



## OCCUPATIONAL THERAPIST PRACTITIONERS' PERCEPTIONS OF CONTINUING EDUCATION FOR NEUROREHABILITATION: A QUALITATIVE STUDY

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### ABSTRACT

Occupational therapists are required to obtain CE units to ensure professional competency. This study examined occupational therapy practitioners to understand: What are OTPs' perceived challenges and CE needs when working with populations with neurological impairments? And how can CE courses be tailored towards addressing these challenges and gaps in knowledge effectively? There were 14 responses and 6 themes identified. Participants indicated if they had access to supportive resources as well as their preferred mode of delivery for CE. The findings of this study can be used to identify the preferences, specific clinical skillsets currently used, and gaps in supportive resources.

**Keywords:** continuing education, occupational therapy, perceptions, neurorehabilitation

### INTRODUCTION

Healthcare professionals are expected to be lifelong learners who stay abreast of current research (Frankford et al., 2000). To ensure lifelong learning, continuing education (CE) and professional development courses are required across an array of healthcare disciplines (Committee on Planning a Continuing Health Care Professional Education Institute, 2010; Skees, 2010). Examples of healthcare professions that require CE include but are not limited to nurses, physician assistants, veterinarians, physical therapists, and occupational therapists (Centers for Disease Control and Prevention [CDC], 2022). These courses serve the purpose of maintaining a level of practitioner competence, improving outcomes for patients, and promoting best practices (LeaderStat, n.d.). Healthcare professions in the United States require CE to enhance the workforce's quality and the skillsets of practitioners to maintain discipline-specific licensure and certifications (Committee on Planning a Continuing Health Care Professional Education Institute, 2010). National boards and state organizations enforce mandated CE and professional development at national and state levels. Discipline-specific

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requirements vary by profession, board, and state (Committee on Planning a Continuing Health Care Professional Education Institute, 2010). For example, Florida requires 40 hours per renewal cycle for continuing medical education requirements for a Doctor of Medicine and a Doctor of Osteopathic Medicine (American Medical Association [AMA], 2023). Additionally, there are required course topics such as preventing medical errors, ethics, prescribing medications, domestic violence, human trafficking, and HIV/AIDS courses (AMA, 2023). Although these requirements are different for each healthcare profession, there are similarities regarding CE and how this information is delivered to practitioners (AMA, 2023).

Healthcare professionals' completion of CE courses has evolved with technology and the COVID-19 pandemic. As forms of technology and therapeutic techniques continue to emerge, there is a need for CE to ensure that the delivery of information maintains professional competence (Committee on Planning a Continuing Health Care Professional Education Institute, 2010). Different methodologies are used to deliver CE courses, such as virtual platforms, in-person training, self-directed options, and various certifications (Committee on Planning a Continuing Health Care Professional Education Institute, 2010). The ever-growing virtual platforms for CE courses have generated the need to explore practitioner perceptions of the level of efficacy to determine the competency of material covered in CE. Skapetis et al. (2022) compared the perceptions of dental health professionals when attending both in-person and virtual CE. It was discovered that professionals in a dental hospital preferred in-person CE; however, they scored virtual CE higher for presenter quality, and overall mean scores were higher for non-clinical delivery (Skapetis et al., 2022). Advancements in virtual CE options, especially after the COVID-19 pandemic, have led to the expansion of options for CE obtainment by various healthcare professionals.

As digital platforms continue to evolve, the use of social media has entered the spotlight as a delivery method for CE for various healthcare disciplines, including those in rehabilitative sciences. Among OTPs (occupational therapy practitioners) and students, Twitter was received positively as a tool for continuing professional development. Moreover, these providers were willing to use social media platforms, like Twitter, for CE to increase networking, accessibility, and educational development (Murray & Ward, 2017; Ramsden et al., 2022). However, support and engagement were identified as weaknesses of virtual CE, emphasizing the need to assess the use of digital technology for professional development and training courses (Murray & Ward, 2017; Ramsden et al., 2022). Understanding practitioners' preferences and how to support their educational, professional, and personal needs is critical for CE developers to provide effective educational courses.

General preferences of healthcare practitioners have been explored through qualitative research to gain an understanding of what factors influence practitioners' choices of CE content to engage. Krank et al. (2020) utilized a qualitative research design to explore factors that influenced Board Certified Behavior Analysts' (BCBAs) selection of CE courses with the intent to improve quality and access to adequate resources for registered members. Two factors identified by respondents were the availability and affordability of courses offered. At the same time, accessibility appeared to be a motivating factor for these professionals' selection of CE courses (Krank et al., 2020). The impact of cost has emerged in other studies with varying influences, as some healthcare professionals consider costs as less important

variables when selecting CE courses (Krank et al., 2020).

In contrast, other studies have revealed that the amount professionals were willing to spend on CE did not equate to the cost of available evidence-based courses (Powell et al., 2013). Understanding practitioner perceptions regarding the accessibility of affordable CE courses is necessary to serve healthcare workers striving to meet CE requirements and maintain competence in their respective fields. Availability, affordability, and accessibility affect healthcare professionals' utilization of CE courses.

Similarly to the cost, course developers must understand the credibility of the evidence supporting the interventions focused on in the courses. Krank et al. (2020) noted that most BCBA practitioners commented on the need for a greater collection of trusted resources, such as peer-reviewed articles. Evidence-based interventions are crucial for effective healthcare delivery in other professions, as it was discovered that mental health clinicians preferred advanced clinical training over basic training with or without the supervision of a manualized intervention (Powell et al., 2013). These findings suggest that practitioners value evidence-based practice and consider the level of evidence when selecting CE courses. Those who create and disseminate these CE courses must consider their audience's perceptions of the credibility of the information provided in a CE course and how this new knowledge can serve their clients.

Another aspect is the efficacy of CE courses once they have been developed and delivered to healthcare practitioners. The use of an online CE course to improve clinical outcomes in healthcare accounts for the effectiveness of the education provided in training (Louw et al., 2022; Philips et al., 2022). Practitioners favored the characteristics of these courses, and the effectiveness of this education is vital to understanding how to disseminate new knowledge and empower practitioners with clinical practice skills. For example, characteristics of courses such as virtual delivery and self-directed speed were perceived as effective educational tools for OTPs to synthesize new knowledge into applicable interventions for clients (Philips et al., 2022). Moreover, after completion of these CE courses, practitioners felt more competent in serving their client's unique needs based on their diagnosis, and this led to positive changes in clinical outcomes after applying information from the self-directed and virtual CE (Louw et al., 2022; Philips et al., 2022). Understanding the impact of specific topics and diagnoses discussed in a CE course on the recipient will allow the delivery to provide practical, clinically relevant, and accessible education. The current literature highlights the importance of further investigating healthcare professionals' perceptions of CE.

Addressing the gaps in CE that lead to challenges for OTPs when working with neurologically impaired populations, will foster the development of effective learning opportunities to improve competence and perceived self-efficacy. Neurorehabilitation is a complex, specialized setting, and the evidence utilized in intervention selection and delivery continues to evolve (Celian et al., 2021). Supporting the needs of current practitioners and gathering data that describes the challenges, preferences, and needs of practicing occupational therapists will provide evidence for CE and professional development course developers. The insight gained will also serve the profession as a whole, with new courses developed and tailored toward the identified needs of therapists across the United States.

The proposed research study examined a particular population of practitioners who are currently or have previously attended a CE course delivered by ARC Seminars. ARC Seminars is a CE company founded in 2016 by an occupational therapist (OT), physical therapist (PT), and speech language pathologist (SLP). This company is based out of New Jersey but serves to provide educational opportunities for OTs, PTs, SLPs, and nurses across the United States in both virtual and in-person capacities. The PICO questions for this study investigated: What are OTPs' perceived challenges and CE needs when working with populations with neurological impairments? And how can CE courses be tailored towards addressing these challenges and gaps in knowledge effectively?

## Materials and Methods

This qualitative research study utilized a survey with open-ended questions to obtain data from practicing occupational therapists through convenience sampling. Two Doctors of Occupational Therapy reviewed the survey questions to ensure the questions were clear, non-biased, and encompassed relevant details. Reviewers of the survey items hold terminal degrees in Occupational Therapy and have a combined 13 years of clinical practice experience. After the review and with institutional board approval, the survey was distributed to ARC Seminars' email list, which included occupational therapists and occupational therapy assistants from across the United States. The participants were OTPs seeking continuing education courses to adhere to licensure requirements, advance clinical skillsets, and to improve client outcomes. In total, the survey was sent to over 1,200 practitioners. The 5-item survey was estimated to take approximately 25 minutes, and informed consent was obtained prior to data collection and survey completion. At any point, if the respondent no longer wanted to participate in the study, they were instructed to close the browser to prevent data from being submitted. Only complete responses were included in the data analysis.

A qualitative approach was employed to avoid limiting the responses of participating practitioners and to gather all-encompassing data for coding. Once informed consent and data were collected, the primary investigator reviewed the responses to ensure no identifying information was provided prior to sharing responses with the secondary investigator. The primary and secondary investigators utilized thematic coding procedures independently to identify themes among the responses. Both investigators identified similar reoccurring terms, general topics, and feelings discussed in the survey responses and composed themes based on these responses.

## RESULTS

There were 14 responses to the open-ended survey questions returned, and the investigators agreed upon emergent themes from the survey (See Table 1.1). The first question asked respondents: "Are there challenges you experience when working with clients with neurological conditions? If so, what are some examples?" Barriers, both internal and external, as well as follow through, were two themes identified amongst responses to question one. Internal barriers such as motivation, depression, and "personality changes like aggression or impulsivity from cognitive components," along with external barriers such as insurance coverage and social barriers involving the family and community, were commonly discussed

by practitioners. The second question explored: “What advanced clinical practice skillsets would benefit a practitioner working with this population?” OTPs specifically identified skills associated with vision rehabilitation and trainings or certifications in other specialized neurological interventions. Neuromuscular re-education and cognitive considerations were frequently noted within survey responses as beneficial skills when working with neurological populations.

The third question asked: “What evidenced-based treatment interventions do you utilize in practice for clients who are experiencing neurological deficits?” OTPs identified a plethora of interventions employed within their treatment sessions. Function forward, deep physical agent modalities (DPAMs), and Mirror Therapy (MT) were regularly used interventions practitioners identified when treating clients with neurological impairments. The fourth question: “Do you have access to internal or external supports (at place of employment or other) accessible to you when working with clients seeking neurorehabilitative services?” Nine respondents reported having access to supports, many identifying their co-workers as internal supports. The remaining five reflected on a lack of internal or external supports as they “frequently have to seek out these supports [themselves] as they are not readily accessible...” The fifth and final question inquired: “Do you prefer in-person or virtual learning platforms when developing professional skillsets to support the delivery of occupational therapy services? Why?” The majority reported preferring in-person learning platforms capturing the “hands-on” approach to developing professional skillsets. Five OTPs suggested both virtual and in-person methods as virtual platforms were recognized for their convenience; however, in-person methods were preferred “depending on the topic” of the course. Finally, three asserted that virtual learning platforms were preferred due to the self-paced nature and immediate or direct feedback to drive the learning process.

**Table 1.1** Extracted Themes

Question	Themes
Are there challenges you experience when working with clients with neurological conditions? If so, what are some examples?	Barriers (internal/external) Follow through Vision
What advanced clinical practice skillsets would benefit a practitioner working with this population?	Training/certifications in specialized neurological interventions Function-based
What evidence-based treatment interventions do you utilize in practice for clients who are experiencing neurological deficits?	Specific interventions (DPAMs, MT)
Do you have access to internal or external supports (at place of employment or other) accessible to you when working with clients seeking neurorehabilitative services?	9 = yes 5 = no
Do you prefer in-person or virtual learning platforms when developing professional skillsets to support the delivery of occupational therapy services? Why?	5 = both (convenience and topic dependent) 3 = virtual (pace/feedback) 6 = in-person (hands-on)

What are OTPs' perceived challenges and CE needs when working with populations with neurological impairments? And how can CE courses be tailored towards addressing these challenges and gaps in knowledge effectively? OTPs discussed their preferences for modes of delivery of CE courses and how this impacts their ability to retain and implement education provided by these educational resources. In-person courses were the most popular, as 79% of respondents reported preferences for a hands-on learning environment or preferences for both virtual and in-person. When exploring perceived challenges encountered by OTPs while working with neurologically impaired populations, internal and external barriers were highlighted as deterrents to the rehabilitation process's success. CE courses equipping OTPs with strategies and skillsets to navigate these barriers can be used to bridge the gap for improved competence and confidence. Overall, the sentiments of OTPs who have attended a CE course delivered by ARC Seminars were elucidated through the survey responses.

## **DISCUSSION**

### **Implications**

The low response rate to this study could be attributed to the open-ended nature of the questions. There were three email campaigns distributed over the month of data collection in an attempt to increase participation. The low power of the study should be considered when discussing the generalizability of the results. Nevertheless, the responses that were obtained can provide insight into how OTPs view working in neurorehabilitation and begin to identify areas that CE developers can provide supplemental education to combat challenges when working in this setting.

The findings of this study can be used to identify the preferences, specific clinical skillsets currently used, and gaps in supportive resources for OTPs treating clients with neurological impairments. Gaining the perspective of current practitioners is invaluable as this can reveal what clinical skills are being actively used in the field and what areas educational institutions and organizations could focus on providing further training. Specifically, understanding the implications of the themes revealed in this study presents an opportunity for CE developers to target the gaps in current clinical knowledge and address them through educational experiences. Participants of this study discussed their preferred mode of receiving CE education, the topics they would benefit from, and the setting specific challenges they face while working in neurorehabilitation. These findings can be used to not only improve the clinical competence of OTPs but also serve to maximize client outcomes in these settings.

The challenges that OTPs, or any other healthcare worker, face can be specific to the setting in which they are employed or the population they treat. Amongst the themes extrapolated from the survey responses was the theme of barriers, both internally within the client and externally of the client. Some external barriers identified, such as insurance coverage, can be addressed by CE courses focusing on advocacy and how to assume leadership roles. Perez et al. (2021) reviewed the advancements in motor function impacted by neurological impairment and asserted that stigma is a barrier that has remained consistent over the last decade. OTP respondents of this study did not specifically identify stigma as a barrier when working with this population. However, a lack of support from both the family as well as the community at large were noted as challenges when working with this population. Inadequate

support could be associated with negative stigma secondary to a lack of education regarding neurological impairment. Stigma could present as discriminatory behavior, stereotypes, and negative attitudes (Poritz et al., 2019). Moreover, using evidence-based practice to address the negative stigma associated with conditions such as TBI can positively impact community reintegration for these clients and can help prevent social isolation amongst the caregivers (Phelan et al., 2011; Poritz et al., 2019). The internal barriers discussed in the survey responses relate to components of current evidence-based practice that OTPs can implement within treatment sessions. Cognition, neuromuscular re-education, and behavioral changes were noted as examples of challenging internal barriers to the neurorehabilitation process. These barriers are not uncommon for an OTP to address regularly but were still asserted by respondents as barriers, nonetheless. Using topics highlighted by OTPs from this survey to develop CE courses can bridge the identified gaps in knowledge and increase perceived confidence when working with clients with neurological impairments.

Follow-through (or follow-up) was another barrier recognized by OTPs within the study. The National Cancer Institute (n.d.) defines follow-up as “monitoring a person’s health over time after a treatment.” The concept of compliance is similar to follow-up in the rehabilitation world, noted by Haggerty et al. (2003) as “the degree to which a series of discrete healthcare events are experienced as coherent, connected, and consistent with the patient’s medical needs and personal contexts” (p. 1221). Follow-through, or compliance, is vital to the client’s success; non-compliance can invalidate the efforts put forth in the rehab process (Boucher et al., 2013). These concepts encompass the continuum of care provided by medical professionals, such as OTPs. Previous studies have asserted the importance of continuing care, especially when transitioning from one healthcare setting to another, due to the amplified challenges faced by clients and their families (Hitzig et al., 2020). Vogel and Paul (2001) surveyed occupational therapists in Michigan to explore the frequency of follow-up post-initial treatment periods, and it was revealed that only 17% of those surveyed regularly followed up with their patients. Of those who indicated regular follow-up, only 38% recognized continuation of care in the form of follow-up as a standard practice at their work sites (Vogel & Paul, 2001). Follow-up is supported by existing literature as an integral component of the rehabilitation process as it improves clients’ ability to engage in activities of daily living, transition subsequent living environments and impacts contributing factors to rehospitalization and a lack of follow-up can compromise client outcomes (Boucher et al., 2013; Hitzig et al., 2020; Vogel & Paul, 2001).

Neuroplasticity must be at the forefront when addressing the importance of follow-up with clients with neurological impairments. One response in this study reported, “Neurological recovery is challenging due to the slow nature of neuroplasticity and nerve repair.” One of the principles of neuroplasticity involves repetitive movement patterns to restructure neural pathways; however, the exact amount of movement necessary to activate neural plasticity is confounded by many client-specific factors (Lang et al., 2015). Current literature suggests the importance of high movement repetitions to maximize the return of movement and, ultimately function (Lang et al., 2015; Willy et al., 2019). However, it is only sometimes realistic to accomplish high repetitions of movements in conjunction with other therapeutic interventions during the therapy session; therefore, the concept of follow-up is key to maximizing client outcomes (Boucher et al., 2013; Zbogor et al., 2017). The lack of follow-

up can be directly related to client outcomes. As a result, OTPs view this as a challenge when providing effective interventions to clients experiencing neurological deficits. These findings suggest the significance of utilizing time in therapy sessions to maximize rehabilitation potential, but in order to do so, OTPs have to be equipped with an adequate education. Participants of this study revealed a need for additional training and certifications in specialized neurological interventions, including vision therapy. Similar to the findings of this study, Powell et al. (2013) found that BCBA's acknowledged a need for advanced clinical training opportunities, which emphasizes the need for CE courses offering these trainings or certifications in other healthcare professions as well. Effectively incorporating current evidence-based practice within treatment sessions will promote healthcare practitioners' ability to support clients in achieving their goals.

In addition to accessing evidence-based practice, there are other means of supporting clinicians inside and outside the workplace. Nine of the OTPs included in this study reported having access to supportive resources at their work site or external to their facility. Support gained from co-workers and virtual platforms such as YouTube were discussed in responses of those who perceived adequate access. However, five asserted a need for more access to resources that could support their ability to provide effective interventions. OTPs' inability to access supports inside and outside their facilities could be correlated to internal pressures placed upon them by their facilities, such as high caseloads and high productivity standards (Cantu et al., 2021). One participant asserted that their access to supplemental resources was decreasing because of high productivity demands enforced by their employers. There is a growing concern about the increasing productivity standards in inpatient facilities and its negative impact on professional and adequate care (Bennett et al., 2019).

Furthermore, the increasing rate of neurological impairments is correlated with higher caseloads for OTPs. In 2019, it was found that 3.1 million men and 5.1 million women live with neurological impairments in the U.S. (Pan American Health Organization, 2019). The prevalence of neurological impairments causes OTPs caseloads to increase; however, the high productivity demands create a disconnect in the support provided by employers. One capacity that rehab facilities can support OTPs is allocating funds for CE courses to obtain their required units for licensure. CE courses support the continued competency of OTPs and can be used to improve confidence levels when treating challenging conditions.

The mode of delivery preferences of OTPs for CE courses were explored in this study, and the benefits of hands-on learning opportunities were recognized as motivating factors for the selection of courses. Six participants indicated that they preferred in-person methods, whereas five affirmed that both virtual and in-person modes were acceptable dependent on the content of the course. Course developers can use the impact the content of the course has on CE selection in the creation of appealing and effective educational opportunities for OTPs. Moreover, respondents of this study reported DPAMs and MT as current advanced clinical interventions employed in the treatment of neurologically impaired populations, which indicates a level of competence when administering these treatment techniques. Studies exploring healthcare practitioners' perceptions of virtual delivery methods and the effectiveness of these courses have found improvements in reported competence in clinical skillsets (Philips et al., 2022). The benefits of self-paced virtual CE were highlighted in the study conducted by Philips et al. (2022) and the OTPs who participated in this study. The



self-paced nature of virtual platforms was observed as an appealing characteristic by participants, which was attributed to convenience and to receiving direct, immediate feedback. Interestingly, the concept of cost was not discussed in any survey responses within this study when considering OTP preferences. Nonetheless, the concept of affordability has been recognized as a contributing factor to the accessibility to CE (Krank et al., 2020).

Ultimately, this study sought to understand OTPs' perceptions of CE for populations with neurological conditions and what CE courses can do to bridge the gap in knowledge for improved confidence when treating clients with neurological conditions. The findings of this study revealed that there are commonalities among the challenges faced by OTPs working in neurorehabilitation, including barriers and lack of follow-through, which impact their ability to deliver effective and continued care to maximize client outcomes. Furthermore, most OTPs perceived having access to adequate supportive resources such as their professional peers and informative websites. When considering the role CE courses can embody in bridging the gap in knowledge, it was found that increased specialized training courses in focus areas such as vision were needed to improve professional competency and prepare clinicians to work in neurological rehab settings. When deciding what mode of delivery to utilize, CE developers should consider the topic's difficulty level and if hands-on learning environments are necessary to provide sufficient learning opportunities.

### **Strengths & Limitations**

Several limitations are observed in this study, including low power, methods for gathering participants, and the length of the distributed survey. Only 14 survey responses were recorded for this study despite being distributed to more than 1,200 OTs and OTAs. This lowers the generalizability of the findings and indicates less representation of the OTP population as a whole. The low response rate could be attributed to the open-ended nature of the survey items. Another limitation is the methodology for obtaining participants, as all participants were ARC Seminar's network members. ARC is a CE organization that provides courses and educational resources to OTs, PTs, SLPs, and nurses. This network consists of practitioners who have previously participated in courses with ARC or those who have otherwise expressed interest or voluntarily signed up to be distributed educational resources disseminated by ARC Seminars. The selected network could be considered a limitation as this population currently or previously sought CE courses through ARC. This could bias results due to the need for more randomization of participant collection. Finally, the distributed survey was only five questions, limiting the information gathered. Investigators attempted to mitigate this limitation by proposing open-ended questions to allow for elaboration and not restrict participant responses.

This study also had some strengths, including expert-reviewed survey items, interrater reliability, open-ended questions, included both OTs and OTAs, and was not limited by state. Prior to the dissemination of the survey, the items were reviewed by two licensed occupational therapists to ensure items were worded in a manner that was easy to understand and that gathered relevant information relating to OTP perceptions. There was also high interrater reliability established within this study as the primary and secondary investigators independently extracted almost identical themes from survey responses. The open-ended

nature of the questions was also considered a strength of this study. OTP responses were not limited by choice selection; instead, they were given the opportunity to explain their thoughts in their own words. Finally, the inclusion of both OTs and OTAs from various states was considered a strength of this study, as this allowed for responses to be more generalizable to OTPs within the U.S.

## **RECOMMENDATIONS**

Continued research investigating perceptions of the needs of practitioners in neurorehabilitation and how to best use CE courses to address these needs is necessary to promote clinical competence and positive client outcomes. Future studies should include larger sample sizes to gather more data on the perceptions of OTPs and how to best serve the larger population as a whole. It would also be beneficial to gather information regarding recent CE courses OTPs took and if the education provided was incorporated into treatment sessions effectively. Information regarding past experiences with CE would depict the perceived efficacy of the CE obtained and speak to the impact of different modes of delivery and content of the course. Additionally, asking participants to differentiate their roles as an OT or an OTA may also provide information on the perceptions of the different levels of OTPs. Other disciplines of the interdisciplinary team should be included in future research as the success of the rehab process is a team effort, and all professions should feel supported and competent when treating complex neurological impairments.

## **CONCLUSION**

The present study provides insight into approaches to better equip OTPs with the confidence to treat challenging neurological conditions. The development of CE courses that address current challenges articulated by OTPs, such as barriers, follow through, and access to evidence-based resources for advanced clinical interventions for focus areas, such as vision therapy, can be used to support the needs of clinicians working in neurorehabilitation. Specific vehicles for CE, such as virtual and in-person delivery, should be based on the course content and the topics addressed. CE can be used as an instrumental supportive resource for improving the competence of OTPs in treating neurological impairments.

## **Disclosure of Interest**

The authors report there are no competing interests to declare.

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## Disclosure Statement

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## **Appendix A**

### **Survey Items**

#### **Survey Questions**

1. Are there challenges you experience when working with clients with neurological conditions?
2. What advanced clinical practice skillsets would benefit a practitioner working with this population?
3. What evidenced-based treatment interventions do you utilize in practice for clients who are experiencing neurological deficits?
4. Do you have access to internal or external supports (at place of employment or other) accessible to you when working with clients seeking neurorehabilitative services?
5. Do you prefer in person or virtual learning platforms when developing professional skillsets to support the delivery of occupational therapy services?
  - a. Why?