Author's response to reviews

Title: Advanced Practice Registered Nurses, Physician Assistants and Cancer Prevention and Screening: A Systematic Review

Authors:

Alexandria A Smith (lsmith@legacyforhealth.org)
Deanna L Kepka (deanna.kepka@hci.utah.edu)
K. Robin Yabroff (yabroffr@mail.nih.gov)

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Lexi Smith, MSPH
American Legacy Foundation
1724 Massachusetts Ave NW
Washington, DC 20036

Dr. Terry Cronan
BioMed Central Editor
San Diego State University

1562617811051217 - Advanced Practice Registered Nurses, Physician Assistants and Cancer Prevention and Screening: A Systematic Review

Dear Dr. Cronan:

Thank you for the opportunity to resubmit the revised manuscript, “1562617811051217 - Advanced Practice Registered Nurses, Physician Assistants and Cancer Prevention and Screening: A Systematic Review.” We were pleased to see that the reviewers highlighted many strengths of our study, and have fully addressed their comments as described below and as noted by line and page number for the manuscript. We believe the manuscript is noticeably improved and truly appreciate the reviewers’ input from the review.

Editorial comments

1. Provide additional background on APRNs/Pas in the introduction.

As suggested by the reviewer we moved a paragraph from the discussion to the introduction (pages 3-4, lines 60-75). As a result, we provided additional background on APRNs and PAs in the introduction (see response to comment 3 below). We appreciate this feedback and believe that it creates a strong beginning for our paper.

2. Provide reference support for the statement about underserved populations having poorer cancer outcomes.

We have provided several references to support our statement about underserved populations having poorer cancer outcomes (page 4, lines 53-54).

3. Please answer the question about whether during your study period, there are increases in the number of APRNs/PAs in primary care that work directly with the underserved.

We added several citations reporting a dramatic increase of APRN/PAs since 1990 and how the need for primary care providers in underserved locations altered the profession of APRN/PAs by proving their autonomy. Additionally we moved the second paragraph from the discussion to the introduction (page 4, lines 60-75).
4. **List the exact search terms used**

We have listed the exact search terms in the methods section of the paper (page 6, lines 100-108). We have also maintained the search term chart in the Appendix so that the reader can see the way that these terms were grouped together and the article yield for each search term grouping.

5. **List inclusion criteria in the method section as suggested by the reviewer.**

We have specifically included the inclusion criteria in the methods section as was suggested by reviewer #2 (page 6, lines 111-116).

6. **Consider reducing the number of tables**

We have included information about the type of study in Table 2 and 3 but we believe that summarizing the articles in Table 1 provides valuable information for the reader. The information summarized in Table 1 shows the distribution of published literature on the type of provider, type of study, study size and behavior. This summary information is a valuable tool to describe the current state of the literature and how these issues can be addressed in the future and we have included additional information in the results section. For example, having summary information in Table 1 helps to highlight the small number of intervention studies as mentioned by reviewer number 2 and by the editor below. However, if the editor disagrees and would prefer that we reduce the number of tables for publication, we will make these changes.

7. **Address the fact that there were so few intervention studies.**

We have addressed the fact that there were so few intervention studies in the results and the discussion (page 8, lines 160-161 and page 13, lines 273-275). This fact that there are so few intervention studies is also shown so clearly in Table 1. This is one of the reasons that we would prefer to keep Table 1.

**Reviewer Number: 1**

Abstract:
1. It may be helpful to provide some additional background on APRNs/PAs in the introduction section. The authors mention underserved populations have poorer cancer outcomes. Is there any background that can be added about an increasing role of APRNs/PAs in settings that primarily serve minority/low-income populations? In other words, over the study period 1990-2011, is there a known increase in the overall numbers of APRNs/PAs and specifically in primary care settings that work directly with minorities, low-income, or new insured through ACA (e.g. community health centers, etc). Similarly, has there been a shift in the role of these practitioners over the course of the study period? Some of this context would guide an audience familiar with the cancer prevention literature but
less familiar with the role of APRNs.

We cited Cooper (2007) and Grumbach et al. (2003) which report a dramatic increase of APRN/PAs since 1990 and how the need for primary care providers in underserved locations altered the profession of APRN/PAs by proving their autonomy. Additionally we moved the second paragraph from the discussion to the introduction (pages 3-4, lines 60-75)

2. Methods section, paragraph 1. It will be helpful to list out the exact search terms used both from the recommended list and those used by the authors.

We have added the exact terms that we used in the methods paper (page 6, lines 100-108). We used all of the terms recommended from the NIH library, so we did not distinguish these two groups in the methods section. Search terms are also listed in the Appendix along with the number of published articles identified with each group of terms.

3. Method section, para 1. Why were studies with less than 100 patients excluded from the analyses? Is there a rationale for the 100 patient cut point? How many studies were excluded based on this criterion? Many clinic-based studies have smaller samples and this criterion may have excluded some relevant papers.

We excluded studies with less than 100 participants to allow for more stable estimates of cancer prevention and screening. This approach has been used in other systematic reviews. We have added a comment about this rationale in the methods section and listed the number of studies excluded purely on sample size (page 6, lines 115-116). This small number encourages us to continue to use this criterion for our review.

4. Discussion section, para 1. The authors note that less than 25% of physicians report working with APRNs to provide colorectal cancer screening. Many crc screenings take place by specialists and not in the primary care setting and depending on the screening type, can be more complex that Pap tests and mammograms, as noted in para 3. Perhaps para 3 can be moved up or this sentence can me moved into para 3.

As suggested by the reviewer we moved this piece of information. Due to the fact that many CRC screenings do take place by specialists it seemed more appropriate to put this aspect of the study in the discussion, following the discussion of use of specialists (page 12, lines 248-255).

5. Discussion section, para 2. Consider moving this to the introduction section. Some of this paragraph is relevant to comment #1 above.

As previously suggested, we moved this paragraph to the introduction (pages 3-4, lines 60-75). We appreciate the context that it adds to the description of APRN/PAs in the introduction.
Discussion section, para 1. “APRN/PAs expect to provide or recommend Pap tests, mammograms and FOBT and physicians are currently working concurrently with APRN/PAs to screen for cervical cancer.” This sentence is slightly awkward and wording can be improved to eliminate confusion.

We re-wrote this sentence and clarified the concept (page 11-12, lines 234-237). We appreciate the feedback to clarify this concept.

Reviewer Number: 2

This manuscript reports the results of a systematic review of the use of Advanced practice nurses and PAs in delivering cancer prevention interventions to patients. The comments below are meant to improve the readability of the manuscript.

1. The inclusion criteria should be clearly and succinctly stated in a paragraph. This should occur in the methods section, even if the criteria are obvious, and should almost be in list form to be clear and organized. Right now they are woven into the text and not clearly stated. For example, measuring at least one cancer prevention behavior of the following types…… should be one criterion. What about year published? What about measuring the behaviors of the APRN/PAs? It would just help to have this paragraph at the beginning of the methods section for clarity.

As previously suggested, we included all of this information in one location in the methods section (page 6, lines 111-116). We agree that clarifying the inclusion criteria strengthens our study.

2. Isn’t most of the info in table 1 redundant with tables 2 and 3? I think table 1 could be dropped and incorporated into tables 2 and 3.

We have included information about the type of study in Tables 2 and 3, but we believe that summarizing the articles in Table 1 is valuable for the reader. Information summarized in Table 1 shows distribution of literature on the type of provider, type of study, study size and cancer prevention or screening behavior. This summary information is a valuable tool to describe the current state of the literature and how these issues can be addressed in the future. If the editor disagrees and would prefer that we reduce the number of studies for publication, we will make these changes.

3. Could the authors mark which of the studies were intervention studies? That is a key feature and one that I was surprised to see so low. And please make a comment on this.

We have addressed that there were so few intervention studies in the results and the discussion (page 8, lines 160-161 and page 13, lines 273-275). This fact of so few intervention studies is also shown so clearly in Table 1 is one of the reasons we would prefer to keep Table 1.
4. The paragraph in the discussion summarizing the design limitations is a good one. Could the authors make sure that the results section presents all the data necessary in the text to make these comments? Sometimes it seems to be there and sometimes it is just assumed. It’s important in a review to actually ID the limitations of the literature in the text.

We have provided additional references in the results section (and also made reference to where these data are available in Table 1) so that readers will know what studies we are referring to in the discussion (pages 8-11).

Thank you again for the opportunity to revise and resubmit this manuscript. We believe we have fully addressed all the editorial and reviewer concerns as described above and the manuscript is greatly improved.

Sincerely,

Lexi Smith

CC: Robin Yabroff

Deanna Kepka