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Abstract

The Occupation-Centered Intervention Assessment (OCIA) is a tool designed to capture and rank occupational therapy interventions through an occupational lens to improve occupational therapy students' professional reasoning skills. The purpose of this study was to determine the inter-rater reliability of the OCIA for occupational therapy interventions provided to adults with physical rehabilitation needs as observed by occupational therapy students. Utilizing a methodological research approach, 111 students completed training for application of the OCIA and independently scored five standardized videos of occupational therapy interventions. Results indicated an overall agreement of $\alpha=0.856$ using Krippendorff's alpha. Student raters demonstrated good agreement for rating adult physical rehabilitation interventions, indicating that the OCIA may be a beneficial learning tool for didactic coursework prior to experiential learning.

Keywords

Professional reasoning, professional identity, clinical reasoning, students, outcome and process assessment (health care)

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Establishing Inter-Rater Reliability of the Occupation-Centered Intervention Assessment for Student Observation of Rehabilitation Interventions

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ABSTRACT

The Occupation-Centered Intervention Assessment (OCIA) is a tool designed to capture and rank occupational therapy interventions through an occupational lens to improve occupational therapy students' professional reasoning skills. The purpose of this study was to determine the inter-rater reliability of the OCIA for occupational therapy interventions provided to adults with physical rehabilitation needs as observed by occupational therapy students. Utilizing a methodological research approach, 111 students completed training for application of the OCIA and independently scored five standardized videos of occupational therapy interventions. Results indicated an overall agreement of $\alpha=0.856$ using Krippendorff's alpha. Student raters demonstrated good agreement for rating adult physical rehabilitation interventions, indicating that the OCIA may be a beneficial learning tool for didactic coursework prior to experiential learning.

Occupational therapy practitioners are experts in understanding the complexities of human occupation. Despite a broad scope of practice that includes medical, home, and community settings working with individuals, groups, and populations across the lifespan, occupational therapy practitioners are highly skilled in designing interventions that weave context, meaning, purpose, and consideration of individual clients' strengths and abilities. However, novice occupational therapy practitioners and students tend to struggle to clearly define and articulate occupational therapy's seemingly simple, yet complex role (Karp, 2020; Mulligan et al., 2014). More so, students and novice practitioners have difficulty applying theories of occupation as part of the decision-

making process (Schell, 2019), which becomes increasingly apparent when expert practitioners and clinical educators are unable to describe the complex thought processes for their own clinical reasoning (Unsworth & Baker, 2016). Even more difficult is the ability to consistently observe and measure how interventions are designed and delivered in a variety of occupational therapy settings (Jewell & Pickens, 2017). Occupational therapy students report a lack of observed occupation-centered interventions in clinical practice (Jewell et al., 2019; Smallfield & Karges, 2009) and difficulty with applying the conceptual core constructs of occupational therapy into clinical practice (Ashby & Chandler, 2010; Frigo et al., 2019; Main et al., 2021; Vermaak & Mariette, 2016). The dearth of opportunity to apply theoretical knowledge to clinical practice may inhibit students' ability to understand the intricacies of occupation-centered practice thus hindering professional reasoning and communication (Jewell, Griswold, et al., 2021; Vroman et al., 2010). However, the Occupation-Centered Intervention Assessment (OCIA) has shown preliminary promise as a tool for occupational therapy fieldwork students to improve understanding and implementation of occupation-centered practice and develop professional reasoning as students transition from fieldwork to entry-level practice (Frigo et al., 2019; Jewell, Griswold, et al., 2021; Main et al., 2021).

The OCIA is a tool designed to capture and rank occupational therapy interventions from an occupation-centered lens to enhance professional reasoning (Jewell, Wienkes, & Pickens, 2021). An occupation-centered approach includes careful examination of the client's preferences and unique goals, use of occupation as a therapeutic medium and/or end goal, and careful consideration of the client's home and community contextual and environmental factors that influence their occupational performance (Jewell et al., 2016; Jewell & Pickens, 2017). The tool's foundational framework is based on the Occupational Therapy Intervention Process Model, which asserts occupation positively influences health and well-being and promotes a top-down approach to clinical practice (Fisher, 2009). The primary purpose of the OCIA is for student and practitioner use as a reflection tool for the occupational therapy process to improve professional reasoning (Frigo et al., 2019; Main et al., 2021; Jewell, Griswold, et al., 2021).

The OCIA includes three continua that assess the contextual influence, occupational relevance, and personal meaning of individual occupational therapy interventions. Each continuum includes ranks 1-5 with associated descriptions of practice. Higher total scores align with an occupation-centered approach of therapeutic intervention. The personal relevance continuum assesses the use of collaboration between practitioner and client, client choice, and personal meaning and relevance of an intervention. The second continuum, contextual relevance, examines how closely the occupational therapy practitioner and client collaborate to use naturalistic tools and materials during the intervention and examines the consideration of contextual factors (e.g., time of day that the intervention occurs). The third continuum, occupational relevance, ranks the selected intervention modality considering the amount of client participation and use of occupation as a means. Interventions are ranked according to how much the direct use and focus of occupation is utilized during the intervention.

Initial psychometric testing established content validity, clinical utility, and inter-rater reliability for adult physical rehabilitation settings (Jewell & Pickens, 2017). An expert panel (n=4) and two mixed methods focus groups (n=26; n=5) established overall agreement for both content validity and clinical utility for adult physical rehabilitation clinical practice (Jewell & Pickens, 2017). When investigating inter-rater reliability, Jewell and colleagues (2017) analyzed the agreement of OCIA scores of standardized occupational therapy interventions captured by videos. Although a small sample size (n=19), the OCIA demonstrated acceptable inter-rater reliability ($\alpha=0.756$). The personal relevance continuum was $\alpha=0.729$, the contextual relevance continuum was $\alpha=.683$, and the occupational relevance continuum was $\alpha=.769$. As the contextual relevance continuum did not indicate acceptable inter-rater reliability, the author updated the OCIA schematic and descriptions of the contextual relevance to improve the inter-rater reliability of the OCIA.

Recent additional psychometric testing reported the OCIA demonstrated good internal validity and test reliability and discriminated reasonable levels of occupation-centered qualities of clinical practice, with the exception of observation of personal relevance (Jewell, Grajo, et al., 2021). The OCIA was found to have adequate utility in a variety of settings including pediatrics (Hinkley et al., 2021) and mental health (Wienkes et al., 2021); however, usefulness depends on both the user experience level and influence of common models of practice within the given setting. Additionally, the OCIA demonstrated good utility for students on both level I and level II fieldwork placements as it can facilitate professional reasoning by bridging theoretical concepts learned in the classroom to clinical implementation of occupation-centered practice (Frigo et al., 2019; Main et al., 2021).

Due to an addition of a contextual relevance level (i.e., from 3 to 4 levels), improved descriptions of the contextual relevance continua and levels, the need for a larger sample size, and promising findings for students' use of the OCIA to develop professional reasoning, an updated OCIA inter-rater reliability study with student raters was warranted. The purpose of this study was to determine the inter-rater reliability of the newest OCIA version with an increased sample size for occupational therapy student raters. Specifically, the research question was: What is the inter-rater reliability of the OCIA for observation and rating of adult physical rehabilitation occupational therapy interventions by occupational therapy students?

Method

The study used a methodological approach to examine inter-rater reliability of the OCIA among first year occupational therapy clinical doctorate students. Portney (2020) defined methodological research as one that examines outcome measurement tools to determine the psychometric properties, including inter-reliability. The study received Institutional Review Board approval.

Participants

The participants were a convenience sample of 113 first semester, entry-level doctoral occupational therapy students enrolled in a course, titled Occupations and Occupational Therapy, at a midwestern university located in the United States. The course is an introductory course that promotes understanding of the history and philosophical base of the profession, the scope and domain of occupational therapy practice nationally and globally, and various practice trends and theoretical models of practice. The occupational therapy program offers a traditional on-campus and a hybrid pathway delivery format, and all pathways were included in the study. Student raters were used in this study because the OCIA is most appropriate for use with occupational therapy students (Hinkley et al., 2021; Wienkes, et al., 2021) and can promote the development of professional reasoning (Jewell, Griswold, et al., 2021).

Procedure

Training for OCIA use was incorporated into a learning activity embedded in the Occupations and Occupational Therapy course. All students were expected to complete the training and assignment but could opt out of research participation. Of the 113 students, two participant assignments were excluded due to incomplete data, resulting in a final sample of 111 students.

The developer of the OCIA provided a one-hour instruction about the OCIA. The three objectives of the training included: 1) understanding the importance of using and developing occupation-based and/or occupation-focused interventions; 2) demonstrating use of the OCIA to score occupational therapy interventions; and 3) developing and using observation skills to score interventions through an occupational lens. In addition to lecture-based content, the students observed four pre-recorded occupational therapy interventions, practiced scoring the OCIA, and were given feedback on the scoring. On-campus students were present for the synchronous, live training, while hybrid students watched the same recorded training asynchronously online.

Students were given an educational assignment to watch five videos from the International Clinical Educators, Inc. (International Clinical Educators, 2018) video library after completion of the OCIA training. All videos included occupational therapy interventions with adults and older adults with various physical rehabilitation needs in a variety of clinical settings. The videos ranged in length from 2 to 6 minutes and each video included a single occupational therapy intervention. Students were instructed to watch each video twice, read the clinical scenario, and score each intervention using the OCIA. Both the course instructor and developer of the OCIA instructed the students to complete the assignment independently. See Figure 1 for an excerpt from the assignment.

Figure 1

Excerpt from Individual Assignment

Please read the case description, watch the video twice, and then write in your scores for each continua of the OCIA. You may use the OCIA and your notes to help with scoring. This assignment must be done independently and you may **not** discuss your scores with anyone.

<http://www.icelearningcenter.com/ice-video-library/> When you finish, please upload your assignment to the dropbox.

Click "Log In"
 Select "masked"
 Password = masked
 Select the videos under ICE Library

Video #	Video Location	Video Title	Start/Stop	Description	OCIA Scores
1	Setting: Acute Care (second page)	Self-Care: Bedside Grooming & Hygiene in Acute Care	Entire Video	Mary is a 65 y/o woman who lives with her husband in a one-story ranch house outside of Portland, Oregon. Prior to her stroke, she was independent in <u>all</u> of her self-cares, IADLs, enjoyed volunteering at her church, and staying active and watching her grandchildren. Both Mary and her family members would love to see Mary return home and be able to care for herself again. Currently, Mary is at St. Vincent's Hospital and is working with the OT on brushing her teeth. Although typically Mary would brush her teeth after her morning cup of coffee, the OT session is 2:00 p.m. At home, Mary would use a toothbrush, toothpaste, cup, washcloth, and stand at the bathroom sink to brush her teeth.	Personal _____ Contextual _____ Occupational _____

Analysis

The researchers utilized Statistical Package for the Social Sciences (SPSS version 22) to complete the data analysis (IBM Corp, 2013). Krippendorff's alpha measured the agreement among raters for the personal relevance, occupational relevance, contextual relevance, and total score of the OCIA. Krippendorff's alpha is the best fit for judgment-based data, allows for any two or more raters, incomplete data, and does not require a specific minimum number of scores (Hayes & Krippendorff, 2007). The second and fourth authors entered each participant's scores into SPSS and ran four syntaxes for the personal relevance, contextual relevance, occupational relevance, and total score.

Findings

The researchers calculated Krippendorff's alpha for the overall OCIA score and each continua for all five videos. Overall, Krippendorff's alpha indicated good agreement ($\alpha = 0.856$) for the total OCIA scores. When examining the individual continua, the occupational relevance ($\alpha = .809$) and contextual relevance ($\alpha = .835$) had good agreement, while the personal relevance ($\alpha = .705$) had adequate agreement. The personal relevance fell into adequate agreement, while the remaining scores indicated good agreement (Hayes & Krippendorff, 2007).

Discussion

The purpose of this study was to determine the current inter-rater reliability of the OCIA after updated contextual relevance training and manual revisions. Overall inter-rater reliability scores increased compared to previous psychometric testing. As expected with the revision in scoring criteria, the contextual relevance continua increased the most from $\alpha=0.683$ to $\alpha=0.835$ (Jewell & Pickens, 2017). Utilization of the Occupational Therapy Practice Framework: Domain and Process (3rd ed.; American Occupational Therapy Association, 2014) definitions of environment and context clarified scoring criteria which eased use of the tool for students.

As there were only minimal changes to the personal relevance scoring criteria, the OCIA was not expected to have a significant change with the agreement among student raters. The alpha measured for the current study was .704. Previous inter-rater reliability testing showed an alpha value of .729 (Jewell & Pickens, 2017). Although a small change, the category descriptor of adequate agreement did not change. The personal relevance continuum intends to capture the meaning and purpose of provided interventions, or the alignment with tenets of client-centered practice (Jewell et al., 2016). It is expected that the personal relevance continua will have the lowest level of agreement among raters, especially with observation-based ratings. This is because it is difficult to interpret and measure how meaningful or client-centered an intervention may be to a client through video observation. Although the course instructor provided a case scenario with a brief occupational profile about each recorded intervention, observing the meaning and purpose of an occupational therapy intervention remains difficult to observe in a video. Only the client is expected to be a true expert on themselves and are the best informant on what level of meaning and purpose are held in an occupation (Cameron & McColl, 2015).

The occupational relevance continua inter-rater reliability score increased slightly from $\alpha=.769$ in the initial testing to $\alpha=.809$ in the current testing. This was an unexpected finding to see improvement in the inter-rater reliability score, as the levels and descriptions remained the same as in previous studies. The improvements of descriptions and instructions to score the contextual relevance continuum may have helped clarify constructs about the construct of occupation, leading to a small improvement in the occupational relevance scoring as well.

This study utilized first-year, first-semester occupational therapy students enrolled in an entry-level doctoral program. As the students in this study had yet to learn the occupation-focused theories and theoretical constructs or take a course about adult physical rehabilitation, it is expected that occupational therapy students in Level II fieldwork, novice practitioners, and experienced practitioners may demonstrate increased professional reasoning and may have higher inter-rater reliability scores than first year entry-level occupational therapy students. Future research should include skilled practitioners and occupational therapy students completing Level II fieldwork or a doctoral capstone experience to investigate changes of inter-rater reliability.

Additionally, researchers expected the personal relevance continuum scores to be lower than the other continua due to the difficulty in observing the meaning and purpose of an intervention. Future studies should include asking the occupational therapy practitioner or client to rate or explain their rationale for designing specific interventions, especially as it relates to client-centered practice. Finally, additional testing to examine if the OCIA is effective for student learning purposes, such as intervention design, discharge planning, or confidence and competence for experiential learning (e.g., fieldwork and capstone experiences) is warranted.

The results of this study impact occupational therapy practice and education by demonstrating good inter-rater reliability among occupational therapy students' use of the OCIA to measure adult physical rehabilitation. Thus, the OCIA can be a tool used during didactic coursework to develop professional reasoning for future experiential learning and clinical practice. Use of the OCIA may enhance understanding and application of the occupational lens necessary to meet current occupational therapy standards of practice.

Conclusion

With adequate OCIA training, students and novice raters can be expected to observe and consistently score occupational therapy interventions through an occupational lens for adults with physical rehabilitation needs. Additionally, the present findings suggest researchers can confidently observe, describe, and rate occupational therapy interventions using the OCIA. Researchers may choose to objectively capture and rate interventions that are client-centered, ecologically valid, and occupationally relevant.

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