

EXAMPLE CAP

Session Title: CAP: The impact of online video cases on clinical reasoning in occupational therapy education: A quantitative analysis

Objectives

Critique the evidence provided by Stav and Murphy (2018) related to the use of video-based case studies paired with explicit teaching of clinical reasoning within occupational therapy curriculum.

Level Rationale (Intermediate)

Participants would benefit from having a working knowledge of clinical reasoning and didactic methods in order to gain the most benefit from this poster session.

CITATION AND DOI NUMBER (APA Format)

Murphy, L. F., & Stav, W. B. (2018). The impact of online video cases on clinical reasoning in occupational therapy education: A quantitative analysis. *The Open Journal of Occupational Therapy*, 6(3). <https://doi.org/10.15453/2168-6408.1494>

CLINICAL BOTTOM LINE

This nonrandomized controlled study compared the effects of using video-based and text-based case studies in a semester-long course on occupational therapy (OT) students' clinical reasoning skills. Educators can use the results of this study to build on previous evidence supporting the use of case-based learning within the classroom. Specifically, this study suggests that video-based case studies paired with explicit teaching on clinical reasoning styles promotes improved clinical reasoning skills in students as measured by the Health Sciences Reasoning Test (HSRT). However, it remains unclear to what extent video-based cases are more effective than text-based cases due to baseline differences between the control and intervention groups. It is also difficult to determine if improved HSRT scores were related to explicit teaching of clinical reasoning types, use of video-based cases, or the combination of both. Considering the results and limitations of the study, it is recommended that educators include video-based case studies within OT curricula in order to expose students to realistic, diverse, and complex clients and their contexts. Explicit teaching of clinical reasoning should accompany case-based learning in order to maximize student learning. Further research on students' perceptions of video-based cases and use of more rigorous design methods would improve the strength of these findings and implications for OT education.

RESEARCH OBJECTIVE(S), DESIGN TYPE, AND LEVEL OF EVIDENCE

Research objective: How does the use of video-based case studies affect the clinical reasoning skills of entry-level occupational therapy students in comparison to text-based cases? The study used a quasi-experimental design (control and experimental group, no randomization) with pretest and posttest measurements. The study is level II evidence.

PARTICIPANT SELECTION

A convenience sample was recruited from a single OT program. Students were in their second year and enrolled in a specific course within the program. The course content was not described beyond stating that the course required higher level critical thinking skills. The authors did not describe additional inclusion or exclusion criteria. The study was approved by the university Institutional Review Board. Students were not required to participate in the study and participation did not influence their grades. The authors did not state if informed consent was obtained.

INTERVENTION(S) AND CONTROL GROUPS

Control group: This group consisted of 31 students. All students were enrolled in the same semester-long OT course. The students completed three case-based assignments using written case studies from a textbook. These assignments had students answer questions about completing evaluation and treatment plans. The assignments were scaffolded, with first assignment completed in class, the second completed in groups outside of class, and the third completed individually outside of class. Isolated video clips were used in class by the instructor to illustrate specific teaching points. There was no explicit discussion of clinical reasoning.

Intervention group: This group consisted of 30 students who were enrolled in a separate section of the same semester-long OT course as the control group. The two sections were conducted one year apart (spring 2014 and spring 2015). This group completed three video-based case studies using online videos from the International Clinical Educators, Inc. (ICE) Learning Center. The course instructor explicitly described the types of clinical reasoning used in the videos. The same scaffolded assignment structure was used as the control group; however, the assignment differed in that students used the information from the video case study to complete an occupational profile, identify frames of reference, and describe how each type of clinical reasoning was applied. The students also completed a self-reflection activity.

OUTCOME MEASURES

The Health Science Reasoning Test (HSRT) is a multiple-choice test used for quantitative assessment of clinical reasoning skills. It provides an overall score as well as scores for the following types of reasoning: analysis, inference, evaluation, deduction, and induction. The authors stated that the HSRT has demonstrated good content validity, construct validity, and reliability but did not provide specific values. It was administered to all participants at the beginning (pretest) and end (posttest) of the semester.

RESULTS

The authors selected appropriate analysis methods based on study design. Paired t-tests were used to compare within-group HSRT pretest and posttest scores (overall, percentile rank, and each type of reasoning). Between-group comparisons were made using analysis of covariance (ANCOVA) to adjust for group differences in GPA. Overall scores on the HSRT increased for both groups from pretest to posttest; however, only the intervention group demonstrated statistically significant improvement (intervention $p < 0.001$; control $p = 0.17$). After adjusting for GPA, the intervention group demonstrated greater gains on inductive reasoning compared to the control group ($p = .03$). Despite reaching statistical significance, this result lacks clinical relevance

as changes in overall scores and other types of reasoning were not significantly different between the two groups ($p>0.05$). No dropouts were reported from pretest to posttest for either group.

LIMITATIONS

One limitation of the study is the use of a convenience sample which resulted in a lack of baseline equality between the groups for inductive reasoning on the HSRT; however, the other HSRT pre-test scores were not significantly different between groups. The authors controlled for initial group differences through use of ANCOVA during data analysis. The group size was appropriate to detect a medium effect size (0.57) based on a pilot study; however, it may not have been large enough to detect smaller changes. Additionally, the intervention period may have been too short to produce meaningful differences between the two groups. The study is also at risk of intervention bias due to co-intervention. The participants were taking other courses at the same time and the authors do not report if other curriculum or instructor changes were made that could have affected the study results. There is minimal risk of measurement bias as the HSRT is computer-based and was completed individually by each participant. The study did not report any dropouts. Statistics were reported appropriately in both written and table format. An appropriate significance level was set ($p<0.05$).

CONCLUSIONS

Use of video case studies with explicit discussion of clinical reasoning may promote greater gains in inductive reasoning skills compared to text-based studies. One possible explanation for this finding is that video case studies provide a more realistic picture of the client and context. Specifically, students must use observations from the videos to make decisions rather than being provided with explicit, written information on the client. Future research should address study limitations by using a randomized design over a longer time.