Reviewer's report

Title: Change in Colorectal Cancer Screening Intention Among Adults Less than 50 Years of Age

Version: 1 Date: 7 April 2014

Reviewer: Michelle Cunich

Reviewer's report:

The paper is generally well written and makes some interesting points about CRC screening intentions of people as they become age-eligible in the US. The inclusion of contextual and health care factors in addition to socio-demographic factors for CRC screening intention at the individual level is a helpful addition to the literature in this area. The description of methods needs some further clarification. The results also require some clarification. The discussion is supported by the data, although some of the issues raised in the conclusion may be better suited to the discussion.

I have a number of comments:

Major Compulsory Revisions:

1) Measures: Authors state “We determined whether participants were living at or below poverty level by examining combining yearly household income and the number of individual supported on this income, which were compared to the 2005 Federal Poverty Guidelines” (page 7 in Methods). Remove “level” and put in “line” if this is actually referring to the poverty line for the US. What is the poverty line for the US in 2005? There is no reference to what this amount of equivalised household income actually is for 2005. No reference and this amount (median household income for poverty line) may be outdated compared to when the study is being reported (2005 vs. 2014). How did the authors construct their income measure? Did they use the median of annual equivalised household income? Did they adjust for people with $0 incomes in any way? No references so unclear how this measure was used to assess whether an individual was from a household below or at the US poverty line in 2005. Also, 12.5% of the sample have missing values for this variable. How was this dealt with in the models? Did you exclude these observations from the analysis or do they remain, and if they remained, how did you deal with this in the models?

2) Authors refer to “final logistic regression models” but the paper would benefit from clarifying what this means. These appear to be models generated by only including those variables which were significant at p<0.10 in the bivariate analyses (as stated on page 7). And yet, the overall p-values for the variables considered are not reported. E.g. “Puerto Rico” significant in bivariate analysis (although not indicated with a star in Table 2) and “US” not significant but included these in the final model for consistent positive intention. Why? Was “place of birth” overall significant at p<0.10?
Other queries:
1. “English as first language” significant from bivariate analysis for new intention, but not included in the final model. Why?
2. “Number of role responsibilities” significant at p<0.05 in both bivariate analyses for consistent positive intention and discontinued intention but only included it in the final model for discontinued intention. Why? And why not only including variables that are significant at p<0.10 as stated in Analysis section?
3. "Role conflicts" was significant at p<0.10 from bivariate analysis for discontinued intention but not included in the final model for that outcome. Why?
3) Only percentages reported for the different outcomes (4 types of intentions), but the paper would benefit from reporting the actual numbers (sample size for each outcome group – unweighted numbers), so that it is possible to assess the adequacy of the samples.

Minor Essential Revisions:
1) Background (sentence 3) page 3 "Although screening rates are increasing..." but for everyone under 50 years or which age groups? Clarification needed here.
2) Background page 3 - Change “2010 BRFSS (Behavioral Risk Factor Surveillance Survey)” to have the abbreviation in brackets so “2010Behavioral Risk Factor Surveillance Survey (BRFSS)“.
3) Define "age-eligible" for the US context i.e. what ages is CRC screening recommended for men and women in the US?
4) Background - page 4 - “Identifying factors associated with changes in CRC screening intentions among adults less than 50 may will allow for salient programs and communication strategies to be developed, which may contribute to an increase the number of adults who participate in CRC as soon as they turn 50 and potentially reduce preventable morbidity and mortality.” Remove “will” as it follows "may".
5) Background page 4 - “Thus, this current study was conducted to determine if the ODH intervention led to changes in screening intentions and 2) examine factors associated with a change in CRC screening intentions among adults among ODH participants less than 50 years of age. Insert (1) in front of "determine". Remove “among” after "among adults" and insert “who participated in the ODH program aged 18-50 years”.
6) In Methods, add "United States" after "Boston" for where study was conducted.
7) Methods - Stated that participants “...were under 50 years of age at both time points.” The paper would benefit from specifying the actual ages eligible to participate in the study i.e. those aged 18-50 years at baseline and follow-up.
8) State when the study was conducted - "2 years" mentioned in the abstract but not the actual years for baseline and follow-up. Add this information to the Methods section.
9) State the response rate for the study in the Methods section.
10) Measures - Category "Neither US or PR" in "Place of birth" variable described on page 7 is really “Other”. Suggest making this change to the text and Tables 1 and 2.

11) Measures: Authors state “We determined whether participants were living at or below poverty level by examining combining yearly household income and the number of individual supported on this income, which were compared to the 2005 Federal Poverty Guidelines” (page 7 in Methods). Remove “level” and put in “line” if this is actually referring to the poverty line for the US. Remove “combining” as household income is, by definition, total income for everyone in the household unit. Put in “individuals supported”, not “individual”. And change “which were compared” to “which was compared...”

12) When coded data for the outcomes, the authors state “To do this, we first recoded all “don’t know” responses on both surveys as “no”, and classified individuals who reported being screened for CRC at follow-up as intending to get screened.” How many people responded as “don’t know” at baseline and follow-up? This number may be important because the reference case is no intention to screen at baseline and follow-up and the “don’t knows” seem to have been grouped with the reference group.

13) There is no reference for the tool used to measure “how well their provider understands their social context”. Has this been validated? Is there a source?

14) Results: Table 1 requires additional information/corrections. See:
1. “Age” has the mean and SD repeated under sample size column. What is the sample size?
2. “% below poverty level”. List the percentage of people missing this information in the table notes but fail to report the sample size for this variable in Table 1.
3. “Place of birth” – replace “Neither US or PR” with “other”.
4. “Number of role responsibilities”. What does “0-1” and “2-3” represent? Was it the case that responses “little or none and about half” correspond to 0-1 and “most or all” responses correspond to 2-3? Please specify in the Table 1.
5. For “English as 1st language”, “role conflict” and “have regular MD/NP visits”, put “%” in front of variable name and delete “% yes” or “yes” which is in brackets after the name.
6. N column is unweighted – add this to the column title i.e. :“unweighted sample, N”. Delete “(weighted sample)” from the second column and put this information about summary statistics as a note for the table.

15) Results – Page 8 – State that ...”almost half lived at or below the federal poverty level” which is not consistent with the percentage reported in Table 1 (42.8%). Needs to be corrected. Also, no reference for the “federal poverty level” or stating what it is. The paper would benefit from reporting what the median equivalised household income was for this sample in Table 1 so that it is possible to compare with the official median equivalised household income corresponding to the US poverty line – if this is what was done. And is there a more recent estimate than 2005? This may no longer be relevant for the sample used in this
study.

16) Discussion of results from Table 2 page 8. The variable “immigration status” does not appear as a variable in the table (or referred to previously in the text). Need to identify which variable this refers to - place of birth?

17) Discussion of results from Table 2 page 8. Variable “Provider’s understanding of participant’s social context” does not appear to be significant from the bivariate analyses reported in Table 2 (no stars indicating significance); but it is stated that this variable is significant at p<0.10 on page 8.

16) Discussion – Paragraph 2 – “Women and individuals born outside of the US or Puerto Rico were less likely to intend to get screened once age eligible, and it is possible that this the lack of intentions is due to other more pressing and immediate concerns (e.g., family obligations, financial constraints).” Change “one” to “once” on page 9.

18) Page 10 – “It is possible that individuals with fewer day-to-day responsibilities and/or individuals depending on them may feel that taking care of their future health only impacts themselves and thus not as much of a priority.” The paper would benefit from including references from the literature to support this statement. There is considerable literature on the influence of having a spouse (and children) on cancer screening and treatment decisions.

19) Limitations of the study. There is no information about the time interval within which people are intending to be screened e.g. in 5 years of becoming age-eligible or simply that they will, once eligible, be screened. The paper would benefit from a discussion about this issue and how it (how the question was phrased) might affect the intentions of a young group of people (mean age is 34 years). A strength of the paper is that the study uses a sample of people from “low income” households. This may also be a limitation, affecting the generalisability of the results. The paper may benefit from elaborating on this point in the discussion. A strength of the paper is the use of longitudinal data.

20) The Conclusion appears a little long, compared to the Discussion. The paper might benefit from incorporating some of the issues raised in the Conclusion in the Discussion instead e.g. the discussion about future research and the timing of initial discussions with medical professionals about CRC screening.

Discretionary Revisions:

1) Change the title to better reflect the age group of study participants and country. Perhaps “Changes in Colorectal Cancer Screening Intentions among People aged 18-50 years in the United States.”

2) Table 2 – “BL” refers to baseline. Needs to be made clear in table notes.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests