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Title: Satisfaction and attrition in Canadian surgical training program leadership: a survey of program directors

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Reviewer 1: Sherif Emil

General comments (author response in bold)

In survey development, it is not clear how the survey items were restricted to the most relevant items. Who determined what is most relevant? Was there consensus on relevancy?

Please see above response to editors. Manuscript has been edited for clarity.

What were the specialties of the 5 PD's who piloted the survey? Were they representative of the diversity of the overall cohort?

Thank you for this question – there were two subspecialty residency PDs, and 3 specialty PDs – 2/5 were female. Overall this was representative of the diversity of the overall cohort. Due to word restrictions, this was not initially included. We have clarified.

It is peculiar that only one pediatric surgery PD responded. It would be good for the authors to provide some thoughts of why this is.

An interesting observation. Without further details about the specifics of each program, we would assume potential reasons for lack of response are similar to other PDs.

One of the stressors for PDs are workforce issues as the number of Canadian residents declines and there is more reliance on foreign residents (e.g. recent Saudi crisis). Did the authors consider addressing this, especially since the survey was timed quite close to this crisis?

Thank you for this comment. We did not specifically address the challenges associated with training higher numbers of foreign residents. Certainly this would be an interesting area of stress and time requirement to explore in the future.

The authors also did not address the role of PDs in helping residents with career planning or finding appropriate positions for practice or further training. Can they comment on this role?

For the purposes of the survey, resident support and counselling (including career counseling) were included together. The role of the PD as a career counselor is also briefly discussed as one of the many complex roles PDs perform in both the introduction and discussion sections. We did not delve deeply into what role career counseling specifically plays in overall PD stress.

Should there be a more concrete recommendation in the paper for thresholds of adequate administrative and salary support, perhaps taking program size into account?

Thank you for this comment. We have tried to highlight that program size should be considered in overall PD support - “To compensate PDs equitably, institutions should look to standardize compensation and remuneration, based on standard requirements, as well as workload dependent on trainee number” (second paragraph of study implications) – however, the details on how this is best

accomplished, we believe, should be a discussion held with locoregional and national stakeholders, such as via the specialty committees for surgical training programs.

Reviewer 2: Jason Strelzow

General comments (author response in bold)

It would be useful to define the groups - I assume the PDs studied were entirely resident programs or were fellowship PDs also included? Can this be stated specifically. Or if both were included were differences found in their reported survey results.

Thank you for this comment. In Canada, both subspecialty and primary specialty training programs are considered “Residency programs” by the RCPSC. We continued with this terminology to avoid confusion with non-RCPSC clinical fellowships. From an accreditation standpoint, the requirements are the same. No significant differences were identified between residency and fellowship PDs but these were small numbers for comparison, and accordingly were not included in the manuscript.

In the introduction the authors discuss the unknown causes of attrition amongst surgical PDs and that the current study is hoping to evaluate for factors leading to attrition - I worry that the current study does not answer this question, but rather establishes stresses, potential sources of burnout and factors associated with satisfaction. The study design does not specifically address attrition or the potential reasons for leaving the post. This forms the base of a correlation rather than causation based analysis. To understand attrition the authors would need to evaluate PDs who have left their post - and formally surveyed reasons for such departures. I would therefore suggest the authors rework the final introductory sentences to make this a clearer point.

Thank you for this comment. We acknowledge this is an examination of factors contributing to PD satisfaction and stressors. This is intended to be an exploration, and is not intended to imply causality. Anecdotally, some of the PDs who had stepped down from the position at the time of the survey contacted us, to let us know that burnout from the position was in fact the reason for leaving. Modifications to introduction have been made.

Survey Development - Can the authors expand on the terms 'select experts' - Qualitative study design experts? medical educational experts? and what their qualifications are? What tools were used - interviews, Delphi or other consensus techniques used for development?

Please see above tables and responses which address the experts and who was involved in survey development. No tools other than those currently mentioned in the manuscript were used for survey development.

Can the authors expand on the survey development - There is a discussion about reduction of the survey items to only those 'most relevant'? How was this process evaluated/performed and standardized? Was a Survey and Qualitative Study design expert used? How was the process validated?

Please see above tables and responses. As described in references 11-13, the expert author group (which included qualitative study and survey research experts) performed creation and reduction of these items. Validation of survey is as described in paragraph 4 of the methods (survey testing) – if additional specific information regarding validation is required, please let us know.

Can the authors describe the process of 'domain' assessment and if any standardized & validated tools for assessment of these domains were or weren't used? ie. Maslow Scale for burnout, Satisfaction assessments JS-Q etc... If these tools were not considered can the authors discuss why? These could be useful for more objective, validated outcome assessments in the context of their study design

As a group, the authors felt the five domains of “demographic characteristics, compensation, administrative support, satisfaction, and challenges and factors contributing to burnout” would allow for a broad understanding of where stressors in the position lie, as well as to identify future potential areas for further investigation and attention. This study was not intended to quantify levels of burnout in PDs. Formal assessment with such scales fell beyond the scope of this survey and therefore those tools were not used.

Can the authors describe 'open-ended questions' - does this mean free-form text responses?

Yes, open ended questions in this study is used to describe free form text responses.

Can the authors describe in more detail the face validity steps for the questionnaire. The logical validity appears to be tested based on line 3 of page 13 by clinical sensibility analysis.

The sensibility analysis included NA and FCW, both of whom are PDs/have been PDs with sufficient insight into the position to comment on the face validity of the survey.

Line 28 Page 17 - I would caution the authors on the discussion / association based on survey finding about compensation and dissatisfaction - we cannot be sure the cause and effect here - Are dissatisfied PDs unsatisfied because of the pay they receive or does the poor pay leave them dissatisfied. Based on the description of questions knowing the relationship directionality is difficult to ascertain.

In our analysis, we have found a statistically significant association between satisfaction with compensation and plans to leave the role. There was no association between time spent, administrative support, etc and thoughts of leaving the position early. Based on this, we believe the conclusion that satisfaction with the compensation is the issue, and not the position is appropriate.

Line 27/28 page 18 - the ACGME has mandated FTE requirements for administrative support based on program size - Consider revising.

Thank you for bringing this new information to our attention. Manuscript has been amended.

Can the authors expand on the limitations of the current survey based study - Only 60% of eligible PDs completed the survey - this suggests a broader understand of potential factors may be at play. This is particularly important given the topic of burnout/administrative overload and lack of support. Those not responding may (large supposition) be the most overworked/burned out etc.

Thank you for this comments – please see previous editors comments/responses for expanded limitations.

I would also suggest an expansion of the limits of survey design, implicit bias of recall and recency and the validity of the questions.

Limitations have been modified to reflect this.

Can a copy of the survey be provided for the reader which will allow for additional critique of the question structure/design.

Done.