Author's response to reviews

Title: Feasibility of community-based screening for cardiovascular disease risk in an ethnic community: The South Asian Cardiovascular Health Assessment and Management Program (SA-CHAMP)

Authors:

Charlotte A Jones (jonesc@ucalgary.ca)
Alykhan Nanji (mdc-era@nucleus.com)
Shefina Mawani (Shefina.Mawani@ucalgary.ca)
Shahnaz Davachi (Shahnaz.Davachi@albertahealthservices.ca)
Leanne Ross (lros@ucalgary.ca)
Ardene Vollman (avollman@shaw.ca)
Sandeep Aggarwal (saggarwal@shaw.ca)
Kathryn King-Shier (kingk@ucalgary.ca)
Norman Campbell (ncampbel@ucalgary.ca)

Version: 2 Date: 6 December 2012

Author's response to reviews: see over
Reviewer's report

Title: Intervening to reduce cardiovascular disease risk in an ethnic community: The South Asian Cardiovascular Health Assessment and Management Program (SA-CHAMP)

Version: 1 Date: 15 October 2012 Reviewer: devaki R nair

The authors have assessed CVD Risk in South Asian population at the screening event and reassessed a group 1 year later and have shown significant reduction in cholesterol and T Cholesterol and HDL ratio. This is the way forward for the population in this study in all parts of the world and the authors should be congratulated on this innovative methodology to access this hard to reach population especially the use of community workers.

Thank you.

1. Nearly one third of the population were diabetic; were the triglycerides measured at all?. As varying triglycerides can have an impact on HDL measurement and therefore TC/HDL ratio. LDX POCT instrument is quite suitable for use in such screening procedures.

See ref

But the limitations in relation to high TG a common abnormality in this population should not be ignored.

Thank you again and this article has been cited and this concern has been acknowledged in the limitations section of the discussion.

2. Was there any change noted in HDL levels?

Yes: see table 2: Total cholesterol decreased significantly overall and among all subgroups examined. HDL increased overall and among all subgroups examined with the exception of those with diabetes in whom the HDL did not change.

3. There is greater prevalence central abdominal obesity in South Asians and was weight or waist measurements recorded?

No, waist circumference was not assessed in this study.

4. Was the decrease in Cholesterol or TC/HDL ratio associated with any change in anthropometric changes?

A similar screen found high prevalence of central abdominal obesity in this population, similar to the screening done by Charlotte Jones, using community volunteers to assist in recruiting and conducting the screen. See reference below
Cardiovascular risk assessment of South Asians in a religious setting: a feasibility study.
It is interesting to note that there is improvement but it is not clear what interventions lead to the change. Were people with Diabetes started on metformin? At follow up was there a review of their medication which may have had an impact on their lipids?

Anthropometric measures were not assessed. As this was primarily a qualitative study, participants were asked only if any medications had been changed or added since their first or baseline visit. The details on any of the changes were not elicited.

5. If anthropometry was carried out it would show if change in lipids is related to this.

Anthropometric measures were not done in this study, but are part of our ongoing work in the SA community.

**Reviewer's report**

**Title:** Intervening to reduce cardiovascular disease risk in an ethnic community: The South Asian Cardiovascular Health Assessment and Management Program (SA-CHAMP)

**Version:** 1  **Date:** 30 September 2012  **Reviewer:** Rajeev Gupta

**Reviewer's report:**

Major compulsory revisions:

General comments:

1. This article is focused on cardiovascular risk assessment using trained non-medical volunteers at places of worship in North America using opportunistic screening. All these three components have not been addressed in the article.

   Thank you for these helpful comments: we have basically re-written most of the manuscript with an emphasis on these very important aspects of the study and what make it unique.

2. I would suggest that the authors review previous studies among African-Americans in USA and elsewhere. Church-based interventions have been assessed in multiple studies with varying results. This should be discussed in introduction as well as discussion.

   Agree, and these aspects are now reviewed in the introduction and particularly in the discussion.

3. Use of non-physician volunteers to assess cardiovascular risk is a novel initiative, especially among South Asians, and needs to be addressed in introduction, methods and discussion.

   The use of lay volunteers is now discussed in the introduction, methods and discussion.

4. Usefulness of opportunistic screening in cardiovascular risk factor assessment has not been well evaluated. This should be highlighted in introduction and discussion. Please mention usefulness of this method to identify community prevalence of risk factors.

   This important issue is now covered in the discussion. It is clear from the literature (including our study) that there is no clear data on how self-selected participants in these kinds of programs compare to the broader South Asian community and certainly warrants further study.

5. The article is essentially a qualitative study. The focus on qualitative aspect of intervention is lacking in introduction and discussion.

   This is mentioned now both in the introduction and discussion sections.
6. I would suggest that the authors revise the whole article keeping all these four important facets of the study into consideration.
As above, this has been done.

Specific comments: Abstract:
7. The background statement is too long. This should be a single line statement (the last sentence of the existing abstract).
Done: see abstract.

8. Methods section needs to be succinctly described. Follow-up of only 99 of 238 initially screened were followed-up. This should be highlighted in the abstract.
Done

9. There are no data in the results section. Important data on risk factors before and after intervention should to be added here.
Data has been added into abstract.

10. In conclusion section the importance of this study should be highlighted.
The abstract conclusion now reads, “SA-CHAMP demonstrated the feasibility of implementing a culturally adapted, sustainable community-based CVD risk factor screening program in the SA community in Calgary, Alberta, Canada. SA-CHAMP identified a high-risk cohort amenable to intervention. Participants’ input has helped to refine the next iteration of screening programs and has helped change policy for the delivery of local CDM programs. Further research is needed to determine the content and delivery of sustainable intervention programs that will successfully reduce CVD risk factors and disease risk in this population”.

Introduction
11. The authors describe the factors associated with poor cardiovascular health in South Asian communities in Canada. Chinese, African Americans as well as Native Americans also have poor cardiovascular health compared to Caucasian Whites. Please highlight the factors associated with poor cardiovascular health in these communities and why these are more among the South Asians.
The second paragraph of the background section now clarifies these issues.

12. The authors need to briefly describe the uniqueness of this study- (i) opportunistic screening, (ii) at places of worship, (iii) using non-physician health workers in the introduction section.
Paragraphs 3 and 4 in the background section clarify this now.

13. Please also introduce the qualitative nature of the study.
The final paragraph of the background section now reads, “The objective of this primarily qualitative study was to determine the feasibility of implementing a sustainable, culturally adapted, lay volunteer led...

Methods:

14. Please describe the total population of Calgary and populations of various ethnic groups in the region.
This has been done in the second to last paragraph in the background section: ie to “set the stage” for the intervention.

15. Method/s of training of volunteers should be provided.
The whole methods section has been re-arranged into a more comprehensible format and the volunteer training is described in detail.

16. Criteria for selection of places of worship should be mentioned. Were the places Hindu temples, Sikh gurudwaras or Muslim mosques or a combination of them?
As now stated in the first paragraph of the methods section, SA community leaders chose the screening locations. Also, as now stated in this same paragraph, “…and drawing up a memorandum of understanding…” Our Memorandum of Understanding (MOU) with these SA communities does not allow us to identify the SA groups participating in the program: they have read the manuscript (as per the MOU) and wished that these non-specific terms be used. Also, as mentioned in the manuscript, no form of randomization was to be undertaken.

17. Please specify the Dari language (it is essentially a dialect and not a language).
Thank you and done.

18. Why were the British risk charts used and why not the north American or Indian. I am not sure that multiplication of this score by 1.5 is validated in South Asians.
There are no validated risk engines for SA as you suggest. We wished to look at total CVD risk rather than CHD risk, which was the only available Framingham risk engine at the time. The BHS risk charts suggest the 1.5 fold multiplication factor for SA. Aarabi et al (Aarabi and Jackson 2005) provide support for “adapting” the Framingham for SA by multiplying the risk by 1.5 or by simply adding 10 years to the SA participants age prior to risk assessment (this latter method along with the more recent Framingham total CVD risk engine(D'Agostino, Vasan et al. 2008) which is what are volunteers are currently using in our programs across Canada.

19. The intervention is loosely described. Please be succinct.
“This study was focused on the feasibility of implementing screening (not intervention) in order to identify “at risk” individuals. The study team was at no point directly involved with any aspect of the intervention; their involvement ended with sending screening results to family physicians, and encouraging participants to follow-up with them and to attend CDM programs, if indicated. There was no attempt to dictate the same intervention to all participants, nor did the team have the resources to track individuals to determine the type of interventions, if any, they received. The only information available to them was the responses to the follow-up questionnaires, which have been reported. This reflects the “real world” setting in which this type of screening takes place.

20. The follow-up methodology is vague. Please compare the responders with non-responders to assess any differences. It is likely that responders were younger and more health-conscious. This could bias the results. If there are systematic differences, the data could be adjusted for baseline variables, especially age, gender and socioeconomic risk factors

Numbers were too small to make meaningful comparisons: we had 46 individuals with uncontrolled TC/HDL at both assessments, 26 with controlled ratios at both assessments, 19 who improved and 7 who got worse. These numbers are insufficient for multivariable modeling, which would be inappropriate for a pilot feasibility study. In a future, larger, appropriately powered study, we would certainly examine the characteristics of responders and non-responders. Adjustment for differences
(only if appropriate) would be conducted, but it is more likely that we would model interaction terms in order to identify and understand the variable impact of these differences on the outcome of interest. Given that screening is opportunistic and intended to target those at greatest risk, and that intervention occurs in a “real world” rather than a controlled setting, we would not expect uniform change across participants. We wouldn’t consider this to be a bias, but rather a finding of interest (i.e., who does the program help? who does the program not help?) that would warrant further exploration.

21. Statistical methodology is incomplete.
It now reads: “Changes in BP and cholesterol levels (follow-up minus baseline) were calculated and averages differences (with 95% confidence intervals) were estimated using McNemar’s test (proportions) and paired t-tests (continuous variables). Change was also assessed by subgroup of interest: gender and self-reported diabetes. All analyses were done using Stata 12 (College Stn, TX”). Also see response to #20.

Results:
22. The influence of training of the volunteers needs to be mentioned. This is the qualitative component of the study.
This was evaluated only indirectly through assessment of participants’ satisfaction etc with the program. This is being evaluated in our current program though, as this is very important and helps to predict sustainability.

23. Table 1: There is no need to describe the data on the group with self reported diabetes.
This has been removed: now only include the whole group, male and female participants.

24. Table 1: There is no need to provide data on “no”. Please mention only those with a particular variable.
Done

25. Table 1: Values of total cholesterol are missing in column 1.
Thank you and corrected

26. Table 1: The focus of the article is poor control of risk factors, why mention data from controlled TC/HDL. It should be for uncontrolled TC/HDL.
Yes, but major outcome is improvement measured by controlled TC. For consistency between tables and throughout the manuscript, the same variables are shown in table 1 and 2. If reviewer wishes we can re-insert Yes and No into table 1 which will show controlled and uncontrolled.

27. Table 2: Multiple subgroups for each variable are reported. Some of the numbers are very small and may not be relevant. Similarly some variables are repetitive, for example, men vs women, diabetics vs non-diabetics, high vs low CVD risk. Instead of 7, we could have only 4 groups.
Agree and now the table reflects 4 groups (all, men, women and diabetics)

28. Table 2: Many p values are significant. For the whole group, control of TC/HDL improved significantly (p=0.29). This implies that there was a decline in uncontrolled TC/HDL. Total cholesterol values declined by 0.52 mmol, HDL cholesterol increased by 0.07 mmol, and the total/HDL declined by 1.04 (all significant). The results section does not highlight these findings.
We have added in these findings, however, as we state in the second to last paragraph of the discussion, “Given that this study was primarily qualitative, and that no a priori power/sample size calculation was
performed, the significance of the pre-post changes (or lack thereof) in clinical parameters should not be over-interpreted. These analyses were conducted on an exploratory basis only. The variability in the studies measures will be used to determine a sample size for a future, larger study”.

29. The authors have discussed the qualitative component of the intervention here. This should be more succinct.
See answer to question # 28.

Discussion:
30. The first paragraph should focus on the three components mentioned above, viz., implementation of screening program at places of worship, opportunistic screening and use of community volunteers. This should also comment on the benefit of this intervention in modifying lipid levels.
Duly noted and first paragraph of discussion has been changed.

31. As mentioned above all the four components of this study should be discussed in separate paragraphs. Results should be compared with in high income, middle income and low income countries, especially similar studies in South Asian countries. There are studies from India as well as Pakistan on hypertension management using non-physician health workers.
The discussion has been completely re-written: each paragraph deals with the major components of this study: ie the location of the program in places of worship, the use of lay trained volunteers and the recent validation of this mode for hypertension screening in Canada, and finally a comment on the value of opportunistic screening within the context of this study, ie to uncover a relatively high risk population that is amenable to intervention.

**Level of interest**: An article of outstanding merit and interest in its field

**Quality of written English**: Needs some language corrections before being published

**Statistical review**: Yes, and I have assessed the statistics in my report.

**Declaration of competing interests**: I declare that I have no competing interests.