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Abstract

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Keywords

Fieldwork, level I, simulation, Simucase

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Evolution of Level I Fieldwork During an International Pandemic: Students' Perceptions of The Effectiveness of Virtual Simulation-Based Level I Fieldwork

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ABSTRACT

Fieldwork education is an essential component of occupational therapy (OT) curriculum; yet national shortages and the COVID-19 pandemic have affected fieldwork availability. To combat the shortage, some academic programs implemented simulation-based Level I fieldwork experiences. The objective of this research study was to compare the perceived knowledge, confidence, and attitude of OT students that completed a virtual simulation-based Level I fieldwork to those that completed a traditional Level I fieldwork. This study involved a sample of 26 doctorate of OT students that completed a traditional or virtual simulation-based Level I fieldwork. Students completed pre-and-post fieldwork surveys regarding their perceived knowledge, confidence, and attitude. Mann Whitney and Wilcoxin signed rank tests were used for comparative analysis. There was no statistically significant difference in knowledge or confidence between the two groups (p = .734, p = .303). Students that completed a virtual simulation-based fieldwork experienced increased attitude (p = .021) and both groups experienced an increase in perceived knowledge (p = .012, p = .003) following their fieldwork experience. This study adds to the growing body of knowledge regarding the utilization of simulations in OT curricula and proposes an alternative Level I fieldwork model to assist with the national shortage of fieldwork availability.

Literature Review

Level I Fieldwork

Occupational therapy (OT) students are required to complete Level I fieldwork experiences as part of the curriculum. The Accreditation Council for Occupational Therapy Education (ACOTE) defines Level I fieldwork as an essential component to OT curriculum stating it fosters students' clinical reasoning, professionalism, competence, and reflective practice (Accreditation Council for Occupational Therapy Education. [ACOTE], 2018). ACOTE states that "the goal of Level I fieldwork is to introduce students to fieldwork, apply knowledge to practice, and develop understanding of the needs of clients" (ACOTE, 2018, p. 41).

Fieldwork Shortage

Despite the importance of Level I fieldwork, a shortage of fieldwork placements has been reported for many years across the United States (Mattila et al., 2020; Ryan et al., 2018; Schafer-Clay, 2019). These shortages are due to increased caseloads, limited staffing, change in reimbursement guidelines, and increased competition for fieldwork sites among a growing number of academic programs (Bethea et al., 2014; Quail et al., 2016). The COVID-19 pandemic exacerbated the existing fieldwork shortage (Mattila et al., 2020). Dudzinsk and Samson (2020) reported that through the COVID-19 pandemic, restrictions were placed on fieldwork rotations as hospitals and skilled nursing facilities sought to control patient exposure to the virus. School closures, appointment cancellations, and stay-at-home orders led many outpatient and pediatric clinics to conduct telehealth sessions in lieu of in-person interventions (Dudzinsk & Samson, 2020). Additionally, Robinson et al. (2021) reported that in order to follow social distancing guidelines and reduce contact in the hospitals, many fieldwork programs were paused at clinical sites, with 58% of 797 OT students reporting a canceled fieldwork in March and April of 2020 (American Occupational Therapy Association [AOTA], 2020). Many students worried that limited fieldwork availability would delay their graduation, while fieldwork coordinators across the United States struggled to find placements for students (Dudzinsk & Samson, 2020).

Between the scarce availability of fieldwork sites and new restrictions implemented by fieldwork sites due to the COVID-19 pandemic, academic institutions began to seriously consider the use of simulations and virtual environments as an alternative to supervision by a fieldwork educator in a practice environment (Mattila et al., 2020). In 2018, ACOTE published the current set of accreditation standards, including standard C.1.9., which outlines five different options to satisfy the Level I fieldwork requirement - simulated environments, standardized patients, faculty practice, faculty-led site visits, and supervision by a fieldwork educator in a practice environment (ACOTE, 2018). ACOTE defined virtual environments as "simulated, augmented reality, or real-world environments, transmitted through information and communication technologies, in real-time, near-time, or store-and-forward/asynchronous methods" (ACOTE, 2018, p. 54). This change in standards was in part a result of an ad hoc committee formed by AOTA

to address the national fieldwork shortage (AOTA, 2017). This committee made recommendations that included the use of simulations, which have become increasingly more common in healthcare education (Bennett et al., 2017; Bethea et al., 2014; Bracq et al., 2019; Evans & Taubert, 2019; Grant et al., 2021; Reichl et al., 2019)

Use of Simulations

The perceptions of both faculty (Bethea et al., 2014; McGee, 2020) and students (Gibbs et al., 2017; McGee et al., 2016; Reed, 2016; Williams et al., 2010) on various types of simulation use in OT and other entry level healthcare programs have been previously examined. A survey regarding the benefits and challenges of simulated educational experiences revealed that 71% of OT assistant (OTA) and OT entry-level programs indicated using simulation in their curriculum (Bethea et al., 2014). Faculty members reported simulation was an effective evaluation method of student performance - allowing for immediate feedback on decision making and a low-risk environment for students to practice clinical skills (Bethea et al., 2014; McGee, 2020). Occupational therapy programs further identified benefits of incorporating simulation in curricula, such as development of clinical reasoning, hands-on practice in intervention and treatment planning, and increased skills in communication, problem-solving, and decision making (Bethea et al., 2014).

One type of simulation used within OT curriculums are video simulations. Murphy and Stav (2018) examined the impact of such simulations. The study utilized comprehensive case study videos from the International Clinical Educators, Inc. (ICE) Learning Center to determine the effect of online video cases on clinical skill development in OT students compared to students who used text-based cases. The Health Sciences Reasoning Test (HSRT), a multiple-choice test designed to assess clinical-reasoning and decision-making process (Insight Assessment, 2014), was given as a pre- and post-test survey for the students. The survey results showed significant improvement in the overall HSRT scores for students utilizing video case studies (p < .001), but there was no significant difference in overall scores between groups (p = .09). The study also found that students who completed the ICE videos had significantly greater improvement in inductive reasoning skills (p = .03).

Another type of simulation utilized within OT programs is virtual simulations. Cobbett and Snelgrove-Clark (2016) compared perceived levels of knowledge, anxiety, and confidence of nursing students before and after engaging in a virtual simulation compared to face-to-face high-fidelity clinical simulations (n = 56) for two scenarios. There was no statistically significant difference in scores for virtual or face-to-face simulations suggesting that the efficacy of virtual simulation for nursing students was comparable to that of face-to-face simulations.

Simucase

While there are many types of online simulation experiences and platforms, one simulation program utilized by OT, speech-language pathology, audiology, and physical therapy is Simucase. Simucase is a computer-based simulation platform that allows students to interact with virtual patients through video recordings and conduct

assessments, make diagnoses, and provide recommendations (Simucase, 2021). Mattila et al. (2020) investigated the efficacy of Simucase within an OT program during their third semester of the professional program. Students (n = 27-29) answered an 18-item self-reflection questionnaire to rate their satisfaction and confidence before and after participating in the simulation experiences. The students also completed an additional self-reflection on their experience with the Simucase program. The study found a significant increase in two out of three areas post-simulation, specifically in the Debrief and Reflection scores (z = -2.67, p = .008, r = .63) and Clinical Reasoning scores (z = -2.023, p = .043, r = .64) (Mattila et al., 2020). The study suggested the development of clinical reasoning, confidence, and perceived readiness for higher-level fieldwork in OT students could be achieved with Simucase when coupled with debriefing and reflection.

Various simulation platforms have been used in OT curricula to enhance or prepare students for traditional fieldwork (Mattila et al., 2020; Reed, 2016; Williams et al., 2010). Despite the prevalence of the use of simulation, evidence is limited on the perception of students that completed a virtual simulation-based fieldwork as compared to those that completed a traditional Level I fieldwork. The objective of this research study was to analyze the impact of a virtual simulation-based Level I fieldwork experience on OT students' knowledge, confidence, and attitudes as compared to students that completed traditional Level I fieldwork.

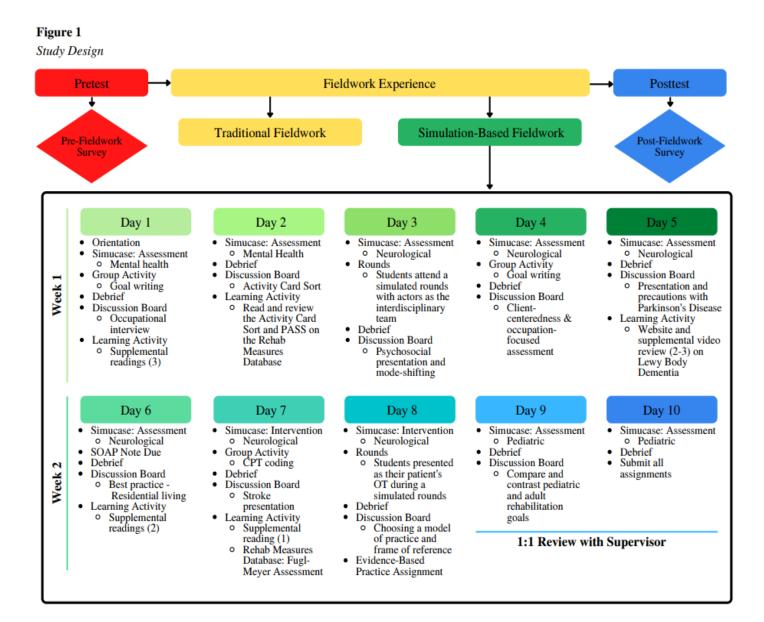
Methods

Research Design

This study was a retrospective cohort design that involved a purposive sample of 26 OT students that completed either a traditional or virtual simulation-based Level I fieldwork. Students completed pre-and-post surveys as part of their fieldwork course assignments, which were used for retrospective analysis. The data used for analyses were deidentified and the study was approved by a university Institutional Review Board as a quality improvement project.

Participants

Participants of this study included 26 doctorate of OT students from a private university in the Midwestern United States. All participants were first-year students enrolled in a Level I fieldwork course in the summer of 2020. All students were assigned to traditional Level I fieldwork experiences prior to the start of the course - with approximately half of the students experiencing site cancellations due to the COVID-19 pandemic. Students with canceled sites were reassigned to a virtual simulation-based Level I fieldwork experience using the high-fidelity virtual simulation program, Simucase, in conjunction with faculty-led debrief sessions and supplementary assignments. Based on availability of fieldwork assignments, students were split into a traditional fieldwork group and a virtual simulation-based fieldwork group.



Procedures

Traditional Level I fieldwork experiences were two weeks full-time. Students were supervised by designated fieldwork supervisors, most of whom were practicing OTs or OTAs. Supervisors were educated on the curriculum and fieldwork program design to best support the students during their fieldwork experience. Fieldwork supervisors were expected to provide directed observations opportunities and allow students to participate in selected aspects of the OT process as appropriate for their site and caseload. Students had four associated assignments that were completed throughout the two weeks and submitted to the course instructor. These included assignments specific to reflection of professional behaviors, documentation, assessment, and evidence-based practice.

In order to create a virtual simulation-based Level I fieldwork experience that was comparable to the rigor of a traditional Level I fieldwork, a two-week full-time Level I experience was designed using Simucase. Simucase uses video case studies, assessments, and discussions to engage students in real-life clinical practice (Ondo et al., 2019). In addition to the use of Simucase, the virtual simulation-based Level I fieldwork also utilized similar fieldwork objectives, comparable daily time requirements, daily mentorship and debriefing as a means of providing students with experiences comparable in rigor.

Through the asynchronous virtual simulation videos and activities, Simucase can measure student skills and enhance clinical competency. Simucase allows for the repeated practice of clinical skills in a safe environment with built-in feedback (Deluliis et al., 2021). Additionally, students were assigned in groups of three or four to an OT supervisor that was a community partner of the affiliated university. A pre-brief was held with the simulation-based students to review expectations, assignments, and use of the Simucase platform. Students completed one to two identified Simucase cases per day and were required to meet a 90% competency threshold, based on choices made in the simulation and calculated by the Simucase program to proceed to the next lesson. Outside of Simucase, students completed pre-identified learning activities (i.e. complete daily documentation for case, write short and long term goals, review supplemental learning resources related to case diagnosis or assessments, etc.), small group activities (i.e. participate in simulated interdisciplinary rounds, treatment planning, etc.), and discussion board posts to complement their simulation-based experience. The small groups also met with their supervisor daily for a debrief session to process the cases, activities, and support further learning (see Figure 1).

The learning objectives of both the traditional and simulation-based fieldwork experiences were comparable, with the supervisors using a modified version of the Philadelphia Region Fieldwork Consortium Level I Fieldwork Student Evaluation (2nd Edition). All students met one-on-one with their assigned supervisor for an individualized fieldwork evaluation of their performance at the end of the two weeks and completed pre-and-post surveys as part of the affiliated course expectations. The course instructor facilitated survey completion from both samples. Students were not given any points or associated credit toward their course grade for completion of the surveys.

Measures

To account for the varied Level I fieldwork experiences, the course instructor developed a pre and post electronic survey to measure change in three areas including perceived knowledge of fieldwork expectations and OT specific assessments and interventions (four questions), confidence in accomplishing the fieldwork objective (nine questions), and attitude toward use of simulations and fieldwork (two questions) in students before and after their Level I fieldwork experience. The course instructor asked students to complete the pre and post survey and informed them that it was to better understand their perceptions of the varied fieldwork experiences and make curriculum changes as needed for future cohorts. The survey was created by four content experts in education, survey design, and OT fieldwork to support content and criterion validity. All question responses were ranked on a 5-Point Likert Scale, a psychometric instrument that allowed researchers to measure and quantify the perceptions of study respondents (Joshi et al., 2015). Questions within each of the three constructs were derived from the associated university's Level I fieldwork objectives. Researchers allocated more questions to the confidence construct, to align with the Level I fieldwork objectives which prioritize student confidence over knowledge and attitude. Prior to distribution, the survey was pilot tested by the content experts and a group of faculty and OTD students not affiliated with the fieldwork experience. Minor modifications to enhance clarity of the questions were made and the final survey was distributed to students enrolled in the course via SurveyMonkey both before and after their fieldwork experience and monitored regularly by the course instructor.

Examples of survey questions include:

- How would you rate your current knowledge of the roles expected of a fieldwork I student? (5-Extremely knowledgeable, 4-very knowledgeable, 3-somewhat knowledgeable, 2- not so knowledgeable, 1-not at all knowledgeable)
- How would you rate your current confidence of completing a patient chart review? (5-Extremely confident, 4-very confident, 3-somewhat confident, 2- not so confident, 1-not at all confident)
- What is your current attitude regarding the use of a virtual simulation fieldwork experience? (5-Highly satisfied, 4-satisfied, 3-neither satisfied nor dissatisfied, 2-dissatisfied, 1-very dissatisfied)

The survey also gathered demographic information from students including age, experience in the healthcare field, experience with online simulation, and the type of fieldwork experience they were completing (traditional or simulation-based Level I). The survey provided an open-ended question for students to share any other comments, questions, or concerns regarding their Level I fieldwork experience. All students in the course were expected to complete the survey before and after their fieldwork experience.

Data Analysis

Pre-and-post survey data was analyzed using IBM SPSS Statistics (IBM, v22). All surveys were complete and descriptive statistics were obtained for demographic information including age, experience in the healthcare field, experience with online simulation, and the type of fieldwork experience they were completing. Non-parametric tests were used to compare ordinal outcome variables between the groups (n = 26). Researchers first used Wilcoxon signed rank tests to analyze the change in students' perceived knowledge, confidence, and attitude before and after the fieldwork experience; followed by Mann-Whitney to compare the difference in perceived change of knowledge, confidence, and attitude between the students that completed traditional fieldwork and those that completed a simulation-based fieldwork. Significance was set at p < 0.05.

Results

A total of 26 first-year OTD students participated in the study. All students (100%) were females aged 18-34 (µ =23.05). Of the 26 participants, 16 (64.5%) had worked in the healthcare field (i.e. rehabilitation aide, patient care technician, therapy assistant, etc.) prior to their fieldwork experience. Nine students (34.6%) indicated participating in traditional fieldwork and 17 (65.4%) indicated participating in simulation-based fieldwork. Group sizes were dissimilar due to the natural assignment of groups based on fieldwork cancellations. Seventeen of the students in the study had their traditional fieldwork placement canceled due to the COVID-19 pandemic and nine students were still able to attend their assigned sites. Data collected from the pre-survey and postsurvey results showed an identifiable change in both the traditional and simulationbased groups as illustrated in Table 1. The traditional group showed statistically significant overall improvement in knowledge (p = .012) and confidence (p = .033) as indicated by Wilcoxon signed-rank tests. There was no significant change in attitude in the traditional group (p = .187). Meanwhile, the simulation-based group showed statistically significant improvement in knowledge (p = .003) and attitude (p = .019) with no significant change in confidence (p = .155).

Table 1

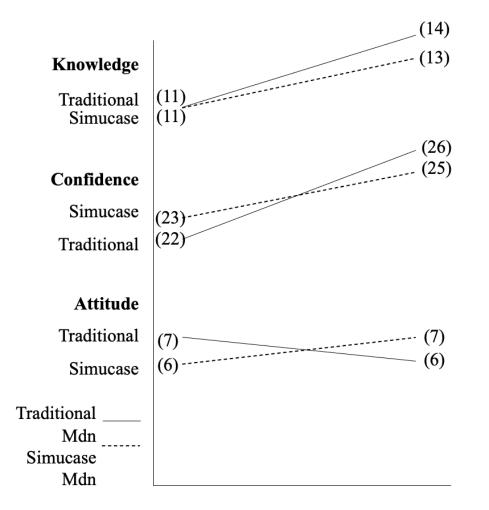
	Traditional FW (n = 9)			Simucase FW (n = 17)		
	Pre- Median	Post- Median	p-value	Pre- Median	Post- Median	p-value
Knowledge	11	14	.012	11	13	.003
Confidence	22	26	.033	23	25	.155
Attitude	7	6	.187	6	7	.019

Perceived Level of Knowledge, Confidence, and Attitude Before and After the Fieldwork

Note: This table illustrates the pre-and-post median scores for perceived knowledge, confidence, and attitude regarding fieldwork for both the traditional and simulation-based groups. The p-values for the difference in pre- and post-survey scores were calculated using the Wilcoxon signed-rank test. FW = fieldwork.

Figure 2

Change in Level of Knowledge, Confidence, and Attitude



Note: This figure illustrates increasing trends of perceived level of knowledge, confidence, and attitude after the fieldwork in traditional and simulation-based groups, except for the attitude of the traditional group.

Table 2

Post Score and Difference in Scores Comparison

	Post-Score			Difference Score Comparison			
	(Traditional vs Simucase)			(Post-Median – Pre-Median)			
	Median	U	p-value	Median	U	p-value	
Knowledge	14	63.000	.434	2	70.500	.743	
Confidence	25	65.000	.531	4	57.500	.303	
Attitude	7	50.000	.276	-1.5	29.000	.021	

Note: This table illustrates the difference in the post-survey scores between the traditional and simulation-based groups. The median for knowledge, confidence, and attitude are provided along with the Mann-Whitney score and the p-value. The table also illustrates the difference score comparison between the two groups measured by post median - pre median scores for each of the three domains. The Mann-Whitney (U) and p-values are also provided.

The comparison of post-survey scores and the change in scores between the traditional and simulation-based groups is illustrated in Table 2. The only statistically significant value between the two groups was the change in attitude pre and post fieldwork (p =.021).

Discussion

This study aimed to analyze OT students' perception of simulation-based Level I fieldwork experiences compared to students that completed a traditional Level I fieldwork experience. Evidence of the effectiveness of simulation-based fieldwork is increasingly relevant to OT curricula due to existing fieldwork shortages and pandemic-related fieldwork cancellations.

Results of this study found no statistical difference in perceived knowledge or confidence between the traditional and simulation-based groups. These findings are a positive indicator that simulation-based fieldwork may be comparable to a traditional Level I fieldwork and can be a viable option to address the national fieldwork shortage and pandemic related fieldwork implications. The repetitive practice and feedback built into the Simucase program can provide students with the necessary confidence and knowledge of clinical skills that is comparable to their peers completing traditional fieldwork. Students that complete traditional fieldwork also experienced a similar increase in confidence and knowledge likely due to the hands-on practice and feedback they received from their fieldwork educators (Haynes, 2011).

While both groups experienced an increase in their perceived knowledge following their Level I fieldwork experience, this study found no significant difference in the rate of change in between the two groups. It is important to highlight that when analyzed independently, the simulation-based group had a statistically significant increase in perceived knowledge and attitude. Regarding increased knowledge, some students in this group recognized simulation-based Level I fieldwork as "helpful for working through cases at a low stake space" and "...helpful in preparing for the board exam." The increase in post-perceived knowledge of students is consistent with previous simulationbased study outcomes, which also found an increase in perceived knowledge after use of simulation-based learning (Cobbett & Snelgrove-Clark, 2016; Gibbs et al., 2017; Quail et al., 2016). The increase in knowledge found in the simulation-based Level I students in this study may be in part due to the structured daily debriefs that were part of the experience. Research shows that debrief sessions promote self-reflection and critical thinking with students viewing these sessions as a crucial part of the simulation experience (Clinard & Dudding, 2019; Deluliis et al., 2021; Mattila et al., 2020; Reed, 2020). Previous research has identified debriefing sessions as the "core" (Mattila et al., 2020), a key strength (Clinard & Dudding, 2019), and a chance for reflective learning (Deluliis et al., 2021). Therefore, the combination of these learning modalities likely resulted in a statistically significant increase in students' perceived knowledge after completing a simulation-based Level I fieldwork.

The second outcome measured throughout this study was the students' perceived confidence following their Level I fieldwork experiences. The simulation-based group did have a significant increase in perceived confidence after completing Level I fieldwork. However, there was also no significant difference in the post-confidence scores or change in confidence scores between the two groups, demonstrating that the two are comparable in the domain of confidence. Students participating in the simulation-based fieldwork expressed frustration over their Level I fieldwork experience due to lack of hands-on patient interactions and wanting more time for debriefing and additional simulations. These feelings of frustration may explain why the simulation-based group did not have a statistically significant increase in confidence (p = .155) while the traditional group (p = .033) did. However, despite this difference, there was no significant difference between change in confidence between the two groups. Additionally, it is important to consider that the students may have felt disappointed and less confident due to the sudden change in their fieldwork and feelings of missing out while other students in their cohort participated in a traditional fieldwork. It is likely that the simulation-based fieldwork group showed less increase in confidence due to comparing their experience to that of the traditional group. Furthermore, due to time restrictions and consideration of current skill levels, specific cases were selected for the simulationbased fieldwork experience group and evaluation-based cases were used most frequently. This emphasis on the evaluation component of the OT process was different

from traditional Level I students, of whom likely experienced all components of the OT process more frequently in a traditional clinic setting. These findings are similar to Smyers (2019) who found mixed results when comparing confidence level of speech language pathology students before and after the Simucase experiences. The results indicated increased confidence in utilization of the program and providing treatments, but showed decrease in confidence in data collection and clinical decision making (Smyers, 2019) - aligning with the current study's findings that students in the simulation-based group did not feel confident in all areas of the OT process.

Researchers also compared the perceived attitude in the two groups, with the simulation-based group showing a statistically significant increase in perceived attitude. The traditional fieldwork group, however, did not. It was expected that the traditional group would not have an increased positive attitude toward simulation, as they did not complete simulated fieldwork. However, the traditional group also did not report an increased positive attitude toward their Level I fieldwork experience, while the simulation-based group did. This discrepancy in attitude scores may be due to changes in processes or policies associated with the surging COVID-19 pandemic during this time. Many in-person fieldwork sites required students to wear full personal protective equipment (PPE) while many others utilized telehealth to deliver OT services. Caseloads, schedules, and expectations were also modified to meet the new demands on healthcare at this time. The students placed in the traditional sites may have been disappointed by these unexpected changes to their fieldwork sites; therefore, affecting their attitude. Conversely, many students participating in the simulation-based fieldwork reported disappointment in their fieldwork initially. Students stated, "I am sad that I will not be going to my original fieldwork site," "It is disappointing to have that experience taken away and to spend more time looking at a computer," and "I am concerned that this won't be comparable to the hands-on experience of a traditional setting." Despite these initial responses, the simulation-based fieldwork students expressed satisfaction after the experience stating, "it is a solid alternative to in-person fieldwork" and "I feel that Simucase has been helpful for working through cases at a low stakes pace". This is depicted in the survey results as the simulation-based group started with a lower presurvey attitude score toward fieldwork (Mdn = 6) than the traditional group (Mdn = 7), which allowed for greater opportunity for the students to experience a positive change in attitude toward their experience.

Results of this study suggest that a simulation-based fieldwork, using a combination of Simucase and supplemental learning opportunities and debrief sessions, may be comparable to traditional in-person fieldwork regarding students' perceptions. Creating additional options for the development and implementation of Level I fieldwork may help address the national shortage of fieldwork experiences and provide opportunities for additional curriculum development in OT programs. Further considerations to the impact of COVID-19 on the andragogy and instructional technology considerations of simulation-based fieldwork is warranted as this simulation-based fieldwork was implemented during an unprecedented time of a national health crisis that impacted many aspects of OT education. Additional reflection of the feedback provided by students that completed the simulation-based Level I is also needed to further refine the

experience. Issues including relevance of the topics, structure of discussion, and lack of hands-on experience should be explored and additional intentional learning experiences should be considered. Future research is also warranted to evaluate the impact of a simulation-based Level I fieldwork on Level II fieldwork performance and student learning and clinical competency.

Limitations

There were several limitations to this study. One limitation of this study is the small, purposive sample and the limited diversity of gender and age. Additionally, this study sample was representative of one cohort of students from a private, academic medical institution in the Midwest and may or may not reflect the behavior and attitudes of other OT students in different geographical areas or types of institutions that limits the generalizability of these findings. Additionally, the two group sizes were not identical and may have influenced the statistical analysis and interpretation of results. The two groups also did not both receive the two types of fieldwork experiences potentially resulting in bias and limited comparison. Finally, this study evaluated students' perceptions of their knowledge, confidence, and attitudes and did not evaluate actual clinical performance skills as evaluated by fieldwork educators. It is recommended that future research explore this concept and the impact of simulation-based Level I fieldwork on Level II fieldwork performance and preparedness for the National Board for Certification in Occupational Therapy Exam.

Implications for Occupational Therapy Education

Simulation-based Level I fieldwork experiences can be a positive alternative to traditional Level I fieldwork experiences. This study specifically utilized Simucase, supplemental learning activities, and debrief sessions as a full-time two-week Level I fieldwork experience to adapt to limited fieldwork availability as a result of the COVID-19 pandemic. Student perceptions of the use of simulation-based Level I fieldwork were comparable to students' perceptions of traditional Level I fieldwork and imply that simulation-based fieldworks may be a viable option to address fieldwork availability challenges not only during a global pandemic but also to address long standing fieldwork availability shortages.

Conclusion

Results of this study explored students' perceptions of simulation-based Level I fieldwork in conjunction with debrief sessions and supplementary instruction. With this combination, simulation-based Level I fieldwork experiences may be comparable to a traditional Level I fieldwork experience in relation to students' perceived knowledge and confidence toward future OT practice. This study, therefore, offers a viable alternative to traditional Level I fieldwork experiences and presents as a tangible example of how OT programs were able to support their students and foster a dynamic learning experience amidst a global pandemic.

References

- Accreditation Council for Occupational Therapy Education. [ACOTE]. (2018). 2011 Accreditation Council for Occupational Therapy Education (ACOTE®) Standards and Interpretive Guide (effective July 31, 2018) June 2018 Interpretive Guide Version. Retrieved from: <u>https://acoteonline.org/wp-content/uploads/2020/10/</u> 2018-ACOTE-Standards.pdf
- American Occupational Therapy Association. (2017). *Residency for OT students considered by AOTA ad-hoc committee report.* <u>https://www.aota.org/~/media/Corporate/Files/EducationCareers/Educators/Field</u> <u>work/AOTA-Fieldwork/Residency-for-OTs-considered-by-AOTA-ad-hoc-</u> <u>committee-report.pdf</u>
- American Occupational Therapy Association (2020). COVID-19 and occupational therapy: How does your experience compare to national trends? https://www.aota.org/Practice/Health-Wellness/COVID19/Coronavirus-Survey-Results.aspx
- Bennett, S., Rodger, S., Fitzgerald, C., & Gibson, L. (2017). Simulation in occupational therapy curricula: A literature review. *Australian Occupational Therapy Journal*, 64, 317-327. <u>https://doi.org/10.1111/1440-1630.12372</u>
- Bethea, D. P., Castillo, D. C., & Harvison, N. (2014). Use of simulation in occupational therapy education: Way of the future? *American Journal of Occupational Therapy*, 68(2), S32-S39. <u>https://doi.org/10.5014/ajot.2014.012716</u>
- Bracq, M-S., Michinov, E., & Jannin, P. (2019). Virtual reality simulation in nontechnical skills training for healthcare professionals. *Journal of the Society for Simulation in Healthcare*, *14*(3), 188-194. <u>https://doi.org/10.1097/SIH.0000000000347</u>
- Clinard, E.S., & Dudding, C. C. (2019). Integrating simulations into communication sciences and disorders clinical curriculum: Impact of students' perceptions. *American Journal of Speech-Language Pathology, 28,* 136-147. <u>https://doi.org/10.1044/2018_AJSLP-18-0003</u>
- Cobbett, S., & Snelgrove-Clark, E. (2016). Virtual versus face-to-face clinical simulation in relation to student knowledge, anxiety, and self-confidence in maternalnewborn nursing: A randomized control trial. *Nurse Education Today, 45,* 179-184. <u>https://doi.org/10.1016/j.nedt.2016.08.004</u>
- Deluliis, E. D., Mattila, A., & Martin, R. M., (2021). Level I FW in a simulated environment: A blueprint on how to use Simucase. *Journal of Occupational Therapy Education*, 5(2), 1-22. <u>https://doi.org/10.26681/jote.2021.050215</u>
- Dudzinsk, K., & Samson, A. (2020). COVID-19 and the impact on OT and OTA fieldwork. Florida occupational therapy association. <u>https://www.flota.org/index.php?option=com_dailyplanetblog&view=entry&year=2</u> 020&month=08&day=19&id=45:covid-19-and-the-impact-on-ot-and-ota-fieldwork
- Evans, L., & Taubert, M. (2019). State of the science: the doll is dead: Simulation in palliative care education. *BMJ Supportive & Palliative Care*, *9*, 117-119.<u>https://doi.org/10.1136/bmjspcare-2018-001595</u>
- Gibbs, D. M., Dietrich, M., & Dagnan, E. (2017). Using high fidelity simulation to impact occupational therapy student knowledge, comfort, and confidence in acute care. *The Open Journal of Occupational Therapy, 5*(1). https://doi.org/10.15453/2168-6408.1225

- Grant, T., Thomas, Y., Gossman, P., & Berragan, L. (2021). The use of simulation in occupational therapy education: A scoping review. *Australian Occupational Therapy Journal, 68*(4), 345-356. <u>https://doi.org/10.1111/1440-1630.12726</u>
- Haynes, C. J. (2011). Active participation in fieldwork Level I: Fieldwork educator and student perceptions. *Occupational Therapy in Health Care,* 25(4), 257-269. https://doi.org/10.3109/07380577.2011.595477
- Insight Assessment. (2014). Health science reasoning test manual. California Academic Press.
- Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert scale: Explored and explained. *British Journal of Applied Science & Technology*, 7(4), 396. <u>https://doi.org/10.9734/BJAST/2015/14975</u>
- Mattila, A., Martin, R. M., & Deluliis, E. D., (2020). Simulated fieldwork: A virtual approach to clinical education. *Education Sciences*, *10*(10), 272. <u>https://doi.org/10.3390/educsci10100272</u>
- McGee, A., Denton, J., Rawson, A., & Jensen, L. (2016). Outcomes of simulation hospital experience for entry-level occupational therapy students. *American Journal of Occupational Therapy*, 70(4), 1-1. https://doi.org/10.5014/ajot.2016.70S1-PO4107
- McGee, E. (2020). Exploring occupational therapy faculty beliefs related to technology acceptance of high-fidelity simulation. *Walden Dissertations and Doctoral Studies*, 9406. <u>https://scholarworks.waldenu.edu/dissertations/9406</u>
- Murphy, L.F., & Stav, W.B. (2018). The impact of online video cases on clinical reasoning in occupational therapy education: A quantitative analysis. *Open Journal of Occupational Therapy*, 6(3). <u>https://doi.org/10.15453/2168-6408.1494</u>
- Ondo, K., Johnson, C. Jansen, L.J., Williams, S.L., & Pantalone, B. (2019). Simucase User Guide 4.0. <u>https://d1e47g7vecbcl4.cloudfront.net/pdf/ SC_1117_UserGuide_April_2020.pdf</u>
- Quail, M., Brundage, S. B., Spitalnick, J., Allen, P. J., & Beilby, J. (2016). Student self reported communication skills, knowledge and confidence across standardized patient, virtual and traditional clinical learning environments. *BMC medical Education*, 16(1), 73. <u>https://doi.org/10.1186/s12909-016-0577-5</u>
- Reed, H. (2016). Student responses to the use of simulation in combination with traditional Level I fieldwork. *American Journal of Occupational Therapy, 70*(4), 6912350020. <u>https://doi.org/10.5014/ajot.2016.70S1-PO1075</u>
- Reed, H. C. (2020). An introduction to clinical simulation (CS) for orofacial myologists: COVID-19's impact on clinical education. *International Journal of Orofacial Myology and Myofunctional Therapy, 46*(1), 48-58. <u>https://doi.org/10.52010/ijom.2020.46.1.5</u>
- Reichl, K., Baird, J.M., Chisholm, D., & Terhorst, L. (2019). Measuring and describing occupational therapists' perceptions of the impact of high-fidelity, high-technology simulation experiences on performance. *American Journal of Occupational Therapy*, 73(6), 7306205090–7306205098. <u>https://doi.org/10.5014/ajot.2019.034694</u>

- Robinson, M.R., Koverman, B., Becker, C., Ciancio, K.E., Fisher, G., & Saake, S. (2021). Lessons learned from the COVID-19 pandemic: Occupational therapy on the front line. *American Journal of Occupational Therapy*, *75*(2),7502090010. https://doi.org/10.5014/ajot.2021.047654
- Ryan, K., Beck, M., Ungaretta, L., Rooney, M., Dalomba, E., & Kahanov, L. (2018). Pennsylvania occupational therapy fieldwork educator practices and preferences in clinical education. *Open Journal of Occupational Therapy, 6*(1). <u>https://doi.org/10.15453/2168-6408.1362</u>
- Schafer-Clay, J.S. (2019). What stops some occupational therapy practitioners from providing fieldwork education?" (2019). *Occupational Therapy Doctorate Capstone Projects*, 49. <u>https://encompass.eku.edu/otdcapstones/49</u>
- Simucase. (2021). A personalized learning platform to help you succeed. https://www.simucase.com/
- Smyers, M. (2019). Examining the learning of students participating in an interactive simulated patient experience [Master's thesis, Illinois State University]. *ProQuest.* <u>https://www.proquest.com/openview/f2a01241019125e5650be582fb572d60/1?p</u> g-origsite=gscholar&cbl=18750&diss=y
- Williams, B., Brown, T., Scholes, R., French, J., & Archer, F. (2010). Can interdisciplinary clinical DVD simulations transform clinical fieldwork education for paramedic, occupational therapy, physiotherapy, and nursing students? *Journal* of Allied Health, 39(1), 3-10.