Author's response to reviews

Title: Virtual Patients to Explore and Develop Clinical Case Summary Statement Skills amongst Japanese Resident Physicians: A Mixed Methods Study

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Author's response to reviews: see over
Mr Diorelle Gato on behalf of Miss Clare Partridge Chair of the editorial board
BioMed Central

Dear Mr. Gato:
Thank-you for overseeing the review of our manuscript “Virtual Patients to Explore and Develop Clinical Case Summary Statement Skills amongst Japanese Resident Physicians: A Mixed Methods Study” for publication in the journal *BMC Medical Education*. We are extremely appreciative of the thoughtful comments and suggestions. The manuscript has undergone changes that reflect these suggestions and we believe it is much improved.

We have addressed all comments offered by the two reviewers and have replied to them in the attached document.

We are prepared to work with you further on this manuscript and would be open to additional modifications based upon your review. Thank-you again for reconsidering this manuscript for publication in *BMC Medical Education*.

Sincerely,

Brian Heist, MD MSc
Reviewer #1

1. Major Compulsory Revisions

There are a number of different theoretical approaches to understanding and studying clinical reasoning. The authors seem to have adopted the dominant paradigm based on cognitive psychology. This is perfectly acceptable but there seems to be no acknowledgment or awareness of other approaches to the study of clinical reasoning. This is a little surprising as the authors frequently mention narrative. Narrative Medicine has its own body of literature which is based within a more interpretive paradigm and can also be used as a basis to study clinical reasoning. The paper would be strengthened if there was at least some acknowledgment that there are other approaches to the study of clinical reasoning.

We greatly appreciate this insight. After reviewing where best to insert this text, we ultimately felt that it fit most naturally at the conclusion of the Strengths and Limitations section. There, we added the following sentences:

Finally, in exploring the SS styles, we adopted the dominant paradigm based on cognitive psychology. Approaching the analysis using an alternative conceptual framework, for example cognitive load theory or narrative medicine, may yield different understanding and categorization of the participants’ summary statements.

2. Minor Essential Revisions

2a. The standard of writing is generally very good but there are some very awkward statements and expressions that need clarification. For example, what exactly is “an organically occurring response”? (p.3).

We appreciate the concern and replaced “organically occurring” with “pragmatic.” Also of note, we have rewritten the preceding portion of the paragraph as advised by Reviewer #2.

2b. On line 86 of the same page there is the term “attending-driven feedback”. Many people outside North America may not understand this expression.

We have changed this expression to hopefully alleviate confusion and also modified the end of the sentence to hopefully improve readability. The new sentence reads,

With feedback from supervising physicians to guide problem representation and illness script development, the physician trainee encapsulates and integrates clinical experiences into an organized network of knowledge that can be effectively applied to future clinical practice.
2c. There is also mention of a “non-study setting” (p.5 line 141). Presumably the authors mean a purely clinical setting as opposed to an academic setting?

We have removed this expression. The new sentence reads, “In anticipation that monthly completion of five VP modules would be a reasonable real world expectation, reminders . . .”

2d. It might be better if [some] sentences were made into a number of shorter sentences. For example, the sentence, “Although both report similar content from the case of altered mental status, the second, semantically driven, extraction contains increased transformation of information into meaningful abstractions ...” (p. 9 line 230).

We hope the following rewriting of this segment will improve readership understanding.

Table 2 contains two SS extractions from the VP case of altered mental status to demonstrate the concept of semantic driving. Both report similar data, but the semantically driven case summarization contains increased transformation of the patient’s history into meaningful abstractions (e.g. “duration of altered mental status unclear”) and articulation of the relationships between information (e.g. “day after drinking alcohol, he was found with altered mental status”).

To improve readability elsewhere, we have broken up long sentences into shorter sentences in the following paragraphs:

1) Methods section – Study Design – first paragraph,

2) Results section – Comparison of Participating Programs – first paragraph.

We also shortened the following sentences:

1) Discussion section – Summary Statement Style – second paragraph – second sentence

2) Discussion section – Summary Statement Clinical Reasoning – second paragraph – fifth sentence
2e. Other examples include the statement, “These findings are important because narrative summarization is a hallmark of Western clinical training, intrinsically accepted as narratives naturally connect information throughout everyday life [24], and valued in CR for problem representation and key feature organization that enhance knowledge encapsulation” (p. 10 line 257). There is also an assumption here that Western style narrative summarizations are a gold standard that everyone should be striving towards. This assumption might need a little justification.

We have rewritten the Discussion section -Summary Statement Style section as follows to hopefully enhance readability and better explain the intrinsic value of narrative summarization. Other sentences have been reorganized but no other new content was added.

In our exploration of SS style, 4 distinct categories emerged. We described the modeled style as “narrative summarization” to distinguish it from the remaining styles, though to our knowledge it has not previously received this label. This form of summarization is a hallmark of Western clinical training, intrinsically suited to the problem representation and key feature organization that enhance knowledge encapsulation [1, 2]. In this manner, summarization articulates illness scripts that can be applied to future clinical practice. Importantly, narratives are a primary means of human learning spanning all cultures [3, 4]. As participants received neither positive nor negative feedback on their summary statements, nor did they receive incentives external to the study, we hypothesize that the statistically significant adoption of the narrative SS in part reflects their intrinsic comfort with this style. In terms of improving clinical reasoning, other identified SS styles identified in our study, though potentially serving as didactic exercises and assisting diagnosis in some cases, may be less effective in developing problem representation and illness script formation.

The implications of our findings are especially relevant to our participants’ level of training as it is during the PGY1 year that Japanese physician trainees begin to practice extensively with patients, thus representing the peak period for clinical knowledge encapsulation and illness script development [5]. Regarding the potential influence of different teaching styles amongst study sites, only Program D participants demonstrated significantly different SS styles from the remaining programs. The small n (5/38 participants), including the isolated participant who numbered and matched case data to differential diagnoses, precludes conclusions about teaching methodology unique to Program D.

On page 6 (line 167) there is mention of a scoring rubric. Is it possible for this to be included? It could help clarify what was done.

The rubric is about 2 pages in length and it slightly adapted for each VP case. Perhaps it is most pragmatic to invite readers to contact the investigators for details. We have added the following sentence to the conclusion of the relevant paragraph.

“(Copies of the rubric are available by contacting the lead author.)”
3. Discretionary Revisions

If the authors want to expand their research in the future, beyond a pilot study, then they would be well advised to strengthen the qualitative aspect with a well-recognized qualitative approach based on something like Narrative Medicine or Grounded Theory among others. For future studies they might consider interviewing the residents and asking them how they made sense of the Virtual Patients as well as asking the residents to explain how they used the Virtual Patients to develop their clinical reasoning and its articulation. Such interviews could also bring to light any other factors that could be helping residents to improve.

We very much appreciate the thoughtful suggestions and will strongly consider them in our future research on this subject.

Reviewer #2

It may be useful to know why the Japanese trainers and education system neglected teaching of CR. Is it a particular lacuna in curricula or does it have broader socio-cultural roots? A short sentence or two of what the authors think about this, or any evidence would be of interest.

We felt that that introductory paragraph was the best location to include this information and have rewritten this paragraph as follows.

Japanese medical training priorities are influenced by a traditional passive apprenticeship model and Japan’s 19th century adoption of the German medical education system[6]. Financial and cultural barriers continue to delay reform [7, 8]. One result of this history has been limited teaching of fundamental skills including clinical reasoning [7-9]. There is also substantial variation in the training experience of young Japanese physicians in terms of patient encounters and educational time [10]. Recently, in a pragmatic response to improve this situation, Japan has seen the emergence of widely available paper-based publications attempting to teach clinical reasoning to Japanese physician trainees [11].