PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Hidden Dynamics in Healthcare Teams; Optimization of Expert Dyad Performance in Acute Care Settings: A Scoping Review Protocol
AUTHORS	Walker, Katie; Asoodar, Maryam; Rudolph, Jenny; Meguerdichian, Michael; Yusaf, Tricia; Campbell-Taylor, Kimberly; van Merriënboer, Jeroen

VERSION 1 – REVIEW

REVIEWER	Sebok-Syer, Stefanie Stanford University School of Medicine, Department of Emergency Medicine
REVIEW RETURNED	12-May-2021

GENERAL COMMENTS	Thank you for the opportunity to review your scoping review protocol. I read through it with great interest and have a few comments and suggestions that could enhance the work you put forth. - I would suggest that you extend the period you are including from 5 years to 10 years and include work published in 2021. This area is currently shifting and empirical work both within and outside medicine is constantly getting updated. - It struck me as strange throughout the protocol that the focus is on learning practices as defined as "transformative processes of taking information, internalizing it, and combining it with previous experience," but then the study excluded "student training, single discipline training, and ambulatory care teams." Previous literature has demonstrated a strong level of interdependence between dyads of trainees and their supervisors. Furthermore, learning practices would surely also exist between junior and senior trainees as well as physicians and nurses. Finally, the focus on the physician-physician dyad (e.g., surgeon and anesthesiologist) may not generalize well to contexts outside of the operating room. This is an important line of inquiry and it would be more beneficial to be inclusive, especially given the dearth of literature in this area. - I think there needs to be greater clarity around the language used within this protocol. For example, the authors started out by saying that the focus is on dyads, but then would use the word "team" at times, which I would argue is different as dyads are unique subsets within interdisciplinary healthcare teams. - Finally, I think the link between dyad communication and adverse patient outcomes (e.g., medical errors) needs to be reframed. Surely, dyads may be a factor, but dyad communication is certainly not the only explanation for poor patient outcomes.

REVIEWER	Saxena, Anurag

	Saskatchewan Health Authority
REVIEW RETURNED	16-May-2021

GENERAL COMMENTS	Review of manuscript – Scoping review of hidden dynamics in healthcare teams. 1. The authors provide a justification for using a scoping review – as opposed to other kinds of reviews, (identify and map knowledge gaps, expand the concept of team dynamics in a specific clinical dyad situation in a specific- acute care- settings, identify the types of evidence and the scope of research) in this area, where there is likely to be paucity of evidence. 2. The proposed JBI methodology is an accepted method for conducting scoping reviews. 3. This work is focused on the learning practices affecting collaboration – ultimately collective competence - (communication and coordination) between the members of the dominant (expertise-based) dyad in acute care settings. 4. The protocol is well described (study designs to be considered, inclusion and exclusion criteria, search strategy – including that for grey literature, data extraction (using an extraction tool) and analysis and synthesis) and are tailored to meet the objectives. Comments: 1. Page 13, lines 23-25: the authors state that disagreements between the reviewers will be resolved through discussion with an additional review. It will be helpful if, they could address how a final decision will be made – consensus or voting or some other method of weighing the evidence. 5. Data analysis and Synthesis of results (pages 13 and 14): In a preceding section (Page 9, lines 4-9) there is a reference to the theoretical underpinnings – cognitive workload, shared mental models and relational coordination. The authors propose the Thematic analysis is to be an inductive iterative process. How will these theoretical perspectives inform the analysis and synthesis- will these be used as sensitizing frameworks or used after an initial "emergence of themes," these theoretical perspectives will be used as definitive frameworks for categorization? While the final decision may be dependent on the findings, some clarity will be useful at this stage.

VERSION 1 – AUTHOR RESPONSE

Reviewer Comments	Response	Action Taken
-I would suggest that you extend the period you are including from 5 years to 10 years and include work published in 2021. This area is currently shifting and empirical work both within and outside medicine is constantly getting updated.	Thank you for this. We agree that there is constant movement in this area and so are adding 2021. We think that as things are shifting, we would prefer not to include older literature in this review.	We updated the inclusion timeframe from 2016-2021. **(Page 2, line 48 and page 8, line 202.)**
- It struck me as strange throughout the protocol that the focus is on learning practices	Thank you again and your scoping review	We updated the abstract so that it is

as defined as "transformative processes of taking information, internalizing it, and combining it with previous experience," but then the study excluded "student training, single discipline training, and ambulatory care teams." Previous literature has demonstrated a strong level of interdependence between dyads of trainees and their supervisors. Furthermore, learning practices would surely also exist between junior and senior trainees as well as physicians and nurses. Finally, the focus on the physician-physician dyad (e.g., surgeon and anesthesiologist) may not generalize well to contexts outside of the operating room. This is an important line of inquiry, and it would be more beneficial to be inclusive, especially given the dearth of literature in this area.	which focused on measuring the interdependence within teams, certainly highlighted the strong interdependence between trainees and their supervisors. This is certainly very important work; however, our focus is on experienced dyads working in an interdisciplinary team who demonstrate excellent performance and the learning practices that they use. Learning at the expert level is really different (as you know) from learning at the novice level, as we would see in supervisor-resident dyads. We want to understand more about the learning practices of experts. We will emphasize the (limited) generalizability of our findings to trained healthcare professionals in the Discussion section. Adding other types of teams to our review might possibly show that results generalize over different types of teams, but it also comes with the clear risk that our results dilute because there is no generalizability. We will suggest that an area of further research would be generalizability of our expert dyad exploration.	clear we are studying expert dyads only. (**Page 2, lines 37-43, 51-52, page 3, lines 66-67, page 4, lines 103-107.)** We have changed the focus from operating room and physician/physician to all acute care settings and experienced clinicians within those settings **(page 3, lines 85-89)**

- I think there needs to be greater clarity around the language used within this protocol. For example, the authors started out by saying that the focus is on dyads, but then would use the word "team" at times, which I would argue is different as dyads are unique subsets within interdisciplinary healthcare teams.	Yes, thank you and totally agree. We have made multiple changes which reflect this. When we searched the number of manuscripts focusing on dyads was not enough, so we decided to look at teams as well. What we were searching for and the questions we had in mind could be answered if we broadened our search and looked at teams. We then developed exclusion and inclusion criteria to limit the study to the scope of interest.	We changed the language to reflect this multiple times throughout the text. **(Page 2, lines 51-52, page 3, lines 79-81 & lines 85 & 86, page 4, line 112, page 5, lines 146 & 155, page 6, line 171)**
- Finally, I think the link between dyad communication and adverse patient outcomes (e.g., medical errors) needs to be reframed. Surely, dyads may be a factor, but dyad communication is certainly not the only explanation for poor patient outcomes.	Yes, thank you, agree. We reframed it to poor team performance.	We changed patient outcomes to poor team performance **(Page 2, line 37 and Page 10, line 267)**
Competing interests of Reviewer: I recently published a scoping review with a focus on measuring the interdependence that exists within teams. Our findings were organized according to dyads, groups, and networks: Sebok-Syer, S.S., Shaw, J.M., Asghar, F., Panza, M., Syer, M.D. and Lingard, L. (2021), A Scoping Review of Approaches for Measuring "Interdependent" Collaborative Performances. Medical Education. Accepted Author Manuscript. https://doi.org/10.1111/medu.14531	Thank you for this. This manuscript is illuminating and has further refined our thinking on this topic.	Cited in protocol **(page 4, lines 103-107)**
Page 13, lines 23-25: the authors state that disagreements between the reviewers will be resolved through discussion with an additional review. It will be helpful if, they could address how a final decision will be made – consensus or voting or some other method of weighing the evidence.	Thank you. We have amended the protocol to reflect this. We will use a consensus method. We will present the contentious manuscript to a 3rd reviewer, and they will present their view on	Updated Data Extraction **(Page 9, lines 249-252)**

	inclusion or exclusion. After thoughtful debate, and a review of the inclusion/exclusion criteria, consensus will be attained.	
Data analysis and Synthesis of results (pages 13 and 14): In a preceding section (Page 9, lines 4-9) there is a reference to the theoretical underpinnings – cognitive workload, shared mental models and relational coordination. The authors propose the Thematic analysis is to be an inductive iterative process. How will these theoretical perspectives inform the analysis and synthesis- will these be used as sensitizing frameworks or used after an initial "emergence of themes," these theoretical perspectives will be used as definitive frameworks for categorization? While the final decision may be dependent on the findings, some clarity will be useful at this stage.	Yes, thank you again. We plan that the theoretical underpinnings of cognitive workload shared mental models and relational coordination will be used as sensitizing frameworks and the data will be coded from the findings.	Updated synthesis of results **(page 10, 264-266)**

VERSION 2 – REVIEW

REVIEWER	Saxena, Anurag Saskatchewan Health Authority
REVIEW RETURNED	14-Jun-2021

GENERAL COMMENTS	Thank you for addressing the comments. These have been addressed satisfactorily.