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Title: Evaluation of a Dragons' Den symposium to spread primary health care innovations in Quebec, Canada: mixed-method study using quality improvement e-surveys

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Reviewer comments

Reviewer 1: Dr. Hasanain Ghazi

1. Better to put a qualitative method to give a clear idea for readers.
2. Better to put the location in the title, as the data collected in a specific place

Author response

We would like to thank Dr. Ghazi for these helpful suggestions.

Thank you for this suggestion. We have added more detail on our qualitative methods, particularly the content analysis

“Qualitative content analysis (18) was conducted to summarize participants’ responses to open-ended questions. Qualitative data was coded inductively and summarized by a mixed-methods trained doctoral candidate in health services research (MAS). To enhance trustworthiness, content summaries were reviewed by MB (qualitative researcher with expertise in primary healthcare innovations), MJC and MDP (who both have expert-knowledge of the symposium, Patient’s Medical Home, and family medicine related context), and discussed amongst authors. Joint displays were used to present related quantitative and qualitative results side-by-side and to facilitate mixed methods integration (19).” (lines 108-115)

We have also followed qualitative reporting guidelines (SRQR guidelines) to ensure all relevant information is included.

We have modified our title to “ Dragons’ Den symposium to spread primary healthcare innovations: mixed method results from quality improvement e-surveys in Quebec, Canada”

We have mentioned qualitative in our abstract “We conducted quality improvement e-surveys to collect quantitative and qualitative data”

We have added “in Quebec, Canada” to the title.

Reviewer 2: Dr. Lee Green

The abstract depicts the work accurately.

The introduction frames the problem and the purpose of the paper clearly. A modest but

adequate number of important references from two enormous literatures (implementation and Medical Home) is cited.

The conduct of the Den is described in sufficient detail and clarity. The evaluation plan is not very rigorous by research standards, but is appropriate to the purposes and resources of a QI project.

Response rates were good, except for clinical leads (unsurprising).

The tables are clear, useful, and not redundant. In the methods, what is a University Family Medicine Group? That is important to understand: if these groups are representative only of academically-affiliated practices, that has implications for generalizability. It wouldn't be a problem, but would need to be clear. Table 1 item 2 provides hints but the methods should address it clearly.

2. The paper would be stronger if the follow up questionnaires and analysis probed specifically for information known to be important in established implementation theories, e.g., Normalization Process Theory. The authors do describe connections between their work and Diffusion of Innovation, for example, but the questionnaires don't seem to have probed for the specific factors involved. That could be done at modest cost, within the reach of a QI project, and low response burden, and the authors may wish to consider it in follow-on work.

3. The section on limitations is generally sufficient but might acknowledge the lack of data to address specific barriers in diffusion or normalization.

Author response

We would like to thank Dr. Green for providing such constructive feedback. Thank you for this positive feedback.

Thank you for this suggestion. We have added a short description and reference of University Family Medicine Groups: "University Family Medicine Groups are academically affiliated interprofessional primary healthcare teams with a teaching mission – intended to expose family medicine residents and other trainees to best practices (16)." (lines 40- 42).

We have also added a sentence in the study limitations "Clinical leads were representatives from University Family Medicine Groups, academically affiliated primary healthcare teams, which may limit the generalizability of our findings" (lines 194-196)

Thank for this helpful suggestion. We have clarified the link between the surveys and the innovation-decision process, central to Roger's diffusion of innovation theory in the methods as well as in appendix 2.

"Our methods were informed by Roger's *innovation-decision process* (10), which describes the stages of the individual-level process of adopting innovations and is central to the *Diffusion of innovation theory* (see appendix 2)." (lines 29-31)

"Informed by Roger's *innovation-decision process* (10), we conceptualized our outcomes as a process, along which spread outputs, short-term and medium-term outcomes could occur following the symposium. We evaluated the symposium's effects as a *communication channel*

and its outcomes related to *knowledge* of innovations, *persuasion and decision* to adopt innovations, and *implementation* of innovations (see Appendix 2). ” (lines 71-75)

Thanks to your feedback, we will further investigate these elements in the evaluation of the next symposium (in Fall 2021).

We have added the need to collect more data on the barriers to spread in the paragraph on future evaluations: “Future evaluations of similar activities should collect more data on respondents’ characteristics, implement strategies to increase response rates, collect more in-depth data on barriers, identify strategies to better target stakeholders, and add follow-ups at 12 and 18 months to evaluate sustained effects on spread. Conducting qualitative case studies would provide valuable insight into how to better support spread.” (lines 216-220).

Reviewer 3: Dr. Terrence McDonald

Thank you for the opportunity to review your important work.

ABSTRACT

1. The one-line statement in the Abstract Interpretation is very concise and may benefit from some additional information to highlight the positive aspect of the findings presented: Here is a suggestion for the authors to consider: "The format of a Dragon's Den symposium appeared to facilitate the successful spread of a number of primary care innovation, its application in other jurisdictions may have similar value".

INTRODUCTION

Reads very well overall. A few suggestions to enhance and focus the content:

1. line 17-19 ...:" family practice identified by its patients" is rather subject and does not appear to add to the next sentence contains. The focus is the PMH and how it is defined, not viewed.
2. line-22-to23 may benefit from more tie-in, with a segue sentence to assist with flow.
3. Suggest posing the research question using current objective and any hypothesis held by the research team

METHODS

1. Might be very helpful here a data-flow diagram of who the series of surveys were employed, the timelines, and numbers who opted to response and type of response received. This might allow the reader to follow the flow of the study and understand (by its design) how it worked and obtained the resultant outcomes and success and short- comings identified. As such, converting one of the tables into a flow-diagram or infographic – might be very useful.
2. Line 36-38 needs a reference.

RESULTS

1. Table 1. Does not appear to add information relevant to the questions being explored, might be better placed as an appendix and focus more how the study was designed, timeline and responses (and their themes and offered by whom).

2. Table 2 & 3 & 4 - these tables have some very valuable information but in its current format the message appears somewhat difficult to interpret.

This information might be better placed and consolidated in a chart or figure and perhaps consider grouping the themes and then, highlight not just the response rate but the actual agreement and discordance - among the different categories of representative dragons vs. clinical leads -- to better highlight how this process was received and where to future can be directed.

3. Also it might be valuable to create two separate categories for Clinical Lead and Dragon-Facilitators and report these results, given that they are different.

4. Line 116 Heading and Paragraph: Suggestions for symposium improvements and Line 132 Heading and Paragraph: Suggestions for further support for innovation spread - may better fit in appendix and/or summarized into themes and combined, the feedback is important but more concise working and themes might focus things for the reader.

INTERPRETATION

This section needs to be shortened and focused.

1. It needs work to place the results (not just restated), and re-focused on the question(s) posed by this work and the results. A statement of the paper's objective in line 29-31 perhaps in the form of a question may assist in guiding. Placing the work in the context of other work similar to it and complimented by Berwick's recommendation may greatly highlight the positive results that appears to be found.

2. There appear to be three main questions being considered here that need to be more clearly stated:

- a) what was their uptake and by whom?
- b) what elements of the symposium (based on feedback received) were effective in uptake?
- c) what changes in the symposium structure might enhance uptake/scale and spread?

3. One of key questions - for future work may in fact rest in the data being analyzed here, who best and how to target stakeholders, decision makers in this symposium format for successful adoption (i.e. sustained finding and spread/scale).

4. Line 171 'Participated' appears to be a typo.

Author response

We are very grateful for Dr. McDonald's thoughtful suggestions to improve our work. Thank you for your comments!

Thank you for this suggestion. The interpretation in the abstract now reads: “The Dragon's Den symposium seems to have supported participants in achieving the early stages in the process of spreading primary healthcare innovations. Replicating Dragon’s Dens in other settings may help further spread healthcare innovations.”

We have reworded the description of the PMH, It now reads: “ the Patient’s Medical Home: a vision for Canada’s primary healthcare practices to provide patients with most of their care – readily accessible within communities, centered on patients’ needs, where patients have a personal family physician working with an interprofessional team, and integrated with other health services (15).” (lines 15-18).

We have rewritten the sentence. We have rewritten the objective and added a hypothesis:

“Our objective was to evaluate the effects of the Dragons’ Den symposium on spreading primary healthcare innovations. We hypothesized the symposium would help participants progress through the innovation-decision process (10), which is essential to spreading innovations.” (lines 20-23).

Thank you for the great suggestion! We have added Figure 1, a flow diagram, to clarify timelines, participant type and response rates.

We have added a reference to the Internet Movie Database (IMDb).

As requested by the editor, we have left the table in the main manuscript for now. We have however substantially rewritten the methods section to add details on the study design, timeline and qualitative analysis.

We have revised Tables 2, 3, 4 to facilitate interpretation, further grouping qualitative content when possible.

Unfortunately, it is difficult to contrast between Dragon-Facilitators and clinical leads as they were surveyed anonymously together. We have made sure this is mentioned in our limitations.

“Additionally, immediately post-symposium, clinical leads and Dragon-Facilitators were surveyed together, although their experiences may have differed. ” (lines 196-197)

Thank you for suggesting this.

Unfortunately, it is difficult to contrast between Dragon-Facilitators and clinical leads as they were surveyed anonymously together. We have made sure this is mentioned in our limitations.

“Additionally, immediately post-symposium, clinical leads and Dragon-Facilitators were surveyed together, although their experiences may have differed. ” (lines 196-197)

We value the suggestion to separate them and will survey them separately in the next edition of the symposium (Fall 2021).

As requested by the editor, we have left this content in, but have summarized it further to make it more concise. We have also reorganized the results section into three phases to facilitate

interpretation.

Thank you for your very helpful feedback on the interpretation and suggestions. We have reminded readers of our hypothesis at the beginning of the section and suggested our results confirm our hypothesis.

“We hypothesized the symposium would help participants progress through the stages of Roger’s innovation-decision process (10), essential to innovation spread. Our results support this hypothesis: the Dragons’ Den symposium seems to have helped achieve spread outputs, short-term and medium-term outcomes involved in the process of spreading innovations.” (lines 155-158).

We have also added some references to other work and compared our findings:

“While very little research has evaluated the effectiveness of strategies to support primary healthcare innovations spread in high-income settings (4), it has been estimated that fewer than 40% of innovations and quality improvement initiatives spread to other contexts (20, 21). In comparison, the Dragons’ Den symposium seems to have supported a higher rate of innovation spread nine-months post-symposium (clinical leads: 79%, n=18, adopted an innovation; innovations: 52%, n=12, spread their innovation).” (lines 168-173)

Thank you for the suggestion, we have substantially reorganized the interpretation section to fit with the journal’s requirements and your helpful feedback.

This is an interesting idea. Given limited word count, we couldn’t develop this idea much, but have added

“Future evaluations of similar activities should collect more data on respondents’ characteristics, implement strategies to increase response rates, collect more in-depth data on barriers, identify strategies to better target stakeholders, and add follow-ups at 12 and 18 months to evaluate sustained effects on spread. Conducting qualitative case studies would provide valuable insight into how to better support spread.” (lines 216-220)

Thank you for spotting that. We have corrected to “participants.”