

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Identifying factors influencing sustainability of innovations in cancer survivorship care: a qualitative study
AUTHORS	Urquhart, Robin; Kendell, Cynthia; Cornelissen, Evelyn; Powell, Byron; Madden, Laura; Kissmann, Glenn; Richmond, Sarah; Bender, Jacqueline

VERSION 1 – REVIEW

REVIEWER	Bogda Koczwar Flinders University
REVIEW RETURNED	27-Jul-2020

GENERAL COMMENTS	<p>This paper reports on a qualitative study aimed to identify factors and processes influencing the sustainability of innovation in cancer survivorship care in Canada.</p> <p>The paper is well written and easy to follow with relevant methodology clearly outlined. The theoretical framework that supports research design and rationale are clearly articulated. Statements are supported by relevant quotes although I found it a little confusing as some quotes were in italics and others not.</p> <p>The paper would benefit from more description of the study participants – their professional background, seniority, gender etc. How were the innovations identified? Could the interview guide be provided? What proportion of projects were categorized as not sustained? Was there a difference in factors identified by those whose interventions were not sustained?</p> <p>I was intrigued that the issue of resources was not featuring highly on the list of requirements – but the role of management and priorities of the institution reflected direction of resources – were these factors surrogates for resource availability? Could authors comment please as to whether they consider their findings generalizable to other health care settings or not? What are the implications of their research on research, practice and policy?</p>
-------------------------	--

REVIEWER	Ted Skolarus, MD, MPH University of Michigan VA Ann Arbor Healthcare System Ann Arbor, MI USA
REVIEW RETURNED	03-Sep-2020

GENERAL COMMENTS	Summary: This is a robust qualitative study investigating sustainability of cancer survivorship innovations across Canada, in a larger context of better understanding sustainability of innovations. The methods include semi-structured interviews with
-------------------------	---

	<p>27 implementation leaders regarding 25 innovations and were grounded in state-of-the-art implementation science frameworks including the dynamic sustainability framework and Nilsen’s categorization schema regarding implementation outcomes. The investigators find seven determinants, six processes, and three implementation outcomes perceived to influence sustainability and provide relevant quotes and contextualization in the sustainability and adaptation literature to support these findings. They also find a link to broader literature regarding buy-in. The authors conclude these findings support and expand the existing sustainability literature providing a resource for implementation teams to consider upfront when adopting innovations in cancer care.</p> <p>Major concerns</p> <ul style="list-style-type: none"> - This is a very-well written and conducted qualitative examination of national cancer survivorship innovations. The authors clearly motivate their study and the aims of the study are articulated. The melding of 3 implementation frameworks and categorization of necessary vs. important are innovative approaches to this work. The methods are robust, including the COREQ reporting criteria, findings appear valid, and the rich discussion expands the adaptation and sustainability literature. Several considerations may improve the manuscript. - Better understanding the survivorship innovations would help the reader with a key determinant highlighted by the investigators, i.e., evidence. It appears at least some participants indicated the impact of the survivorship efforts may be less than other prioritized areas with evidence-based benefits like survival – e.g., treatment. This raises questions not only about the evidence-base for survivorship innovations, but also the ‘softer’ outcomes typically associated with these interventions and relevance to sustainability. In other words, whether leadership and management should sustain innovations that are less valued by payers and performance metrics, but not patients and caregivers, seems relevant and is discussed briefly. This is a complex issue, though potentially related to the chronic disease management as mentioned in the discussion. - The frameworks are justifiably mentioned in the initial portion of the manuscript though may be able to more directly be included in the summation of the findings. E.g., how would these findings be contextualized more directly within the DSF? This would help build out the field’s understanding of the selected frameworks. <p>Minor concerns</p> <ul style="list-style-type: none"> - No date range for study interviews.
--	---

VERSION 1 – AUTHOR RESPONSE

Reviewer 1

1.1. This paper reports on a qualitative study aimed to identify factors and processes influencing the sustainability of innovation in cancer survivorship care in Canada. The paper is well written and easy to follow with relevant methodology clearly outlined. The theoretical framework that supports research

design and rationale are clearly articulated. Statements are supported by relevant quotes although I found it a little confusing as some quotes were in italics and others not.

Response: Thank you for this comment. In reference to the quotes, we have removed the italics, which we had used when the quotes were 40 words or less.

1.2. The paper would benefit from more description of the study participants – their professional background, seniority, gender etc.

Response: Thank you for this question. Unfortunately, we did not collect participant demographics beyond role in the implementation/organization and gender. If the Reviewer or Editor would like a table included with these data, we can do so.

1.3. How were the innovations identified?

Response: This is a great question. Upon reflection, we should have provided this information in our original manuscript. The identification of innovations involved multiple steps undertaken by two authors [RU, LLM]. First, they viewed all archived rounds and reviewed all publications posted on the Canadian Cancer Survivorship Research Consortium (CCSRC) website. This CCSRC started in 2008 to enable national and international collaboration in building the evidentiary base in cancer survivorship. Occurring since 2012, the CCSRC rounds are regularly held webinars to highlight research and clinical projects and programs from across Canada in cancer survivorship. Next, they performed multiple PubMed searches with combinations of relevant search terms (e.g., cancer, survivor*, Canada, rehabilitation, interventions, physical activity) to identify additional publications to identify potential innovations. Finally, they reached out to the individual responsible for survivorship care / programs at all provincial cancer agencies (or their equivalent) to identify any additional relevant initiatives in each province. Upon a final list of all potential innovations, they assessed whether each innovation was evidence-based, as per the criteria described in the manuscript. We have now added the following sentences to the Methods section of the revised manuscript (pg. 6):

Recruitment involved a two-phased process. First, we had to identify innovations of interest and, second, recruit leaders and staff involved in those innovations. The identification of innovations was multipronged: 1) viewing of all archived rounds and reviewing of all publications posted on the Canadian Cancer Survivorship Research Consortium (CCSRC) website; 2) multiple PubMed searches with combinations of relevant search terms (e.g., cancer, survivor*, Canada, rehabilitation, interventions, physical activity); and 3) speaking with the individual responsible for survivorship care and programming at all provincial cancer agencies (or their equivalent) to identify additional relevant initiatives in each province. Upon a final list of all potential innovations, we assessed whether each innovation was evidence-based, as per the criterion described above [31].

From those innovations deemed evidence-based, we ...

1.4. Could the interview guide be provided?

Response: Absolutely. We have provided the interview guide as Additional File 2.

1.5. What proportion of projects were categorized as not sustained? Was there a difference in factors identified by those whose interventions were not sustained?

Response: This is a great question, and one that is difficult to answer in some ways depending on one's definition of sustainment (e.g., Do all innovation components and activities require sustainment? To what degree is a modified innovation a new innovation? etc). Nevertheless, of the 25 innovations, 5 were not sustained, while 20 were sustained but most of these were adjusted and modified to some degree over time (as described in the manuscript). We have now added the following sentence to the Results section of the revised manuscript (pg. 8):

Of the 25 innovations, 20 were sustained to some degree in that activities continued after the initial funding period. Five were not sustained.

1.6. I was intrigued that the issue of resources was not featuring highly on the list of requirements – but the role of management and priorities of the institution reflected direction of resources – were these factors surrogates for resource availability?

Response: We thank the Reviewer for this question. We categorized resources as important but not necessary because, for nearly all innovations, neither the loss of initial funding nor additional funding, equipment, or space to expand beyond the implementation phase, resulted in the loss of the innovation when other necessary factors were present. Thus, resources were indeed important, but teams/programs were able to sustain innovations without ongoing or additional funding, equipment, etc. Having said this, we do agree that the level of managerial support and institutional priorities reflected the direction of resources. For many innovations, where managers were supportive and/or institutional priorities aligned, the innovation was sustained (and sometimes scaled up) through existing resources, including incorporating the innovation's components into existing staff responsibilities. Conversely, for one of the innovations that was not sustained, changing institutional priorities also reflected a change (drop) in resources that might have supported sustainment. We have now added the following sentence to the Discussion section of the revised manuscript (pg. 18-19) to acknowledge the interdependence between these factors:

Moreover, both managerial support and organizational- and system-level priorities (necessary determinants) will often reflect the magnitude and nature of resources (important determinant) dedicated to any initiative.

1.7. Could authors comment please as to whether they consider their findings generalizable to other health care settings or not? What are the implications of their research on research, practice and policy?

Response: These are important questions. We considered the question of generalizability (or transferability) extensively as a group, and we believe the findings are generalizable to other health care settings. Specifically, our team has expertise not only in cancer survivorship but also in primary care, dietetics, public health, social work, mental health, chronic disease management, health policy, and information management/information technology, in Canadian, Australian, and US contexts. Based on our experience in these fields, including clinical and managerial expertise, we feel the findings are transferable across settings. In addition, the findings are aligned with what we see in the literature on sustainability (which has been conducted in other settings and contexts), increasing confidence in terms of their transferability.

As per the second question, there are a number of implications of this research. We have suggested several avenues for future research in the manuscript (e.g., developing metrics and methods to prioritize these factors, and combinations thereof, and link them to appropriate strategies). From a practice perspective, however, these findings may help inform development of planning and assessment tools to help support the sustainment of innovations from the onset of implementation. For example, instruments to assess capacity for sustainability (based on the influencing factors) and related guidance to increase capacity in specific domains, and tools to assist with monitoring key determinants and processes. We have now added the following sentences to the Discussion section of the revised manuscript (pg. 15 & pg. 20):

From a practice perspective, they can be used to develop and/or select instruments and tools to assess capacity for sustainability, increase capacity in specific domains, and to assist with the ongoing monitoring of key determinants and processes.

Given that the findings also align with the emerging literature on sustainability, conducted across a range of health conditions and settings, the findings are likely transferable.

Reviewer 2

2.1. This is a robust qualitative study investigating sustainability of cancer survivorship innovations across Canada, in a larger context of better understanding sustainability of innovations. The methods include semi-structured interviews with 27 implementation leaders regarding 25 innovations and were grounded in state-of-the-art implementation science frameworks including the dynamic sustainability framework and Nilsen's categorization schema regarding implementation outcomes. The investigators find seven determinants, six processes, and three implementation outcomes perceived to influence sustainability and provide relevant quotes and contextualization in the sustainability and adaptation literature to support these findings. They also find a link to broader literature regarding buy-in. The authors conclude these findings support and expand the existing sustainability literature providing a resource for implementation teams to consider upfront when adopting innovations in cancer care.

Response: Thank you for these comments.

2.2. This is a very-well written and conducted qualitative examination of national cancer survivorship innovations. The authors clearly motivate their study and the aims of the study are articulated. The melding of 3 implementation frameworks and categorization of necessary vs. important are innovative approaches to this work. The methods are robust, including the COREQ reporting criteria, findings appear valid, and the rich discussion expands the adaptation and sustainability literature. Several considerations may improve the manuscript.

Response: Thank you again.

2.3. Better understanding the survivorship innovations would help the reader with a key determinant highlighted by the investigators, i.e., evidence. It appears at least some participants indicated the impact of the survivorship efforts may be less than other prioritized areas with evidence-based benefits like survival – e.g., treatment. This raises questions not only about the evidence-base for survivorship innovations, but also the 'softer' outcomes typically associated with these interventions and relevance to sustainability. In other words, whether leadership and management should sustain innovations that are less valued by payers and performance metrics, but not patients and caregivers, seems relevant and is discussed briefly. This is a complex issue, though potentially related to the chronic disease management as mentioned in the discussion.

Response: We thank the Reviewer for this comment. Due to confidentiality reasons, we are not naming the innovations or providing enough information for easy identification (Canada is a surprisingly small country!). However, we certainly recognize the Reviewer's point. We also agree with the Reviewer that the findings raise questions about the evidence base for survivorship innovations as well as the "softer" outcomes associated with these innovations, and that the nature of this evidence base has implications for sustainability. Related to this, we have now added the following paragraph to the Discussion section of the revised manuscript (pg. 19):

Several of the study findings also highlight an important issue in cancer survivorship care and programming: namely, that the evidence base for survivorship innovations is of lower quality, and the resulting outcomes are "softer," compared to the evidence base and outcomes in other areas of cancer care (e.g., diagnosis and treatment). While participants in this study stated that evidence of an innovation's effectiveness contributed to sustainability by strengthening the case for funding and helping consolidate buy-in from frontline staff (see Table 1), they also noted that it can be difficult to secure management support for innovations in survivorship care, in part because it does not result in quantifiable metrics like other areas of cancer care. As such, they perceived that survivorship care is viewed as a desirable, but non-essential, service within cancer care organizations. These issues undoubtedly impact the ability to sustain survivorship innovations in practice, particularly where leaders and managers have to decide between

funding/resourcing services with hard performance metrics to demonstrate effectiveness versus services with metrics that are less traditional or more difficulty to quantify.

2.4. The frameworks are justifiably mentioned in the initial portion of the manuscript though may be able to more directly be included in the summation of the findings. E.g., how would these findings be contextualized more directly within the DSF? This would help build out the field's understanding of the selected frameworks.

Response: This is a great question. We see these findings as being particularly relevant to the DSF. Indeed, the findings demonstrate that innovation adaptation (the key premise of the DSF) was necessary to sustainability due to the need to optimize fit within the practice setting but also to evolve with changes in the setting and system at large (e.g., changing priorities, staff turnover, etc). In fact, we found that the innovations were adapted (e.g., components, practitioners, delivery platforms) in response to changes in the practice setting (e.g., staffing, information systems, processes for training) and the broader ecological system (e.g., other practice settings, policies, population characteristics). Furthermore, the data would suggest that change is constant in that participants continued to speak of ongoing adaptations and planned future cycles of adaptation. Thus, the findings lend credence to the DSF's postulation that innovations should not be optimized prior to implementation but rather require (and benefit from) ongoing adaptation and optimization. This would reinforce the need for ongoing monitoring and feedback mechanisms to assess not only the innovation itself and related outcomes, but also changes in the setting and system at large to adapt as needed. Thus, monitoring and feedback mechanisms may act as a moderator to sustainability via supporting appropriate and timely adaptation. In response to this comment, we have now added the following sentences to the Discussion section of the revised manuscript (pg. 17):

In fact, the findings align well with the DSF and its postulation that innovations should not be optimized prior to implementation but rather require (and benefit from) ongoing adaptation and optimization. In this study, innovations were adapted (e.g., components, practitioners, delivery platforms) in response to changes in the practice setting (e.g., staffing, information systems, processes for training) and the broader ecological system (e.g., other practice settings, policies, population characteristics). It is important to note, however, that many of the described adaptations were made in response to unanticipated changes and challenges, and thus might be better termed modifications [39]. These findings reinforce the need for ongoing monitoring and feedback mechanisms to assess not only the innovation itself and related outcomes, but also changes in the setting and system at large to support appropriate and timely adaptation.

2.5. No date range for study interviews.

Response: Our apologies for this oversight. The date range is now provided in the revised manuscript (pg. 8): August 2017 to March 2018.

Additional comments

Please complete your reporting checklist by indicating the page number where each point can be found.

Response: We have now included the page number in the checklist where each point can be found.

VERSION 2 – REVIEW

REVIEWER	Ted Skolarus, MD, MPH University of Michigan, VA Ann Arbor Healthcare System HSRD Center for Clinical Management Research
REVIEW RETURNED	06-Jan-2021
GENERAL COMMENTS	All concerns addressed, excellent addition to the cancer survivorship and implementation literature.

