((p = .004)\), mental health \((p < .001)\), private practice \((p < .001)\) and school-based \((p = .004)\). When compared to practitioners primarily working in inpatient rehabilitation (IPR), a practitioner is twice as likely to use CHAIH if they
work in the schools or home health, nearly five times more likely if they work in private practice, and six times more likely if they work in a mental health setting. While continuing to evolve, OTs’ professional roots are distinct in mental health practice (Brown et al., 2019). Complementary health approaches can be used to prepare and enhance participation and engagement in meaningful, everyday occupations for people across the lifespan which is critical to mental health, well-being, and quality of life (AOTA, 2014; Brown et al., 2019).

The primary population a practitioner serves is another significant predictor of whether they are more or less likely to integrate CHAIH with their clients. When compared to OT practitioners working primarily with adults, practitioners working with the geriatric population are less likely to use CHAIH with clients ($p = .004$). The results also found that practitioners working with the pediatric population are nearly twice as likely to incorporate these practices with their clients as those working primarily with an adult population ($p < .001$). Moreover, the number of years an OT practitioner has been practicing can also predict whether they are using CHAIH approaches. Practitioners with 21 or more years of clinical experience are significantly more likely to integrate CHAIH into their clinical practice ($p < .001$). These results support previous research indicating that practitioners with more years of clinical experience were more likely to recommend CHAIH therapies (such as sensory-based approaches) than compared to practitioners with less than five years of experience (Thompson-Hodgetts & Magill-Evans, 2018).

Whether a practitioner was exposed to CHAIH as a student as well as if they use these approaches in their personal lives may also indicate their professional integration. The results found that OT practitioners who were not exposed as a student ($p < .001$) as well as those who do not use CHAIH in their personal lives ($p < .001$) are less likely to integrate these approaches into
their clinical practice. Thompson-Hodgetts and Magill-Evans (2018) also found that mentorship (exposure to CHAIH) predicted both increased use as well as perceived benefit of these therapies in clinical practice. Furthermore, it is reasonable to assume that personal use of CHAIH can be associated with a more positive attitude regarding these approaches. Study One in this dissertation validated this assumption with results suggesting that practitioners who do not incorporate CHAIH approaches tend to have a more negative attitude toward their integration in OT practice.

Of the five remaining variables which showed no significance in predicting an OT practitioner’s use of CHAIH in clinical practice, the most remarkable was their geographic location. Peregoy and associates (2014) found regional variation amid CHAIH practices, indicating that specific practices were being used nearly 40 percent more in the Pacific and Mountain regions. Moreover, they acknowledged a lower use of practitioner based CHAIH approaches in the East South Central, South Atlantic, and West South Central regions (Peregoy et al., 2014). One potential reason this research shows no regional variation regarding CHAIH in OT practice may relate back to the lack of curricular inclusion in OT programs across the United States. As Bradshaw (2016a) indicated, most educators feel inadequately prepared to teach CHAIH content and to instruct students to incorporate these approaches into their clinical practice. This knowledge gap, also supported in Study One, may be an indication that OT practitioners nationwide are ill-prepared to offer these therapies to their client base, no matter the geographic location in which they practice.

Study Three (Chapter IV)

Study Three investigates three primary research questions including: What do OT practitioners in the United States perceive to be (1) the benefits and (2) the barriers to integrating
CHAIH approaches in their clinical practice? Taking into consideration the results from Study Two’s quantitative analysis, the second tier of Study Three’s analysis focuses on (3) are there differences amid the OT practitioner’s perspectives on these benefits and/or barriers based on the primary setting they practice in?

Using the practitioner’s responses from the open-ended question on the survey, the thematic content analysis found five major themes that were derived from the data that reflected the benefits of incorporating CHAIH approaches into OT practice. These themes included: (1) Holistic/Client-Centered (100%); (2) Improve Mental Health (89%); (3) Access (61%); (4) Pain Management/Improved Physical Health (61%); and (5) Adds to “OT Toolbox” (100%). The numbers following each of the five themes indicate the percentage of the designated categories (nine practice settings, tiered for use and non-use of CHAIH; N = 18) which revealed this specific theme when reviewing the data. While all five themes were established by more than half of the categories, “Holistic/Client-Centered” and “Adds to OT Toolbox” were both designated as benefits to using CHAIH in OT practice by all practice settings (N = 9), whether the practitioner was incorporating these approaches in their clinical practice or not.

As it related to the practitioner’s perspectives of the barriers of incorporating CHAIH approaches into OT practice, there were also five major themes. These themes included: (1) Lack of Knowledge/Formal Education (100%); (2) Reimbursement/Billing Issues (100%); (3) Access (83%); (4) Lack of evidence-based practice (EBP)/Research (89%); and (5) Acceptance/Patient Buy-In (100%). As noted above, the numbers following each of the five themes indicate the percentage of the designated categories (N = 18) which produced this specific theme when reviewing the data. Whether or not the respondent was using CHAIH approaches in their clinical practice, 100 percent of the practice settings (N = 9) distinguished “Lack of Knowledge/Formal
Education,” “Reimbursement/Billing Issues,” and “Acceptance/Patient Buy-In” as barriers to integrating CHAIH into OT practice.

Two benefits perceived by practitioners were that these practices are holistic and client-centered and that they improve mental health. These themes coincide with the NCCIH (2018a) definition that CHAIH practices are holistic and individualized in nature and emphasize the mental, emotional, functional, spiritual, social, and community aspects relating to the “whole person”. Moreover, OT’s roots emerged from mental health practice and today’s characterization of OT highlights the importance of incorporating holistic, person-centered approaches when managing health and wellness (Brown et al., 2019; AOTA, 2014). Van Puymbroeck and colleagues (2015) also found that therapists described feeling that CHAIH practices (i.e., yoga) were holistic and addressed the physical, social, and mental needs of their patients.

The third theme derived from the analysis that related to a benefit of incorporating CHAIH in OT practice was access. Respondents detailed that these approaches are easy to build-in to therapy and do not require substantial time or space to use with patients. These results also substantiate Van Puymbroeck and associates (2015) study which found that therapists identified adding a CHAIH practice (i.e., yoga) to their rehabilitation program was a non-intrusive experience. Another benefit that arose from the content analysis and supports previous research is that CHAIH can help with pain management and improve physical health. Research suggests that individuals who received CHAIH therapies throughout their rehabilitation for a traumatic spinal cord injury (SCI) showed more significant decreases in pain severity from the six-month to 12-month follow-up assessments than the control group (Taylor et al., 2018).
The fifth theme derived as a benefit of using CHAIH in OT practice was that it adds to the OT toolbox. Respondents explained that the use of these approaches can expand our therapeutic toolbox beyond the limitations of traditional treatments while still being within in our scope of practice. Moreover, it was detailed that the more options and resources we have for our patients, the more likely they are to improve holistically. These results validate Hardison and Roll’s (2016) findings that integrating mindfulness interventions (a CHAIH practice) led to improvements in adaptation to illness or disability (i.e., self-efficacy for disease management, increased quality of life, acceptance of pain symptoms), all well-defined within the OT scope of practice.

Two barriers which were derived from the content analysis included a lack of knowledge relating to CHAIH and difficulty with getting reimbursed for these practices. Study One in this dissertation defined this knowledge gap, finding that less than 18 percent of practitioners self-rated their level of knowledge of CHAIH therapies as "Very" or "Extremely" knowledgeable. This theme also validates the knowledge gap discussed in the literature regarding the inadequate preparation of OT students entering a healthcare system that is progressively integrating these CHAIH approaches (Bradshaw, 2016b; Morris & Jenkins, 2018). Furthermore, AOTA has established that, with supportive documentation, CHAIH therapies are classified as reimbursable OT services (AOTA, 2017); yet issues with billing and reimbursement appeared as a barrier. This theme also highlights the critical knowledge gap which Study Two in this dissertation found is significantly impacting a practitioner’s decision to incorporate CHAIH with clients in their professional practice.

The lack of EBP and research as it relates to these therapies in OT practice was another barrier determined in the results. Although the supporting evidence for the effectiveness of
CHAIH continues to grow, substantial gaps in the literature make it difficult to determine if the efficacy can be translated to OT practice as well as throughout client populations. Study Two in this dissertation offers a foundation for strategizing how to close the relevant gaps in EBP and the translational research related to CHAIH to help the OT profession tailor their standards more effectively. The fifth theme described in the content analysis was a general lack of acceptance. Bradshaw (2016b) detailed that addressing the knowledge gap is vital to positively impacting a change in attitudes toward these CHAIH therapies. If practitioners can demonstrate an increase in knowledge and professional consistency regarding CHAIH practices and as EBPs continue to expand, the profession will be more prepared to educate other healthcare providers, patients, and families on the benefits of these therapies as they relate to OT practice.

Strengths and Limitations

This study is the first to develop a comprehensive database of its size regarding the integration of CHAIH in clinical practice including responses from OT practitioners registered with NBCOT across the United States, from nine OT practice settings, and with varying years of clinical experience. These results can help establish a foundation for strategizing how to close these gaps in evidence based CHAIH practices and the translational research that drives our healthcare system. The estimated number of practitioners registered with NBCOT at the time the survey was sent out was greater than 132,900 (NBCOT, 2019). While the survey obtained responses from a broad and inclusive audience, the total number of respondents (N = 4,420) only secured a three percent response rate. To determine whether these results are generalizable, it is important to compare the participant demographics with the available data which encompasses the OT profession across the United States.
The AOTA 2019 Workforce and Salary Survey is the most recent and comprehensive dataset detailing the United States’ OT profession workforce. The results from the AOTA survey found that 84 percent of OT practitioners classified themselves as white and 91 percent classified themselves as female (AOTA, 2020). These results correspond with this research which found that 87 percent of participants were white, and 93 percent were female. The AOTA survey detailed that 67 percent of practitioners who responded earned a master’s degree (AOTA, 2020); similarly, this research found that 63 percent of participants also reported earning a master’s degree. Years of clinical experience noted for each survey included: two to ten years (40% [AOTA]; 36% [this research]), 11 to twenty years (both were 23%), and twenty or more years (both were 37%) (AOTA, 2020).

The distribution of respondents’ geographic location in which they practice as well as their primary practice setting also correspond between each of these surveys. The results from AOTA found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (8%) (AOTA, 2020). Similarly, this research found the highest density of respondents from the North Central region (27%) and the lowest density of respondents from the Mountain region (7%). Finally, the AOTA 2019 Workforce and Salary Survey results compare to this research’s results regarding practice setting. The following percentages are reported by AOTA and this research, respectively: early intervention (both were 4%), mental health (2%; 3%), schools (both were 18%), and skilled nursing facility (14%; 13%) (AOTA, 2020).

Largely, the results from the AOTA 2019 Workforce and Salary Survey coincide with the results found in this research study. This could be an indication that, while this particular research only captured a three percent response rate overall, the results are sufficient and can be
generalized to the United States’ OT profession as a whole. After having established the similarities in AOTA’s survey results as it relates to the OT profession across the United States, the broad and inclusive survey responses are considered a strength of this research.

Limitations of the study include the possibility of response bias. While the sample size is suitable for this research, practitioners with skills in and positive attitudes toward CHAIH or laterally, those with negative attitudes toward these approaches, may have been more likely to respond to the survey. Additionally, because the online survey was self-administered, it is possible that the answers provided were not an accurate representation of the respondent’s clinical practices and the possibility of social desirability bias should be considered. In addition, the broad and inconsistent definition of CHAIH related to the OT scope of practice could have impacted consistency between participants completing the survey. While a comprehensive definition of this term was offered along with a vast list of examples to provide clarification and uniformity, respondents may not have read or understood that section of the survey page or may have responded "No" if a specific CHAIH approach they use was not included in the list of examples.

Implications and Future Research

The results of this dissertation have the following implications for OT practice:

- These results support previous research validating the inconsistencies regarding the inclusion of CHAIH in OT curriculum standards. Perceptions of CHAIH develop early in education and unfamiliarity with these practices may be associated with a practitioner’s inability to effectively translate these approaches into their clinical practice (Jackman et al., 2017). To guarantee professional consistency around the
integration of CHAIH throughout United States’ OT programs, ACOTE should revise the educational standards to clearly define these approaches in OT education to ensure that well-rounded practitioners enter the field in a healthcare system that is increasingly incorporating CHAIH practices.

- This research exemplifies that OT practitioners are significantly less likely to incorporate CHAIH approaches into their clinical practice when considering their ability to bill for these services and insurance reimbursement. Even though AOTA has established that CHAIH therapies may be used by practitioners in clinical practice and with supportive documentation, these approaches are considered reimbursable services, practitioners are still concerned about the incorporation of CHAIH with clients due billing and reimbursement issues (AOTA, 2014; AOTA, 2017). This dissertation highlights a critical knowledge gap which significantly impacts a practitioner’s decision to incorporate CHAIH with clients in their professional practice. As a profession, we must begin to standardize the terminology as it relates to CHAIH in OT practice and address this gap through policy reform, considering a Current Procedural Terminology (CPT) code specific to CHAIH in OT practice.

- This research offers a foundation to help the OT profession tailor their EBP research more effectively to support professional consistency and the translation of EBP standards. With the results verifying the most common practice settings in which these approaches are being used as well as the primary patient populations, OT practitioners ought to focus their research to support the safe and consistent professional use here before expanding across settings and populations. These results substantiate the relevant literature focused on the expansion of scientific research.
related to the efficacy of various CHAIH therapies with an emphasis on their relation to OT practice. Continuing to expand this research would support the advancement of the profession, the skill of the practitioners, and the confidence of their client base.

- This dissertation highlights the broad and inconsistent definition of CHAIH. With the majority of practitioners integrating these approaches with clients in their professional practice and with the persisting trends in healthcare across the United States, it is necessary to develop a consistent and concise definition as it relates to the OT scope of practice.

Conclusion

While the supporting evidence for the effectiveness of CHAIH continues to grow, the gaps in the literature make it difficult to determine how commonly OT practitioners are integrating these approaches, which factors or characteristics impact a practitioner’s decision to use CHAIH with clients, and how feasible the practitioners perceive the execution of these therapies to be in their professional practice. This mixed methods dissertation explored complementary health approaches and integrative health in relation to OT practice. Occupational therapists must be able to offer safe, research-driven treatments that support this persisting health care trend while being mindful of the efficacy of these therapies and considering the translation of evidence-based approaches into OT practice. Having a better understanding of the prevalence and perceptions around the integration of CHAIH practices within the OT profession will help to prioritize future research supporting the safe and consistent professional integration of CHAIH therapies.
Complementary health approaches and integrative health is a term which extends beyond the capacity of a single discipline. Therefore, assimilating pertinent data, information, and perspectives from an interdisciplinary team can help to advance our knowledge and understanding of these practices in a more comprehensive manner. The research team supporting this dissertation is comprised of experts from various fields including occupational therapy, holistic health and wellness, psychology, epidemiology, public health, and statistics. The interdisciplinary nature of this dissertation will help to establish a foundation for strategizing how to close the relevant gaps in evidence-based practices and the translational research related to CHAIH, not only for OT practitioners but for various healthcare professionals.

References


 [https://doi.org/10.3109/07380577.2014.982315](https://doi.org/10.3109/07380577.2014.982315)


 [http://dx.doi.org/10.5014/ajot.2016.018069](http://dx.doi.org/10.5014/ajot.2016.018069)

 [https://holisticot.org/holistic-ot-frequently-asked-questions-faqs/](https://holisticot.org/holistic-ot-frequently-asked-questions-faqs/)


 [https://doi.org/10.3390/ijerph15020392](https://doi.org/10.3390/ijerph15020392)
https://www.nbcot.org/en/Public/About-NBCOT

https://nccih.nih.gov/health/integrative-health#hed2

https://www.cdc.gov/nchs/data/databriefs/db146.htm


Appendix A

Human Subjects Institutional Review Board Letters of Approval
Date: October 28, 2019

To: Kieran Fogarty, Principal Investigator
Sarah Renner, Student Investigator

From: Amy Naugle, Ph.D., Chair

Re: IRB Project Number 19-10-18

This letter will serve as confirmation that your research project titled “Prevalence, Knowledge, and Attitudes of Complementary Health Approaches and Integrative Health (CHAIH) Practices Among Occupational Therapy Practitioners in the United States” has been approved under the exempt category of review by the Western Michigan University Institutional Review Board (IRB). The conditions and duration of this approval are specified in the policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may only be conducted exactly in the form it was approved. You must seek specific board approval for any changes to this project (e.g., add an investigator, increase number of subjects beyond the number stated in your application, etc.). Failure to obtain approval for changes will result in a protocol deviation.

In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the IRB for consultation.

The Board wishes you success in the pursuit of your research goals.

A status report is required on or prior to (no more than 30 days) October 27, 2020 and each year thereafter until closing of the study. The IRB will send a request.

When this study closes, submit the required Final Report found at https://wmich.edu/research/forms.

Note: All research data must be kept in a secure location on the WMU campus for at least three (3) years after the study closes.
Date: February 15, 2021

To: Kieran Fogarty, Principal Investigator
Sarah Renner, Student Investigator

From: Amy Naugle, Ph.D., Chair

Re: WMU IRB Project Number 19-10-18

This letter will serve as confirmation that the changes to your research project titled “Prevalence, Knowledge, and Attitudes of Complementary Health Approaches and Integrative Health (CHAiH) Practices Among Occupational Therapy Practitioners in the United States” requested in your memo received February 15, 2021 (to update data analysis plan) have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

**Approval Termination:**

October 2

7, 2021
Appendix B

Survey Instrument
Definition of Complementary Health Approaches and Integrative Health (CHAIH)

Complementary health approaches are broadly defined as “non-mainstream practices used together with conventional medicine”, while alternative health approaches are otherwise used in place of conventional medicine (NCCIH, 2018). Integrative health brings conventional and complementary approaches together in a coordinated way and emphasizes a holistic, patient-focused approach to health care and wellness. This often includes mental, emotional, functional, spiritual, social, and community aspects relating to the “whole person” (NCCIH, 2018).

Comprehensive List of Therapies

Yoga, Meditation, Aromatherapy, Guided Imagery, Mindfulness, Reiki, Acupuncture, Ayurveda, Chiropractic Therapy, Natural Products (herbs, probiotics, vitamins), Deep Breathing, Tai Chi, Massage, Qi Gong, Pilates, Sensory Techniques, Alexander Technique, Energy Healing, Reflexology, Spiritual Healing, Other ____

1. Do you currently use CHAIH approaches with clients in your professional practice? (Yes, No, Unsure)

➢ If answered no, survey skip logic used, and participant routed to question 4.

2. Please check the CHAIH therapies you use most frequently with clients in your current professional practice. Check no more than 3 therapies.

➢ See above for list of therapies offered. Each therapy checked opens in question 3.

3. Typically, how many of your clients receive these CHAIH therapies during their session(s)? (Less than 25%, 26-50%, 51-75%, More than 75%)

4. Are you able to bill insurance for these specific CHAIH therapies? (Yes, No, Unsure)
5. Were you exposed to the use of CHAIH therapies in clinical practice as a student? (Yes, No, Unsure)

6. In your personal life, do you use any of these CHAIH therapies? (Yes, No, Unsure)

7. How knowledgeable would you rate yourself on the topic of CHAIH therapies? (Rating scale options: Not at All, Slightly, Moderately, Very, Extremely)

8. What is your general attitude regarding the use of CHAIH in clinical practice? (Rating scale options: Negative, Slightly Negative, No Opinion, Slightly Positive, Positive)

9. What do you believe are the benefits and/or barriers, if any, to using CHAIH therapies in clinical practice as an occupational therapist? Please type N/A for no response. (Open-ended question)

10. Highest Degree Attained (Bachelors, Masters, OTD, PhD)

11. Years of Clinical Experience (Less than 1, 2-10, 11-20, 21+)

12. Current Practice Setting (School-Based, Early Intervention, Home Health, Mental Health, Outpatient, Skilled Nursing Facility, Inpatient Rehabilitation Hospital, Acute Care, Private Practice, Other ____)

13. Primary Population Served (Neonatal, Pediatrics, Adults, Geriatrics, Other ____)

14. Geographic Location of Practice (50 states + Travel OT [multiple states])

15. Which type of community best describes where your current practice is located (Urban, Suburban, Rural, Unsure)

16. Gender (Female, Male, Non-Binary, Other ____ , Prefer Not to Say)

17. Race (Hispanic or Latino, Not Hispanic or Latino, American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, White, Multiple Races, Other ____ , Prefer Not to Say)