# Peer Review File

**Reviewer A**

**Reviewer A comment:** "it is unclear that this is a selective literature review with a double-loop approach which is not explained at all. Review papers still need a method section on how the literature was collected and analysed."

**Authors' Reply**: We appreciate the reviewer's comments and added a brief explanation on the methodology in the executive summary and in the Introduction section of the manuscript.

**Change in text**: The introduction now reads "we performed a selective review of the literature related to health care associated burnout and utilize double-loop learning to offer opinions and selected solutions for …."

**Reviewer B**

**Reviewer B comment:**
The findings of the recent meta-analysis …You may use this article in discussion to check the consistency of your findings with the above said meta-analysis.

**Authors' reply**: Thank you for the valid reference, we have added this to the body of our text to validate our claims.

**Changes in text**: Addition of the following highlighted segment:
Based on a recent review of nearly 80,000 health care workers anxiety, depression, stress, post-traumatic stress disorder and insomnia are increasingly being reported as cofactors of burnout.

**Reviewer B comment:**
Please consider adding the study type. It was not explicitly stated.

**Authors' response:** We would like thank the reviewer for the valuable comment. We addressed this issue in response to Reviewer A.

**Reviewer B comment:**
Please consider adding a table format to show your data extraction results presented in the analysis section.

**Authors' response:** We thank the reviewer for the comment. Many of the literature that we have reviewed and discussed were heterogenous and do not lend themselves into a table format. We have done our best efforts to summarize our findings by subject and conceptualize the ideas in a narrative form.

**Reviewer B comment:**
Methods were not described fully. There are significant gaps.

**Authors' response:** We thank the reviewer for the comment. We have clarified our methodology in the executive summary.

**Changes in text**: Addition of the following highlighted segment:
In this paper, we performed a selective review of the literature related to health care associated burnout and utilize double-loop learning to offer opinions and selected solutions for physicians and healthcare organizations for interventions to minimize burnout and reverse its occurrence in the workplace and at home.

**Reviewer B comment:**
Please discuss the public health implications too in terms of post-traumatic growth.

**Authors' response:** We appreciate the reviewer's comment. Our study did not focus on post traumatic growth per se, therefore for the sake of length and comprehension we mention the topic in the recommendations section under organizational interventions and included the recommended reference for the interested reader.

**Changes in text**: It is also important to consider the response by healthcare organizations after burnout has been established. It is clear that post-traumatic growth can be cultivated and offers an opportunity to create a more resilient healthcare worker but the appropriate mentorship and psychosocial support systems need to be in place for this to occur.


**Reviewer C**

**Reviewer C comment:**
Capitalize "medical"

**Authors' response:** We thank the reviewer for the comment. We have made the requested change.

**Changes in text**: Regional Medical Director, Sound Critical Care

**Reviewer C comment:**

(Page 5) 1 Is the reason medical practitioners don't believe their symptoms are severe enough to warrant medical intervention because this is their sound medical judgment and they are in error or because their judgment has become clouded as a result of burnout? This answer would make a difference and, if burnout is clouding their judgment, it means that physicians experiencing burnout are likely a detriment not only to themselves but also to their patients. The authors should comment on whether burnout is decreasing the ability of physicians to think rationally.

**Authors' response:** We thank the reviewer for the comment.    This statement is meant to show that there are inadequate resources available to health professionals to raise awareness of their condition in order to adequately identify it and then begin to mitigate the consequences of it.    Hopefully the edit will clarify this.

**Changes in text**: Addition of highlighted segment:
Furthermore, research suggests that the far majority, 64%, of practitioners do not seek help for burnout or depression because they do not believe the symptoms are severe enough to warrant medical intervention (9). Health professionals experiencing burnout do not have adequate awareness of their syndrome nor the appropriate resources to cope with it.

**Reviewer C comment:**
(Page 6) 12 As most of the paper numbers references, "(Reith, 2018)" should become reference 12.

**Authors' response:** We thank the reviewer for the comment. This was reference #6

**Changes in text**: the reference was revised as (6)

**Reviewer C comment:**
(Page 6) 18 Similarly "(A10RA Pub.L. 111–5 of 2009)" should become reference 14.

**Authors' response:** We thank the reviewer for the comment. This reference was revised and added to the bibliography accordingly.

**Changes in text**: the reference was revised in the bibliography.

**Reviewer C comment:**
(Page 7) One of the things that has changed considerably in medicine since the 1970s is the loss of secretarial and filing clerk help to physicians. With the expectation that doctors will input their own information into the computer in preparing electronic documentation, what would previously been the role of the medical secretary and of the file clerk has been taken up by the physician. Mention should be made of this veritable elimination of the medical secretary and file clerk.

**Authors' response:** We thank the reviewer for the comment. This is a thoughtful point. While there is a plethora of issues associated with EHR related burnout only a few were able to be included in our section.

**Reviewer C comment:**
(Page 8) 14 Embolden "1." (Page 9) 17-18 Which studies have shown that young physicians have twice the risk of burnout compared to older colleagues? Need a reference.

**Authors' response:** We thank the reviewer for the comment. Please see additional reference

**Changes in text**: addition of reference

**Reviewer C comment:**
(Page 10) 14-15 Reference should be made to the literature on the necessity of adult autonomy. See, for example, the preeminent work on The Adult Learning Theory (Andragogy) of Malcolm Knowles.

**Authors' response:** We thank the reviewer for the thoughtful comment. The Adult Learning Theory is applicable to our topic and would add some validity to our claims of autonomy at work being a component of burnout. We think that introducing the topic would be superfluous and would deviate from the core purpose of the section and have declined to add additional material regarding this point.

**Reviewer C comment:**
20-21 You need to explain why they should use Kotter's approach.

**Authors' response:** We thank the reviewer for the comment. We have built on the importance of Kotter's approach by the addition of a qualifying statement emphasizing the value of the health professional in the organization

**Changes in text**: Revised text with the addition of the highlighted segment:
Administrators fail to use Kotter et al. 2016's *"Leading Change: Why Transformation Efforts Fail"* approach in implementing new rules or initiatives, including establishing a sense of urgency, creating a strong coalition of individals, creating & communicating a unifying vision and implementing changes to foster growth in the organization (32). These principles embrace the value of the healthcare professional in the success of the institution therefore increasing the importance of prevention and treatment of burnout.

**Reviewer C comment:**
10 "5. Health Record Related Burden:" should be "5. Health record related burden:"

**Authors' response:** We thank the reviewer for the comment. The capitalization has been corrected as above.

**Reviewer C comment:**
(Page 12) 3-9 This seems to be a new section "6. Physical and psychologic aspects:" not part of section "5. Health record related burden:"
8-11 This seems to be a new section "7. Annual cost:" not part of section "5. Health record related burden:

**Authors' response:** We thank the reviewer for the comments. After careful review this section has been removed and the redundant points have been consolidated elsewhere in the paper.

**Reviewer C comment:**
13-14 This is the first-time resiliency and emotional tenacity are mentioned as important during times of stress. You need a reference for research in this area before you make this claim. This is especially so given that the recommendation is for voluntary resilience training in lines 20-21. The information about what is resilience and why it is important comes too late in this paragraph in lines 21- (Page 14) 1-3. This information needs to be moved up to the top of the paragraph. The recommendations offered are much too vague. Details needs to be provided on what these programs would entail, how they would be set up, how many people would be involved, when they would take place and where they would be held.

**Authors' response:** We thank the reviewer for the comments. The references have been provided but were rearranged based on the recommendations. Unfortunately, there is very little reference worthy support of this strategy at this time.

**Changes in text**: The first sentence of our recommendations section on work-life balance now reads: **1. Work-life balance:** Moral resilience is defined as "*the capacity of an individual to sustain or restore their integrity in response to moral complexity, confusion, distress, or setbacks" (23)* Building resilience through resiliency training is an integral method that may enhance "emotional tenacity" during times of stress.

**Reviewer C comment:**
7-9 Not enough information is provided about this concept of boundary ritual and how it would protect family time.

**Authors' response:** We thank the reviewer for the comment. We have added clarification of this point to help the reader understand the concept.

**Changes in text**: Please see addition of highlighted text. Dr. Dike Drummond recommends the concept of boundary ritual to establish protected family time and achieve some work-life balance (44).  Similar to Mr. Rogers' (of *Mr. Roger's Neighborhood)* ritual of removing his shoes, sweater and singing, "It's a Beautiful Day

in the Neighborhood," We should create a ritual that signifies the transition of work life to home life.

**Reviewer C comment:**
10-17 More information needs to be provided about the "psychological first-aid" offered by the RISE program

**Authors' response:** We thank the reviewer for the comment. We believe the concept of the RISE program was explained as sufficiently as possible in the segment. The text is included here for review:

Another recommended solution for hospitals and healthcare organizations is to adopt the *Modeled on the Resilience in Stressful Events (RISE)* program at Armstrong Institute for Patient Safety and Quality at Johns Hopkins University. The RISE program is designed to care *for caregivers* and train healthcare organizations to implement a peer-responder program that delivers "psychological first-aid" to healthcare professionals. The program "*prepares employees to provide skilled, nonjudgmental and confidential support to individuals and groups*" (45). Hospitals participating in the program recruit local volunteers across the various medical disciplines to educate physicians and provide support to clinicians.

**Reviewer C comment:**
19 Change "work" to "works".

**Authors' response:** We thank the reviewer for the comment. We have made the requested correction in the text.

**Reviewer C comment:**
(Page 15) 2 Change "will manage" to "will be able to manage".

**Authors' response:** We thank the reviewer for the comment. We have made the requested correction in the text.

**Reviewer C comment:**
(Page 19) 17-18 The conclusion should not be the first place "the whole person" is mentioned. By italicizing this phrase, it seems a particular philosophy is being adopted and presented without that philosophy ever being mentioned. The meaning of "the whole person" needs to be unpacked.

**Authors' response:** We thank the reviewer for the comment. This is a good point however we believe that the "*whole person*" philosophy is in fact a succinct summary of the recommendations and allows the reader to adequately digest all the recommendations with one thought.

**Reviewer C comment:**
21 Why is the conclusion the first place that the importance of early detection being paramount is mentioned? There should be a section on this in the body of the paper.

**Authors' response**: We thank the reviewer for the comment. This is a good point however we believe that discussing the RISE program earlier in the paper emphasizes the importance of early recognition of burnout and the role that organizations should play in preventing further deterioration of the healthcare professional.

**Reviewer C comment:**
(Page 23) Most of these references are not from peer reviewed journals.

**Authors' response**: We thank the reviewer for the comment. We have added multiple references as addressed earlier by previous reviewers.

**Reviewer C comment:**
(Page 27) Figure 1 is too small and at too low a resolution.
(Page 28) Figure 2 is too small and at too low a resolution. Turn it on its size to use the entire page.

**Authors' response**: We thank the reviewer for the comment. The resolution of the images are optimized to the best of our ability. The link to the image source has been provided to allow for optimal viewing if the reader is interested.

**Reviewer C comment:**
(Page 29) In what way is Figure 3 helpful to the topic of the paper?

**Authors' response**: We thank the reviewer for the comment. We agree that the image was not directly relevant to the topic of the paper. We have decided to remove it.

At this point the authors would like to reiterate that we are very grateful for the time the reviewers placed in giving thoughtful feedback. We hope that we were able to implement the feedback requested and if there are any further questions, please don't hesitate to contact us.