Learner Handover: How does it influence assessment?

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ABSTRACT

Introduction: Learner handover (LH) is the sharing of information about trainees between faculty supervisors. In a competency-based education model, LH should provide a scaffold to allow trainees to grow. However, the potential to bias future assessments has been raised as a concern, and one reason LH has not been widely implemented in North America. Psychology studies suggest that when prior performance information is provided to a rater, one of three possible results or “context effects” may occur: there may be bias toward the direction of the previous performance level (i.e., assimilation effect); bias away from the direction of the previous performance level (i.e., contrast effect), or no effect whatsoever (1). Assimilation effects are favored when the information was provided in an indirect manner, that is, from another source (2). This study aimed to determine whether LH, a form of indirect prior performance information, influenced assessment in the clinical context.

Methods: Faculty raters (n=42) were randomized to 1 of 3 groups. All raters viewed the same 6 simulated resident-patient encounter videos in the same order. In a counter-balanced design, each group received either positive (PLH), negative (NLH) or no LH/control (C) prior to each video then rated the performance using the Mini-CEX. The Mini-CEX includes seven 9-point rating scales to allow for assessment of several different competencies, and only those competencies relevant to the encounter were provided. Following these ratings, a questionnaire focused on raters’ perception and use of LH was completed.

For the purposes of the study, the LH was a brief written summary from the program director with NLH reflecting a resident with multiple areas needing improvement, and PLH reflecting a resident performing well above his or her peers. The videos used depicted average resident performances involving patients with a variety of medical issues. A Mini-CEX scale mean was created by calculating the average of the ratings on individual items for each rater by video.

Mean and overall competence ratings were analysed using a factorial ANOVA. Content analysis was performed on questionnaire responses.

Results: The Mini-CEX mean ratings for each group across all videos were as follows: 5.29 NLH, 5.72 C and 5.97 PLH p=.01, ηp2=.126. A post-hoc analysis (LSD) demonstrated a significant difference between the negative and the positive groups (Cohen’s d = 0.81, p < .001) with no difference between the control and positive groups (Cohen’s d = 0.3, p = .37) or the control and negative groups (Cohen’s d = 0.56, p = .11). Similar findings were found for the single overall competence ratings. In the post-study questionnaire, 23/28 (82%) of faculty had correctly guessed the purpose of the study and 19/28 (68%) felt the LH information was credible. Although several expressed concerns about its potential to create bias, 14/24 (58%) felt it did not influence their assessment.

Discussion & Conclusions: In keeping with the psychology literature, LH led to an assimilation effect; faculty provided with NLH generated lower scores than faculty provided with PLH after viewing the same performances. This may suggest that the provision of prior performance information about a trainee could influence a rater’s performance assessment. Moreover, this effect was noted despite raters’ awareness of the potential for bias. These results suggest careful consideration of the potential implications on LH use in clinical assessment.

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References:
Does the Opportunity to Reflect and Revisit during a Clinical Skills Exam Improve Students' Clinical Reasoning? Multicenter studies conducted at George Washington (GW), Jefferson, and University of Illinois, Chicago Schools of Medicine

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ABSTRACT

Introduction: Though reflection is valued in clinical medicine, little empirical evidence exists to support its impact on performance. Clinical skills exams (CSEs) are opportune for exploring reflection outcomes. Typically, in CSEs students visit each standardized patient (SP) once. However, students’ thinking may deepen if, after reflecting while writing their patient note (PN), they revisit their patients to further explore differentials. This study explored the effects of both live and virtual revisits on clinical reasoning. Aims: 1) examine the effect of a live revisit on students’ diagnostic reasoning; 2) compare the clinical reasoning effect of a live revisit with the more feasible virtual revisit; 3) examine the effect of both on assessment psychometrics.

Methods: In spring 2017, 251 GW and Jefferson students and 179 UIC students conducted live and virtual revisits respectively during an end-of-third-year CSE. All students had 15 minutes for a focused history, physical and counseling and 10 minutes to write a USMLE-style PN. Live revisits added 5 minutes to revisit the patient and 5 minutes to complete a revisit questionnaire; virtual revisits added 5 minutes to complete the questionnaire. The questionnaire: “List up to 3 additional history questions or physical examination maneuvers that (live: you asked) or (virtual: you would like to ask) to clarify your differential diagnosis. Explain how this information would help you.” Trained faculty used the UIC PN rubric to score patient notes, and a Revisit Rubric to rate the diagnostic relevance and rationale of revisit items. Results Live revisit: students listed additional H&P items in 59% (302/513) of revisit opportunities. Of the 547 items requested across cases, 107 (20%) were key to the diagnosis of the case, 357 (65%) were relevant but not key, and 83 (15%) were irrelevant. 306 rationales were provided: 216 (71%) were correct or partially correct. If the items listed had been included in the PN, 45 (15%) would have resulted in an increased score, 3 (1%) in decreased scores and 254 (84%) in no change. Virtual revisit: students listed additional H&P in 81% (373/463) of revisit opportunities. Of the 756 items requested across cases 148 (20%) were key, 454 (60%) were relevant but not key and 154 (20%) were irrelevant. 714 rationales were provided: 651 (91%) were correct or partially correct. If the items listed had been included in the PN, 98 (26%) would have resulted in an increased score, 17 (6%) in decreased scores and 258 (68%) in no change. There were no significant correlations between revisit scores, H&P checklist scores, or PN scores. Including revisit scores increased the variance associated with Person-Case interaction (case specificity) and decreased the reliability (Generalizability) of the CSE scores: G-Coefficient .32 to .13 and phi-Coefficient .21 to .10 in live and virtual revisits, respectively.

Discussion and Conclusions: In both live and virtual revisits, reflection while writing the PN resulted in most students identifying additional key/relevant H&P items, promoting diagnostic reasoning. Reduced reliability when including revisit scores may be from giving students more time to think of additional items, decreasing inter-student score differences resulting in more homogeneity. Virtual revisits require less time and may be more feasible than live revisits for busy clinical skills centers. Use depends upon training objectives: to optimize clinical outcomes is it more important to train students to reason in situ or to further calibrate their reasoning through reflect-revisit?

References:
How teacher-learner relationships influence the learning potential of low-stake assessments - An international study within programmatic assessment

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ABSTRACT
Introduction: Low-stake assessments are theorised to stimulate and support self-regulated learning. The use of low-stake assessment as a learning opportunity requires an environment in which continuous improvement is encouraged. This may be hindered by learners’ perceptions of assessment as high-stake. Teachers play a key role in influencing learners’ assessment perceptions [1]. By investigating assessment perceptions through an interpersonal theory-based perspective of teacher-learner relationships, we aim to elucidate these mechanisms within the medical assessment culture.

Methods: An qualitative approach to data gathering and analyses inspired by constructivist grounded theory approach was used to analyse the data and reveal underlying mechanisms influencing learners’ perceptions. First, twenty-six purposefully selected learners, ranging from undergraduates to postgraduates in five different settings of programmatic assessment, were interviewed about their assessment task perception [1]. Next, we conducted a secondary analysis using sensitising concepts from interpersonal theory [2] to elucidate the influence of the teacher-learner relationship on learners’ assessment perceptions.

Results: The study showed a strong relation between learners’ perceptions of the teacher-learner relationship and their assessment perception. Two important sources for the perception of teachers’ agency emerged from the data: positional agency and expert agency. Together with teacher’s communion level, both types of teachers’ agency are important for understanding learners’ assessment perceptions. High levels of teacher communion had a positive impact on the perception of assessment for learning, in particular in relations in which teachers’ agency was less dominantly exercised. When teachers exercised these sources of agency dominantly, learners felt inferior to their teachers, which could hinder the learning opportunity.

Discussion & Conclusion: To utilise the learning potential of low-stake assessment, teachers are required to stimulate learner agency in safe and trusting assessment relationships, while carefully considering the influence of their own agency on learners’ assessment perceptions. Interpersonal theory offers a useful lens for understanding assessment relationships in the context of medical education. The Interpersonal Circle model [2] provides opportunities for faculty development that help teachers develop positive and productive relationships with learners in which the potential of low-stake assessments for self-regulated learning is realised.

References:
QI education outside of the clinical setting: A sequential explanatory mixed-methods study of QI training that uses the medical school as the context for improvement

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ABSTRACT

Introduction: Quality Improvement (QI) is a rigorous approach to reducing errors, mitigating adverse effects, and strengthening the systems that underpin excellent healthcare. Given its importance, QI is now recognized as an educational competency for all future physicians. However, training QI in the clinical is constrained by the availability of time, resources, and faculty. Thus, pre-clerkship is arguably the ideal time to begin QI training. However, for pre-clerkship students, QI education is uniquely difficult because of their lack of exposure and understanding of the clinical context (1). The Program for Improvement in Medical Education (PRIME) is a pre-clerkship extracurricular program that teaches medical students the fundamentals of clinical QI but challenges them to apply these principles in improvement projects that focus on their own education. That is, to consider and describe opportunities for improvement within the context of the medical school system.

Methods: A sequential, explanatory, mixed-methods approach was used to examine the impact of PRIME on the development of clinically-contextualized QI knowledge and comfort with QI concepts within 125 medical student participants. This approach combined insights from both quantitative and qualitative methods. To determine the impact of the Program on clinical QI knowledge, participants completed the well-established Quality Improvement Knowledge Application Tool (QIKAT) prior to and following involvement in the PRIME curriculum. To determine the impact of the Program on comfort with QI concepts, participants also completed the Quality Assessment and Improvement Curriculum toolkit (QAIC) prior to and following PRIME. Changes in knowledge and comfort were analyzed by way of independent, paired (PRE, POST) t-tests. To further explore aspects of QI knowledge and comfort, 11 participants engaged in semi-structured interviews regarding their QI experiences throughout PRIME. These were analyzed using qualitative analysis techniques adapted from constructivist methodological approaches.

Results: Analysis of QIKAT measures indicated that application of QI knowledge to clinical contexts improved significantly following the Program (p < .001), even though the learning activities were not contextualized in the clinical environment. Similarly, the QAIC analysis revealed participants as significantly more comfortable with QI principles following PRIME (p < .001). Analysis of the interview responses highlighted the way in which the medical school focus provided a meaningful context for learning QI for students at this stage of training. This fostered a sense of motivation among the participants to engage in QI projects when they matriculate into clinically-situated work. Features of the Program that were considered facilitators of QI learning and an overall positive experience included the team-based nature of the exercises, the available supporting resources (i.e., program handbook), and consistent and regular instructor feedback.

Discussion: QI education that is situated within the familiar context of medical education can be effective in developing knowledge and comfort within pre-clerkship learners that has relevance and resonance in the eventual criterion clinical context. These findings are consistent with the notion that training on fundamental concepts that underpin a skilled process can promote transfer of learning into new, more complex contexts (2).

Conclusion: The application of QI principles within the familiar context of the medical school allows pre-clerkship learners to develop an understanding of their relevance to clinical applications. In this way, QI
training that occurs before clinical exposure represents a potential avenue to nurturing QI competency in a way that optimizes the effective allocation of clinical time and resources.

References:

