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**ARTICLE DETAILS**

**TITLE (PROVISIONAL)**
Impact of emotional competence on physicians’ clinical reasoning: a scoping review protocol.

**AUTHORS**
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**VERSION 1 – REVIEW**

**REVIEWER**
Vilhelmsson, Andreas
Lund University, Department of Clinical Sciences, Malmö

**REVIEW RETURNED**
10-Apr-2023

**GENERAL COMMENTS**
A research question suitable for a scoping review and I look forward to the results

**REVIEWER**
Dahm, Mary
Australian National University, Institute for Communication in Healthcare

**REVIEW RETURNED**
18-Apr-2023

**GENERAL COMMENTS**
Thank you for inviting me to review this protocol paper on clinical reasoning and emotional competence.

This is a very important topic, certainly in need of a review of the literature.

There a few minor points of clarification that should be consider and addressed before publication, especially in relation to exclusion criteria and considering to include definition of CR and EC as a finding

Abstract:
• Confusing to say "little is known" but then refer to the literature in the same sentence, suggest changing it to "scant literature"?
• Should Covidence be mentioned here as a tool
• Data extraction tool not specified.
• No critical appraisal tool mentioned.

Strengths & limitations:
• Various concepts of CR: maybe include definitions of both CR and EC in the extraction and use it as another result, they may be different combinations of definitions yielding different interpretations of the links between CR and EC

Main manuscript
• Referring to medical error when clinical reasoning is also closely linked to diagnostic error. Maybe be explicit about diagnostic
errors here, if there are differences in impact of CR on medical error and diagnostic error, describe them.

• Referring to "previous studies" but only giving one reference [24]
• When explaining dual process therapy also include heuristic as this is later used but not earlier explained
• Referring to "subject" when it is probably better to say "individual" or "person"
• Review questions: see comment on CR definition above, consider including definitions of CR and EC and different links as a results
• Referring to "medical learners" when it is probably better to say "physicians in training"
• While some exclusion criteria are included in the eligibility criteria section, I think it would serve the authors well to also include explicit exclusion criteria as a section. It is currently unclear what will be excluded. e.g. if the search should bring up other clinicians involved in CR and EC (e.g. nurses, psychiatrists, vets), or if other clinicians work with physicians. This is just an example but I feel exclusion criteria especially around other clinicians need to be more thoroughly described. Also include a justification of why other non-medical clinicians (e.g. Nurse practitioners) will be excluded.
• Missing tool for critical appraisal, this is not addressed nor are any reasons stated as to why authors may not conduct critical appraisal. This information should be included.
• The response to patient and public involvement is not sufficient. Any research including systematic or scoping review can include the insights of patients/consumers and the public and the authors should revise their stance.

Search strategy:
• Why does 11 not have the same format as 10?
• What about hospitals? Emergency, ICU, surgical, all missing. I that is on purpose that need to be addressed explicitly in inclusion/exclusion criteria

Language: there are some typos throughout, suggest another proofread. E.g. p 4: Experts [who] mainly use.

REVIEWER
Fatemi, Yasaman
Seattle Children's Hospital

REVIEW RETURNED
24-Apr-2023

GENERAL COMMENTS
Thank you for the opportunity to review this interesting study protocol. The proposal of the study is interesting in looking more specifically at emotional competence (rather than broader emotional intelligence) and potential impact on physician clinical reasoning. This is a scoping review, which is appropriate for this topic as there is a need to describe the current state of knowledge for this topic. This presents an important area of further investigation in the field of clinical reasoning and diagnostic error. I look forward to reading results from this study once completed.

VERSION 1 – AUTHOR RESPONSE

Reviewers’ Comments to Author
First of all, we would like to thank the reviewers for their interest towards our research question. You will find below the answers to the different comments raised.

Abstract:

Comment #1:
Confusing to say "little is known" but then refer to the literature in the same sentence, suggest changing it to "scant literature"?

Answer #1:
Indeed, this formulation needs to be clarified. As described in our article, according to the model of Mikolajczak et al, the concept of EC includes 5 different skills (identify, use, regulate, express and understand emotions). CR also encompasses many concepts, and the definitions of CR used in the literature are diverse. While there is literature linking some aspects of EC to some aspects of CR, there is for the moment very few articles directly exploring the link between physicians EC and CR, both being considered as a whole. There is also no overview of the impact of EC on CR. The impact of EC on CR is thus for the moment still unclear.
In response to this comment, we adapted our formulation in the abstract as follows: "The influence of EC on CR remains unclear."

Comments #2 and #3:
Should Covidence be mentioned here as a tool?
Data extraction tool not specified.

Answer #2 and #3:
It seems relevant to us to specify this and we thus adapted the sentence as such: "Study selection and data extraction will be conducted using the Covidence software."

Comment #4:
No critical appraisal tool mentioned.

Answer #4:
We thank the reviewer for this interesting comment. Unlike systematic reviews, critical appraisal is not always indicated for scoping review, depending on the aim of the review (SUMARI JBI). Critical appraisal of individual studies will not be performed in this review, since our objective is to identify the type of available literature and map the knowledge gaps to inform future research. For this purpose, we will however record the design of the selected studies. This statement will be included in the section “Search strategy: Data extraction, analysis and presentation”.

Comment #5:
Various concepts of CR: maybe include definitions of both CR and EC in the extraction and use it as another result, they may be different combinations of definitions yielding different interpretations of the links between CR and EC.

Answer #5:
This is an interesting point that has to be discussed when considering our results. As mentioned in the answer to comment 1, some articles are assessing clinical reasoning and emotional competence as a whole, while many others are focusing on particular aspects of clinical reasoning (e.g. bias management) and/or emotional competence (e.g. emotion regulation). We chose to keep our definition of CR and EC as large as possible, using synthetic and large frameworks (Mikolajczak et al for EC and Young et al for CR), in order to select all the articles studying CR/EC as
a whole as well as those only considering some aspects of it. We propose to adapt the extraction tool as follows: for articles considering CR and/or EC as a whole, the definition used for those concepts will be recorded; for articles focusing on specific aspects of CR and/or EC, the particular aspects considered will be recorded. This statement has been added in the section “Search strategy: Data extraction, analysis and presentation”.

Main text:

Comment #6:
When explaining dual process therapy also include heuristic as this is later used but not earlier explained

Answer #6:
We clarified the sentence: “Our current understanding of CR is based on dual-process theory. This theory distinguishes a rapid, intuitive reasoning process (type 1 process), involving pattern recognition, heuristics and gut feeling, and a slower, analytic process (type 2 process), based on hypothetico-deductive reasoning.”

Comment #7:
Referring to medical error when clinical reasoning is also closely linked to diagnostic error. Maybe be explicit about diagnostic errors here, if there are differences in impact of CR on medical error and diagnostic error, describe them.

Answer #7:
This is an interesting contribution. Even if research on clinical reasoning mainly focuses on diagnostic reasoning, the impact of reasoning mistakes goes beyond diagnostic errors, it also badly influences therapeutic strategies and can also lead to a poor evaluation of patient’s prognosis. Because of this direct impact on diagnostic, therapeutic and prognostic accuracy, reasoning errors are, among all the possible sources of medical errors, one of the most damageable for the patients. Medical errors however encompass many sources of errors (e.g. dysfunctional physician-patient communication, dysfunctional healthcare workers’ communication, administrative errors, unfavourable working environment aso).
For clarification, we modified the sentence as: “Although medical errors are not always linked to reasoning issues, this represent one of the most damaging source of medical errors, due to its impact on diagnostic and/or therapeutic and/or prognostic accuracy.”

Comment #8:
Referring to “previous studies” but only giving one reference [24].

Answer #8:
Indeed this needs to be clarified. The cited reference reports data of multiple case reports. This will be thus modified the text as follows: “Previous data have shown that individuals with cerebral damage in subcortical areas – involved in processing emotions - were unable to decide between rationally equivalent options.”

Comment #9:
Referring to “subject” when it is probably better to say “individual” or “person”.

Answer #9:
We modified the text as follows: “The ability of an individual to deal with emotions is called emotional competence (EC).”
Comment #10:
Review questions: see comment on CR definition above, consider including definitions of CR and EC and different links as a results

Answer #10:
See also answer to comment # 5. This will be included in the extraction tool and reported, but we propose not to outline it here, because, in our point of view, it falls within the description of the current state of knowledge regarding the influence of EC on CR.

Comment #11:
Referring to "medical learners" when it is probably better to say "physicians in training"

Answer #11:
To stay in line with the previous concepts, we will use the terms "residents and medical students". We modified the sentence as follows: "The search strategy consists of three key concepts: (1) emotional competence and (2) physicians or residents and fellows or medical students and (3) clinical reasoning."

Comment # 12:
While some exclusion criteria are included in the eligibility criteria section, I think it would serve the authors well to also include explicit exclusion criteria as a section. It is currently unclear what will be excluded. e.g. if the search should bring up other clinicians involved in CR and EC (e.g. nurses, psychiatrists, vets), or if other clinicians work with physicians. This is just an example but I feel exclusion criteria especially around other clinicians need to be more thoroughly described. Also include a justification of why other non-medical clinicians (e.g. Nurse practitioners) will be excluded.

Answer #12:
We understand those concerns and have taken your comments into account. First of all, we included a specific section with exclusion criteria. Regarding specifically the comment on the exclusion of non-medical clinicians, we would like to clarify that this decision has been made for three main reasons:
1/ Involving all clinical professions while taking into account all the dimensions of CR and EC would have retrieved an excessive number of publications and would bring a large heterogeneity in the interpretation of the results. Indeed, every profession has a particular range of competencies, educational pathways and responsibilities, also varying between countries and cultures (e.g. nurse practitioners have different duties in Australia versus in the US). We therefore focused our work on physicians to keep some homogeneity in terms of tasks, responsibilities and educational pathway.
2/ The main objective of our research is to contribute to improving the clinical reasoning of a particular population, namely physicians (in training). In order to collect the most accurate data about this population, we therefore needed to focus our scoping review on the target audience.
3/ Focusing on physicians allowed us to explore deeply the concepts of CR and EC and to use a broad range of keywords concerning those two concepts in our search strategy. We therefore decided not to mention the non-medical clinicians as an exclusion criterion, due to the specific pre-defined scope of our review.

Comment #13:
Missing tool for critical appraisal, this is not addressed nor are any reasons stated as to why authors may not conduct critical appraisal. This information should be included.

Answer #13:
As detailed in the answer to comment 4, we will include this statement as follows: “Critical appraisal of individual studies will not be performed in this review, since our objective is to identify the type of
available literature and map the knowledge gaps to inform future research. In this purpose, we will record the design of the selected studies.”

Comment # 14:
The response to patient and public involvement is not sufficient. Any research including systematic or scoping review can include the insights of patients/consumers and the public and the authors should revise their stance.
Answer #14:
We are aware of the importance of this point. See our answer in the section “Editor’s comment to the Authors”.

Search strategy

Comment # 15:
Why does 11 not have the same format as 10?
Answer #15:
If we have understood correctly, it is not the number 11 but the initials LJ, standing for “Louise Joly”. This may have disturbed the reading.

Comment # 16:
What about hospitals? Emergency, ICU, surgical, all missing. I that is on purpose that need to be addressed explicitly in inclusion/exclusion criteria

Answer #16:
Indeed, all physicians, residents and medical students will be included, regardless of their specialty or their working environment. This has been clarified in the inclusion criteria as follows: “All physicians, regardless of their specialty or working environment, will be included in this review.”

Language:

Comment # 17:
Language: there are some typos throughout, suggest another proofread. E.g. p 4: Experts [who] mainly use.

Answer #17:
Thank you for reading this carefully. The text has been re-read and typos corrected.