Author’s response to reviews

Title: The Professionalism Disconnect: Do Entering Residents Identify Yet Participate In Unprofessional Behaviors?

Authors:

Alisa Nagler (alisa.nagler@duke.edu)
Kathryn Andolsek (kathryn.andolsek@duke.edu)
Mariah Rudd (mariah.rudd@duke.edu)
Richard Sloane (richard.sloane@dm.duke.edu)
David Musick (musickd@ecu.edu)
Lorraine Basnight (basnightl@ecu.edu)

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**Manuscript Submission: Defining Professionalism: Differences by Gender and Institution**

Thank you for allowing us the opportunity to submit our revised version of our article “Defining Professionalism: Differences by Gender and Institution” for your review. Our study is based on original research, has never been previously published and was completed without financial support. Our authors have no financial relationships to disclose.

Our study sought to better understand first year residents’ perspectives and experience with professionalism issues. The study reports data analyses for gender and institution based upon survey results in 2009 and 2010. Through the analyses of these data we discovered differences by both gender and institution. These differences suggest the need for tailored teaching and assessment of professionalism at the institutional level.

We found the reviewers comments very useful and constructive. Below are our responses to each of the reviewer comments.

**FIRST REVIEWER**

Major Compulsory Revisions
1. I’m not sure that your title aligns with the real purpose of the study. In the introduction you state that you want to better understanding entering residents’ perspectives on professionalism and you add the bit about gender and institutional differences almost as an afterthought, it certainly doesn’t seem to be central to your study. I also note below that there are problems with your treatment of the data in regards to testing for differences in gender and institution. I’ll also argue that your most compelling data is the relationship between residents’ professionalism ratings and their participation in those behaviors. I’d consider rewriting to either remove the focus on gender and institution or substantially reducing its importance in the paper.

*We have changed the title to better reflect the focus of the paper. The new title is: “The professionalism disconnect: Do entering residents identify yet participate in unprofessional behaviors?”*

2. I think you can do a better job at providing reliability and validity evidence for the survey you used. You make a couple of vague statements in the methods section about your survey being based on another survey previously published and that the vignettes align with the authors' experience. Just because a survey has been previously published, doesn’t mean it is a high quality survey or a survey that believably answers your research questions. I’d like to see some discussion of the
reliability coefficients you observed during this study. At minimum, I would have liked to see you look to the literature and/or a panel of experts to determine if your survey has representatively sampled the domain of unprofessional behaviors.

We appreciate this feedback and will consider these issues for future related studies. For this study, we received permission and utilized survey questions which GME leaders at our institution deemed timely and important. We think the professionalism issues addressed in this study are common and relevant for other institution as well and thus chose to share our findings. We did add a sentence referencing a similar study of professionalism which used a validated instrument and addresses some of the same issues. See reference #27.

3. I don’t generally think it is appropriate to use hypothesis tests on each individual item on an instrument. I think it weakens the validity of the instruments and of the conclusions drawn from the statistical analysis, particularly when a correction for type I error inflation is not used. Please see the paper cited below for a more complete discussion on the problems in analyzing item-level data. Carifio J, Perla R. Ten common misunderstandings, misconceptions, persistent myths and urban legends about Likert scales and Likert response formats and their antidotes. J of Soc Sci. 2007;3(3):106-16.

Thank you for bringing up this important point about the ramifications of over-testing without correction for protecting Type I error violations. In the analytic section of the methods, we did recognize this problem and in the original submission wrote “At the risk of uncovering spurious associations, no adjustment or correction was made for multiple testing because the spirit of this analysis was to discover which professionalism items were associated with gender and institution, and there was no a priori hypotheses entering the analysis.” However, we also recognize that this statement is not sufficient to alert the reader to the extent to which testing without correcting for alpha-level was conducted, so we have added additional text to this effect in the Limitations section of the discussion.

We appreciate the reviewer bringing to our attention of the article by Carifio and Perla, as it made for enlightening reading. Although the word “Likert” never appeared in the original submission, in fact the items and responses fall into the set of survey items generally classified as such. We have revised the language in the Methods to “Participants were asked to rate their perception of professionalism involved in each of these scenarios using five level ordinal response categories (1=unprofessional; 2=somewhat unprofessional; 3=neutral; 4=somewhat professional; 5=professional).” to avoid the confusion or potential misuse of the word “scale”.

We understand the problems with the “shotgun” item-analytic approach the article prevails must be “put out of their misery”, but as noted above, we also recognize that this analysis is not purporting to develop an overall scale but rather is purely exploratory and descriptive in nature. There is no index or scale of professionalism being constructed from this analysis – when (or if) that time comes, proper psychometric oversight and construction principles will be
invoked. In the meantime, we are simply presenting the associations we found to be “interesting” with the appropriate caveats mentioned now twice in the article.

4. I’m not well versed in the Cochran-Mantel-Haenszel test statistic, but based on my brief reading, I have doubts as to its appropriateness for this data. I would advise having an expert statistician review.

We appreciate the reviewer’s keen eye. Cochran-Mantel-Haenszel (CMH) analysis has many applications, most notably for assessing homogeneity across different strata. Another application is for evaluating extended (i.e., larger than $2 \times 2$) contingency tables, whether in 1 stratum or multiple strata. Since we used SAS for the analysis, please refer to SAS documentation: Base SAS 9.3 Procedures Guide: Statistical Procedures, Second Edition 2012.

5. I’m not sure what it means that entering residents from the two institutions had significant differences. I’d be more interested in seeing if there were differences between graduating learners of different institutions. Are you trying to make the case that the two different institutions have different standards in terms of professionalism in their selection process or that the professionalism of learners who favor attending one institution over another is different? Either way, there are better ways to go about addressing those questions. I’m not sure that this set of findings adds a lot of value to the literature.

We feel like we addressed this in the first few sentences of the Discussion – Institution section. However, to better address your concern, we have added a sentence to the limitations section noting findings may be even more telling when we can review responses of graduating residents – after they have trained and been immersed in a specific institution.

6. Your qualitative results are rather cursory. I think you could have provided much more detail or at minimum, some examples of comments that illustrate your categories. You did a nice job of explaining your qualitative data analysis, but then provide extremely little in your results section.

We have added representative open ended comments in the Results section highlighting the themes identified from the qualitative data.

7. Page 9, end of first complete paragraph, I think these are all likely contributing factors. I also think that sometimes people just make mistakes, recognize them and then correct future behavior. It would have been interesting to ask how frequently the participants reported engaging in the behaviors.

It would be interesting to know how often they participated in these activities and certainly something to consider for a future study. One could also argue, participation in these activities, even one time, is concerning. We also agree these may be contributing factors and have revised the sentence noted above to reflect this comment.

8. I was surprised to see the participants list “balancing home and work life” as a professionalism issue. I would have really liked to see some of the comments that participants made. I haven’t come across this idea in my own research in
professionalism, nor have I read about in others’ research. I think it is intriguing and would have liked the authors to explore it in more depth.

See #6 above, we added some examples of responses from the open ended questions. We agree – this was somewhat surprising to us – and we attributed some of it to generational issues. See paragraph in discussion section.

Minor Essential Revisions
1. First sentence, second paragraph of the introduction needs a period.

Done.

2. First full sentence on page 5 (“The survey included...”), I found difficult to read, I had to read it a couple of times to understand what you were trying to say.

We have revised this sentence for better clarity.

3. Page 5, first full paragraph, you mentioned that residents were informed about that the study was voluntary twice. I think you could reword to remove the redundancy.

We do not see where “voluntary” is listed twice.

4. Page 5, last full paragraph, you are missing a decimal point, “p-value of 05” should read, “p-value of .05.”

Done.

5. I would like to see percentages, in addition to, or instead of frequencies in table 2.

Done.

6. I’d like a bit of explanation as to why you chose to focus on the top 15 behaviors to compare the professionalism ratings with whether or not a respondent participated in the behavior.

We purposefully chose to focus on the behaviors for which greater than 10% of responders participated. This happened to be 15 behaviors. We added a paragraph in the Methods section to better explain this. In addition, we added a sentence in the relevant Discussion section to highlight why we focused on the behaviors in which greater than 10% had participated. We believe it’s the behaviors with the greatest participant participation that programs and institution may use as a foundation for teaching and setting guidelines for professionalism.

7. Bottom of page 8, “50% of responders rating” should read “50% of responders rated.”
8. Role modeling is very likely a contributing factor as to why the respondents participated in the behaviors in the first place, so improving role modeling could very well serve to reduce the behavior's incidence; however, it is much easier to say that role models need to act more professionally than it is to actually change behavior. Your statement on page 9, “may be all that is required” minimizes the difficult task of getting role models to change their behaviors. I think a revision that doesn’t minimize the significant task of changing physician behavior is warranted.

We agree and took out the sentence suggesting this would be a minimal effort.

9. You had a couple of references that were incomplete; 16, 40.

We have addressed this – thank you.

10. Figure 1 needs some editing, the percentages are jumbled together or overlap with the bars in a few places.

Done.

Discretionary Revisions

1. Page 4, second complete paragraph, first sentence hyphenate “day to day.”

Done.

2. I can see why you briefly describe the two institutions at the end of the introduction, but I would rather see the description in the methods section.

We have made sure there is some discussion of the two institutions in the Methods section.

3. I don’t think table 1 adds much to the paper, you already do a nice job of explaining the response rates in the text, I suggest you consider deleting table 1.

We have left it in for now but are happy to take it out if the manuscript is approved and the editor feels it should come out.

4. Page 6, after you discuss table 2 you reiterate that you collapsed response categories, you already discussed that above, you don’t need to reiterate it here.

We have deleted this explanation from the Results section as it already exists in the Methods section – as is noted here.

5. The title of figure 1 is awkward; consider “Behaviors in which 10% of respondents participated”

Thank you. This is a perfect title and we have changed it in the manuscript.
6. You seem to reference the millennial generation quite frequently in the paper. In my opinion, these generational differences are often overblown and we tend to see much more variability within a generation than between generations. I suggest that you cut back on your references to the millennials.

_We have removed the second mention of millennials. The existing references occur in just two paragraphs._

**SECOND REVIEWER**

1. Please explain why the qualitative analysis was not split by institution and gender.

_After a preliminary review of the open ended comments, there didn’t appear to be any striking differences by institution or gender. The authors were more interested in the qualitative feedback and themes overall to gain an understanding of what issues residents identify as professionalism challenges. It is this information that will most likely help guide GME programs in teaching and evaluating professionalism._

2. Please elaborate on the qualitative results. Explain the type of behaviors they referred to related to respect, etc.

_Reviewer #1 had a similar suggestion so we have added a number of quotes from the open ended questions for each of the themes identified. We agree this adds rich detail to the manuscript._

3. In the discussion you state that your study "findings inform our understanding of the professionalism issues that may be most pertinent to this generation of learners." I am unclear how this is the case. You decided on the issues and behaviors and we do not know they are actually the most pertinent ones... I would revise this statement.

_We have revised this statement – thank you._

4. Although you state that this study explores institutional differences this is actually very limited, as the residents answered about their previous institutions and experiences. I believe that in your next wave you will have more information about these institutions but at this point I suggest stating this issue as a limitation.

_We have added this as a limitation and made sure we made this clear in other sections of the paper. We agree that hearing from graduates may address more specifically the difference institutional cultures – although one could argue institutions attract certain cohorts of people as well._

5. I suggest connecting between the qualitative and the quantitative results. Using the qualitative results to explain/elaborate the quantitative results.
We have added a few sentences stating how the qualitative findings corroborate the quantitative findings.

Minor Essential Revisions

1. In the end of p. 8 you discuss the need to help learners identify their institutional norms. From your findings, of the differences between institutions, they are capable of doing that. The question remains on how they can act against problematic norms that they see...

This is a great point and we have added a sentence addressing the impact of faculty modeling or the culture of what is appropriate (and related concerns of how to raise professionalism issues) in paragraph 6 of the Discussion section.

2. In the discussion you refer to the "on the spot correction" when residents act in an unprofessional manner. However, this ignores the finding that they are exposed and observe unprofessional behavior much more than they act in this way. Therefore, those who are supposed to correct and feedback them are negative role models... please discuss this.

We believe we have addressed this in the response (and edits) for #1 above.

3. When discussing gender you refer to references about differences between genders communication style and attitudes. Please elaborate how these studies actually relate to your findings.

We have added a sentence better connecting existing findings on gender differences to our findings.

4. Within the same paragraph you raise a hypotheses about a possible, interesting, explanation for males actions. I would suggest elaborating and providing additional theoretical and empirical literature about the rationalization process they may go through to explain it.

We reviewed the rationalization literature briefly and not sure it makes sense to highlight this literature as this is not a highlight of the manuscript.

5. In the same paragraph you refer to two items in table 4 that reached statistical significance. Please state which items these are clearly.

We have added the language of those vignettes to that paragraph.

6. Concerning the issue of respect, it would be interesting to compare your qualitative findings with those of our recent findings published in Journal of General
Internal Medicine: Exploring the meaning of respect in medical student education: an analysis of student narratives.

Thank you for drawing our attention to this article. We found it quite relevant to our findings related to respect and have cited it in the Discussion section.

7. On p. 11 second paragraph you provide some possible explanations for the decision to report patient information as normal when uncertainty exists. Perhaps another explanation that is worth exploring is related to an environment that doesn't encourage talking about uncertainty and has difficulty tolerating being wrong. This focuses on the problems within the environment, and not merely on the individual student/resident.

Great point! We have added this as another potential contributing factor to why residents may be hesitant to admit insecurities or gaps in knowledge.

8. The second part of the second full paragraph on p. 11 is unclear. Please revise.

We have revised this paragraph for clarify.

9. I think additional limitations should be explicitly written down:
   a. The fact that the 46 behaviors were only unprofessional behaviors may have led participants to "know" that they are expected to state that these are unprofessional behaviors.
   b. I think you should mention the fact that this cannot reflect institutional differences, as these residents just "arrived" to these institutions and their experiences happened elsewhere.
   c. You mention that their perceptions may change – I would add that their actions may change as well.

We have made edits and made sure that all three of these issues are addressed in the Limitations section.

10. Delete one "whether" in the second paragraph in the conclusions.
Done.

We look forward to hearing back from you.

Mariah Rudd
Duke University Hospital
Education Specialist
mariah.rudd@duke.edu