

# Development and Evaluation of Multimedia Interventions to Promote Breast and Cervical Health among South Asian Women in Hong Kong: A Project Protocol

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## ABSTRACT

Recent studies conducted in the local community indicate that the uptake rates of breast and cervical cancer screening among South Asian ethnic minorities are lower than those of the general population. The development of interventions to promote these minorities' awareness of breast and cervical health and the importance of cancer screening is therefore required. This study protocol aims to develop culturally sensitive multimedia interventions to promote awareness of breast and cervical cancer prevention among South Asian women in Hong Kong, and to evaluate the outcomes of such interventions using a Reach-Effectiveness-Adoption-Implementation-Maintenance

framework. By using a multimedia approach and developing socio-culturally relevant and linguistically appropriate educational materials, information related to cancer and accessible preventive measures for breast and cervical cancer is expected to be disseminated more effectively among South Asian women and ultimately increase their awareness of engaging in healthy lifestyles and taking part in cancer screening tests. Successful engagement of community partners will enhance the future sustainability of the project.

**Key words:** Breast and cervical cancer, cancer screening, South Asian

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## Introduction

Breast and cervical cancers are in the top ten most common types among Hong Kong women.<sup>[1]</sup> Studies have shown that the implementation of primary and secondary cancer preventive measures can help reduce the risk of breast and cervical cancer development and enable the early detection of these cancers.<sup>[2,3]</sup> With increasing efforts to introduce healthy lifestyles and cancer screening by government and health service organizations, public awareness of the importance of cancer screening has increased and more women have participated in screening tests for breast and cervical cancer. However, screening uptake among South Asian women in Hong Kong remains low.<sup>[4]</sup> Insufficient knowledge about cancer and screening tests, language difficulties, poor accessibility to screening services, religious beliefs and individual health beliefs have been identified as the barriers hampering South Asian ethnic minorities in utilizing the available screening services.<sup>[5]</sup> South Asians are comparatively less educated, and this results in their inadequate knowledge about cancer and ways to access the publicly available screening services.<sup>[4,5]</sup> Further, religious beliefs and individual health beliefs are potential factors affecting their interest in taking up screening.<sup>[5]</sup> For example, South Asian women, particularly Pakistanis, may not feel comfortable having a checkup carried out by a male healthcare provider or joining other services in the presence of males.<sup>[5,6]</sup> To address the issue, culturally and linguistically appropriate interventions are required to increase the South Asian women's knowledge of breast and cervical health and their awareness of the importance of cancer screening for the early detection of the disease or precancerous lesions, which may help to prevent cancer's progression.

Chan and So<sup>[7]</sup> conducted a systematic review of randomized control trials to examine the effectiveness of breast and cervical cancer screening interventions for ethnic minority women, with ten studies included in the review. The findings showed that breast and cervical cancer screening programs were effective in improving screening intentions, knowledge of the disease and its screening. The shared characteristics of an effective program were that they should be theory- and language-based, take place in a community setting, with culturally relevant materials and multiple interventions. The present study protocol aims to report the development and evaluation of culturally sensitive multimedia interventions, involving the use of PowerPoint presentations, video clips and health information booklets, targeting breast and cervical health among South Asian women in Hong Kong.

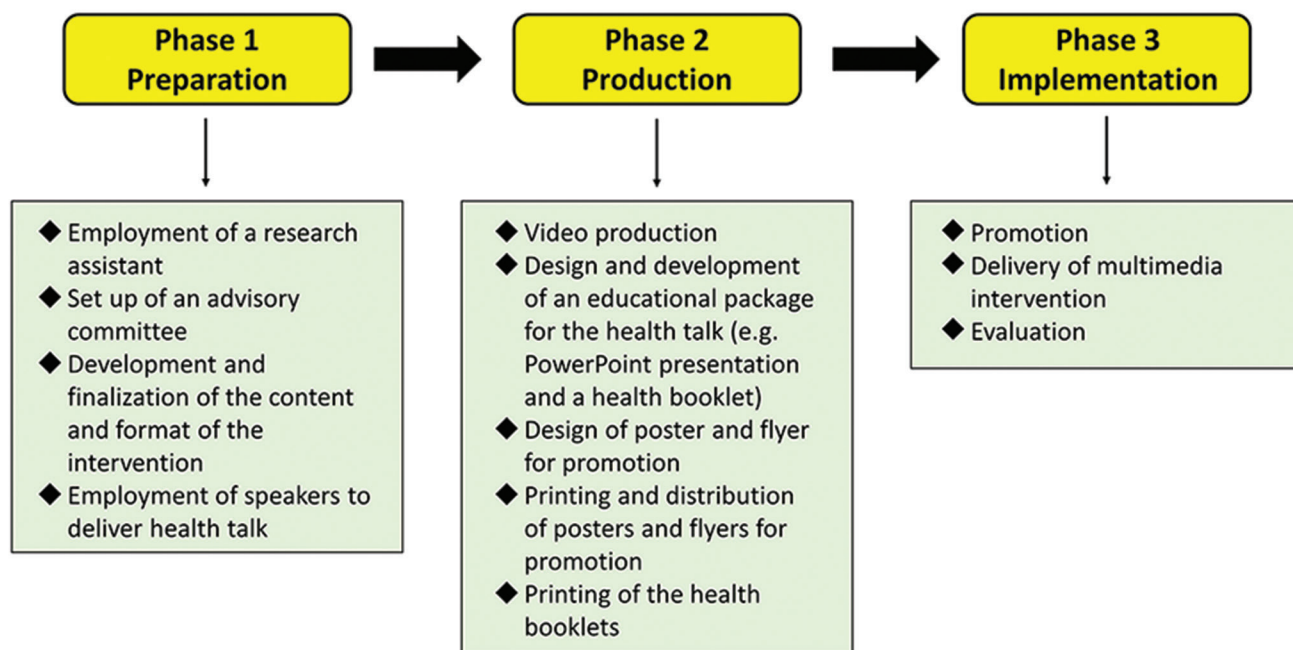
## Methods

### *Development and implementation of the multimedia intervention*

The project protocol will consist of three phases: preparation, production, and implementation. In the preparatory phase, an advisory panel, composed of health professionals and persons in charge of South Asian community centers and ethnic minority associations, will be formed. Panel members will meet to discuss and decide on the overall content of the intervention and the presentation of the materials. The content of the intervention will be based on the concepts of a model widely used for the development of health-based interventions for ethnic minorities. Discussions will be held on whether the content aligns with the adopted model and on the type of strategies to be used in delivering the intervention. Advice on ensuring the cultural appropriateness of the content will also be sought from the panel members.

The second phase will involve the production of linguistically appropriate PowerPoint presentations for health talks and of health information booklets, based on the content agreed and developed during the preparatory phase. To address the women's cultural beliefs during the intervention process, South Asians will be employed as actors and actresses in the production of video clips. The panel members will comment on the educational materials again before producing the final version.

In the final phase, community centers running support programs for South Asians and ethnic minority associations all over Hong Kong will be approached to obtain support for promoting the intervention programs to their members. These organizations will be encouraged to help in recruiting South Asian women to participate in the interventions. They will be asked to provide a venue for the health talks and for the display of health information booklets. Moreover, by means of a snowball sampling approach, participants will be encouraged to invite their peers to join the programs. Various media outlets, such as newsletters and posters published by South Asian community centers, will be used to publicize the interventions among South Asian women in Hong Kong. In addition, social media such as Facebook will also be used to promote the intervention to the wider community of local South Asians, especially those who do not often visit a community center or ethnic minority association. The interventions will be delivered by a nurse at the premises of the community centers or ethnic minority associations who agreed to support the intervention. The key activities involved in each of these three phases are presented in Figure 1.



**Figure 1:** The key activities involved in the three phases of the multimedia intervention

### Evaluation of the intervention

The Reach-Effectiveness-Adoption-Implementation-Maintenance (RE-AIM) framework developed by Glasgow *et al.*<sup>[8]</sup> will be adopted to evaluate the effect of the intervention on the following outcomes.

Reach will be assessed by the number of South Asian women participating in the intervention.

Effectiveness will be evaluated by assessing the extent to which the participants perceive an increase in their knowledge of breast and cervical cancer, its preventive measures, and how to access the available screening services. Their intention to undergo regular screening will be assessed. Furthermore, participants' level of satisfaction with the intervention will be examined, together with that of their willingness to promote the program among their peers and friends. A self-report survey will be used, and participants will be invited to complete it by responding to each item on a four-point rating scale (4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree). Feedback from participating community organizations regarding the acceptability and feasibility of the intervention delivered to their members will be collected through focus group interviews. Such feedback will be useful in gaining a better understanding of how the intervention can be improved to increase its effectiveness and the strategies that can be employed to ensure its sustainability.

Adoption will be evaluated by the number of community organizations and ethnic minority associations willing

to provide support and help in promoting and/or implementing the intervention at their centers.

Implementation will be evaluated by the following indicators:

- Number of interventions conducted at community partner centers
- Number of printed health booklets distributed
- Number of inquiries from association members about breast and cervical cancer screening services
- Number of occasions when interpretation services are provided by the associations to assist their members in accessing screening services
- Acceptability and feasibility of the program.

Maintenance will be evaluated by the level of willingness of the community partner associations to continue carrying out the intervention by displaying the health booklet and showing the video at the center. Their feedback will be collected through focus group interviews and soliciting their opinions on how the sustainability of the intervention can be ensured.

### Discussion

To the best of our knowledge, this is the first project that evaluates the acceptability and effectiveness of a multimedia intervention designed to increase the uptake of breast and cervical cancer screening among South Asian women in Hong Kong. By means of a multimedia approach, it is expected that information related to cancer

generally and accessible preventive measures for breast and cervical cancer in particular will be disseminated more effectively to South Asian women, who are generally of lower literacy levels. Another potential benefit is that the development of video clips and educational materials will be guided by a theory which is likely to enhance its effectiveness in health promotion and disease prevention among the participants.<sup>[7]</sup> It is expected that the project can be extended to encompass preventive measures against other types of cancer, such as colorectal cancer, which are also common in the female population of Hong Kong. Successful engagement of community partners will add to the future sustainability of the project. The video and health booklet have the potential to increase adherence to healthy lifestyles and cancer screening among South Asian women.

Despite the potential benefits of the intervention, certain challenges may be encountered during the process of its implementation. These include the language barrier and the heavy family obligations of the participants. The intervention health talks may have to be conducted in English by a registered nurse if South Asian nurses cannot be employed, which may make it difficult for certain non-English-speaking participants to understand the concepts presented in the talks. Furthermore, family obligations might hamper the women in taking the time to participate in the health promotion intervention, as South Asian women are mainly responsible for doing the households chores and taking care of their families.<sup>[9]</sup> Moreover, the dominance of males in such families as far as decision-making is concerned may also play a role in preventing the women from participating in health interventions.<sup>[10,11]</sup> It is likely that South Asian women are required to obtain permission from their husbands before they are allowed to take part in health-related interventions. All these factors may contribute to the unwillingness and/or inability of many South Asian women to participate in the intervention, thereby limiting its “reach”.

Certain strategies may be adopted to overcome the challenges to be expected. First, to overcome the language barrier, South Asian interpreters may be employed for the health talks, so that the important concepts the nurses present during the talks can be explained in the participants’ first language, enabling those who have difficulty understanding English to take in the concepts more readily. Second, in response to the potentially heavy family obligations of the participants, the interventions could be conducted during public holidays, at weekends or in the evening, when more participants would be able to attend. Certainly, most of the participants do not need to work at weekends, and more of their family members will be off work then and available to help look after the

children when the women are attending the talks. Finally, the employment of South Asians as research assistants for recruitment purposes may increase the chances of success in that area. All these measures may be used to improve the participation rate of future health-related interventions targeting South Asian women.

## Conclusion

This project protocol aims to develop multimedia interventions to promote breast and cervical health among South Asian women in Hong Kong. The Health Belief Model has been adopted to guide development, together with the RE-AIM framework to cover the evaluation plan. Strategies will be adopted to overcome the expected challenges and improve the participation rate in future interventions. By the use of a multimedia approach and socio-culturally relevant and linguistically appropriate educational materials, it is expected that information related to cancer and accessible preventive measures for breast cancer will be disseminated more effectively to South Asian women. Community partners, including the community centers and associations that provide support services for local South Asians, will also be engaged in this project, to ensure its future sustainability through their efforts in promoting the intervention among their members. The project also has considerable potential to be extended to preventive measures against other types of cancer common in Hong Kong, such as colorectal cancer.

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## Conflicts of interest

There are no conflicts of interest.

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