Achieving equitable access to cancer screening services to reduce the cancer burden in the Asia-Pacific region: Experience from Hong Kong

Winnie K.W. So, Dorothy N.S. Chan, Bernard M.H. Law, Tika Rana and Cho Lee Wong*

The Nethersole School of Nursing, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, China

Summary

The global burden of cancer can be reduced through early detection by providing people with unrestricted access to cancer screening services. However, health disparities exist within and across countries and regions. This viewpoint article uses the Integrative Multicomponent Programme for Promoting South Asians' Cancer Screening Uptake (IMPACT) project as an example of sharing strategies, such as evidence-based multimedia interventions, community health worker-led interventions, strengthening relationships and building networks, that are being adopted to improve ethnic minorities' access to cancer screening services in Hong Kong. We find that the IMPACT project effectively increased South Asians' cancer screening uptake (e.g. the cervical cancer screening uptake rate saw a 42% increase over 5 years). Future directions for scaling up the IMPACT project have been suggested to contribute to achieving Goal 3 in the United Nations Sustainable Development Goals by 2030, that is, ensuring healthy lives and promoting the well-being of all people at all ages.

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Introduction

Cancer is one of the most common non-communicable diseases and a leading cause of death worldwide. In the Asia-Pacific region defined by the World Health Organization (WHO), which includes Western Pacific countries and the Southeast Asia region, approximately 8.9 million new cancer cases and 5.4 million cancer-related deaths were reported in 2020.[1] The cancer burden in the Western Pacific region was particularly prominent, with the third highest age-standardized rate of cancer incidence among the various world regions defined by the WHO. Although this high rate of cancer incidence in these two world regions is lower than that in other world regions, such as the Americas and Europe, the age-standardized cancer mortality rate in the Western Pacific region was the highest among all world regions in 2020 (see Table 1).[1] Notably, the cancer burden in the Asia-Pacific region is expected to increase in the future, as new cancer cases and cancer-related deaths in this region are projected to increase to more than 13.6 million and 8.9 million, respectively, by 2040.[1]

Up to 50% of all common cancers in the Asia-Pacific region, including breast, colorectal and cervical cancers, can be prevented through screening and early detection.[2] Cancer screening enables early detection of precancerous lesions, so that timely treatment can be applied before these lesions develop into tumours.[3] Moreover, evidence-based cancer screening programmes have great potential to reduce cancer morbidity and mortality.[4] Reducing the burden of preventable cancers will also contribute to achieving Goal 3 in the United Nations Sustainable Development Goals (SDGs) by 2030, that is, ensuring healthy lives and promoting the well-being of all people at all ages.[5]

However, health disparities exist within and across countries.[6] For example, in the Western Pacific region, >75% of new cases and >80% of cancer-related deaths were reported in developing countries annually.[7] People from lower socio-economic backgrounds, those living in rural areas and ethnic minorities who experience inequalities in access to cancer screening services have been identified as disadvantaged groups with higher cancer incidence and/or mortality than other more advantaged groups in the Asia-Pacific region.[8–15] Therefore, it is essential to address health determinants and devise strategies for improving the accessibility of cancer screening services for these vulnerable groups, particularly those with low socio-economic status.[12–15] Cancer screening access should be improved, especially for South Asian ethnic minorities in Hong Kong, considering their low socio-economic status as shown by

*Corresponding author.
E-mail address: winnieso@cuhk.edu.hk (W.K.W. So).

WHO world regions	Age-standardised cancer incidence rate (per 100,000 individuals)	Age-standardised cancer mortality rate (per 100,000 individuals)
Africa	128.5	86.5
Americas	267.1	87.6
East Mediterranean	129.3	84.0
Europe	272.8	108.8
Southeast Asia[a]	110.0	71.1
Western Pacific[a]	216.6	121.2

***Table 1*: A comparison of the age-standardised cancer incidence and mortality rates in different World Health Organisation (WHO) world regions.**

[a] World regions that form the Asia-Pacific region.

Data were obtained from International Agency for Research on Cancer, 2022.[1]

their higher rate of poverty compared with the general population of Hong Kong.[16]

In this viewpoint article, we share our experience of using the Integrative Multicomponent Programme for Promoting South Asians' Cancer Screening Uptake (IMPACT) project to improve the accessibility of cancer screening services for ethnic minorities in the Hong Kong Special Administrative Region (HKSAR). First, we provide background information on these Hong Kong ethnic minorities and briefly describe the availability of cancer screening services in the HKSAR. Second, we illustrate the process of developing and scaling up the IMPACT project. Third, we provide suggestions for strategies that can be used to achieve better outcomes. Finally, we suggest future directions for scaling up the IMPACT project to reduce the burden of preventable cancers and achieve Goal 3 of the SDGs by 2030.

HKSAR ethnic minorities

According to the 2021 population census,[17] 92% of the total population of the HKSAR was Chinese, while the remaining 8% comprised people from ethnic minorities. However, the population of ethnic minorities living in the HKSAR increased by 37.3% from 451,183 in 2011 to 619,568 in 2021. South Asian ethnic groups (16.5%) are the largest and among the fastest growing ethnic minority groups in the HKSAR. Indians, Nepalese, and Pakistanis comprise >90% of the entire South Asian population in the HKSAR.[17] Most South Asians in Hong Kong (72%) are immigrants according to the results of the 2016 Hong Kong Population By-Census. A significant proportion of these immigrant South Asians are engaged in either elementary occupations such as cleaners and helpers (30%) or clerical/service-oriented jobs (26%), and most (67%) only have a secondary school education.[18] These data provide further evidence for the low socio-economic status of South Asian ethnic minorities in Hong Kong.

HKSAR cancer screening services

Cancer screening tests are accessible at facilities operated by both public and private healthcare providers in the HKSAR. In particular, the Hong Kong Department of Health has implemented screening programmes for the detection of various cancers with the aim to encourage the Hong Kong population to undergo regular cancer screening.[19] Universal health coverage is currently being implemented in the HKSAR, under which the government provides healthcare services at a relatively low cost to all citizens (i.e. permanent residents), including ethnic minorities. Meanwhile, HKSAR citizens can purchase different types of medical and health insurance plans to cover the expenses of these cancer screening services. However, the Hong Kong government previously introduced cancer screening programmes that subsidised the services for low-income individuals. For example, the Hong Kong government recently launched a pilot scheme for subsidising cervical cancer screening and preventive education for eligible low-income women[20] to ensure equality among Hong Kong citizens in terms of access to cancer screening services.

Barriers to cancer screening access

Although all Hong Kong citizens are eligible for cancer screening services, our earlier study found that the uptake of various cancer screening tests was lower in ethnic minorities than in the general population. This can be attributed to ethnic minorities' health illiteracy, limited access to health information and screening services, language barriers and cultural issues.[21] Only 20.4% of South Asians can read and speak Cantonese, which is the main language spoken in the HKSAR. In contrast, approximately 98.6% of Chinese are well-versed in Cantonese.[18] Considering this language barrier, South Asians may experience difficulties in communicating effectively with healthcare professionals during their cancer screening appointments. Moreover, as opposed to 86.8% of the general population, <50% of ethnic minorities have resided in the HKSAR for ≥7 years; therefore, they may not have a clear understanding of the various types of healthcare facilities and services provided by the Hong Kong government. As a result, South Asians may not be aware of the availability of public cancer screening services. In addition, their health illiteracy also contributes to their lack of understanding about the importance of early detection of cancer through frequent screening. South Asians were also reported to be reluctant to undergo cancer screening because of their cultural norms and beliefs. For example, many South Asian women are unwilling to be screened by male physicians due to their reluctance to expose their body parts to healthcare professionals of the opposite gender.[21] Moreover, the out-of-pocket costs incurred for undergoing cancer screening could also induce a financial burden for less well-off and uninsured South Asians in Hong Kong. Compared with the

general population in Hong Kong, South Asian ethnic minorities were reported to have a higher poverty rate (23.0% vs 14.7%),[16] suggesting that South Asians are more likely to face difficulties in paying for the cost of cancer screening or to afford the health insurance needed to cover the cost of attending cancer screening services. These factors reduce South Asians' intentions to undergo cancer screening and limit their accessibility to cancer screening services. Strategies and efforts to eliminate these identified barriers are required to improve equality in terms of the Hong Kong population's access to and uptake of cancer screening services.

IMPACT

As indicated above, the Hong Kong government had previously launched cancer screening programmes to promote the Hong Kong public's use of the available cancer screening services. Nevertheless, our earlier studies found that South Asian ethnic minorities had a low rate of cancer screening[21,22] because of their barriers to using screening services. Considering this observation and South Asian ethnic minorities' barriers to cancer screening, our research team (i.e. the authors of this article led by the corresponding author) developed the IMPACT project,[23] which is an initiative to improve South Asians' awareness of the importance of using cancer screening services and help them to overcome the barriers to and issues in using cancer screening services. Funded by the authors' institution and the Hong Kong government, the IMPACT project comprises the following two aspects: evidence-based multimedia interventions for improving the accessibility of cancer screening services for South Asians and a community health worker-led intervention to help community members to undergo cancer screening. We also adopted the concept of social capital from the IMPACT project to encourage individuals from disadvantaged groups to strengthen their relationships with their peers and build support networks within their disadvantaged social group, community organisations and cancer care service providers.

Evidence-based multimedia interventions

Based on the results of our previous study and systematic review,[21,24] we used evidence-based multimedia interventions to identify the following five components of effective cervical cancer screening programmes and improve ethnic minorities' knowledge of and beliefs about the topic and their screening uptake rates: (1) using theories to guide intervention development, (2) implementing community-based interventions, (3) using culturally relevant and linguistically appropriate materials, (4) highlighting key messages on cancer and screening measures and (5) using multiple strategies to deliver interventions, such as multimedia, visual aids, videos and reading materials. These multimedia interventions include the delivery of health talks to South Asian ethnic minorities in their local communities, which provide education about cancer prevention and early detection, the importance of regular visits to cancer screening services and how to access these screening services (see Figure 1). The multimedia intervention included a PowerPoint presentation and a video clip during the health talks. Health information booklets were distributed at the end of the health talks. The reported positive outcomes reflect the feasibility and potential effectiveness of evidence-based multimedia interventions in enhancing South Asian women's knowledge about breast and cervical cancer and their self-efficacy in undergoing cancer screening.[25,26]

Community health worker-led interventions

We previously conducted a systematic review that demonstrated the influential factors affecting ethnic minorities' use of cancer screening services, including culture-related factors, such as women's concerns about exposing their body parts to male doctors during cancer screening.[27] The delivery of interventions and their outcomes would therefore benefit from the involvement of individuals with a deep understanding of South Asian cultures and who are trusted within Hong Kong's South Asian communities. Interventions led by South Asian community health workers who speak the same language and share the same cultural beliefs as their community peers are therefore likely to be effective in promoting cancer screening services among local South Asians. Thus, we developed and evaluated a theory-based, culturally sensitive multimedia training programme using a pretest–posttest study design for empowering lay South Asian women in the HKSAR to become community health workers and deliver our evidence-based multimedia intervention (Figure 2). The training outcomes included increasing the trainees' knowledge of cancer and improving their self-efficacy and competence to serve as community health workers, including providing navigational assistance to their peers by helping them to book and attend appointments at cancer screening services.[28] The results of a knowledge test showed that the training programme could improve the trainees' knowledge, self-efficacy and competence in acting as community health workers. We also conducted further studies with randomised controlled trials to examine the effectiveness of community health worker-led interventions in increasing cancer screening uptake among South Asian women in Hong Kong. In these studies, we recruited South Asian women to take part in a generally similar training to that conducted in the aforementioned study.[28] These trained community health workers were then deployed to educate the South Asian women in their local communities about cancer screening services using

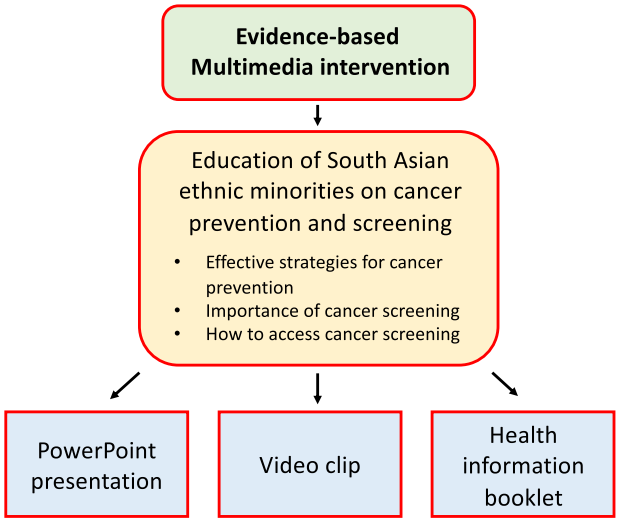

Figure 1. Overview of the evidence-based multimedia intervention. The evidence-based multimedia intervention used in the IMPACT project provides South Asian women in local communities with education about cancer prevention and screening. The topics include: effective strategies in the prevention of cancers, including colorectal cancer, cervical cancer and breast cancer; the importance of regularly using cancer screening services in cancer prevention; and accessing cancer screening services. Several intervention strategies were used to deliver the educational materials, including health talks with South Asian women using a PowerPoint presentation and a video clip, with the distribution of health information booklets after the talks to reinforce the participants' new knowledge about cancer screening services.

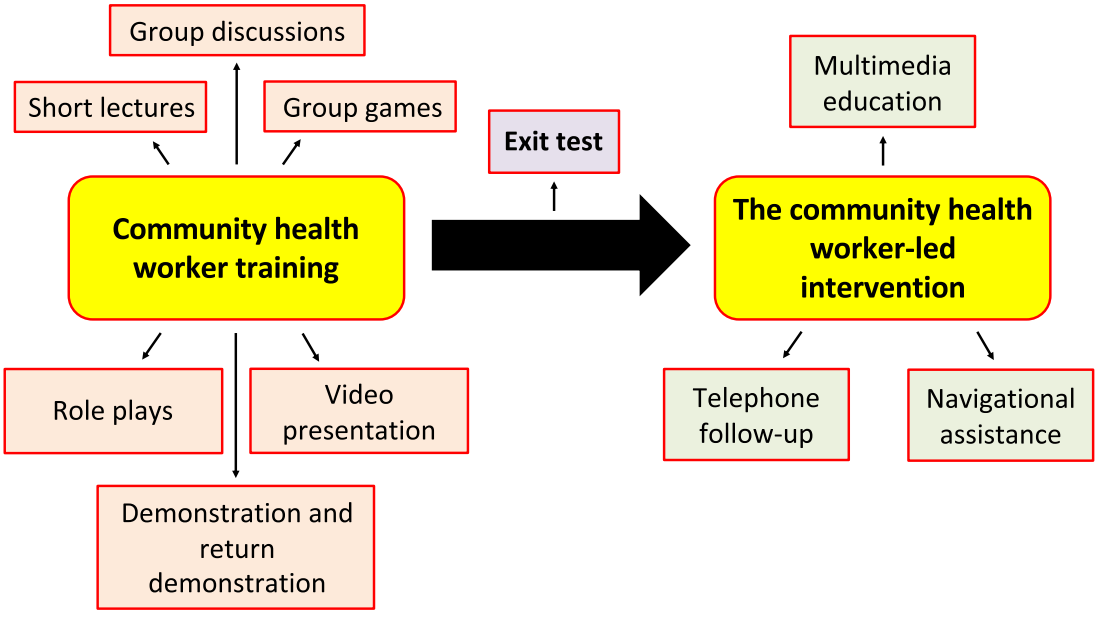

Figure 2. Overview of the community health worker-led intervention. The community health worker-led intervention was implemented in two stages. First, several South Asian women completed a training programme to enhance their knowledge about cancer prevention and screening services, and improve their skills and competencies in community health work. The IMPACT project used a number of teaching and learning strategies, including short lectures, group games, group discussions, presentation of video clips, role playing and return demonstration. After receiving the training, the trainees completed an exit test to ensure their competence in community health work. After passing the exit test, these trained community health workers worked in outreach among other South Asians in their communities. They not only provided multimedia education focused on accessing cancer screening services, but also followed up the participants through telephone calls to remind them about the importance of accessing cancer screening services and provide help, such as booking screening appointments, accompanying them to the screening appointments and acting as interpreters during their communications with healthcare professionals.

multimedia as described above. In addition, the community health workers followed up the intervention participants over the telephone to reiterate the importance of using cancer screening services and encourage them to undergo screening. Navigational assistance was provided to the participants if required. These South Asian women were given the community health worker-led intervention either during the study (intervention group) or after post-intervention data collection (wait-list control group). The feasibility, acceptability and effectiveness of these community health worker-led interventions were evaluated by comparing the outcomes between the intervention and control groups. Our findings showed that the community health worker-led multimedia intervention was feasible and acceptable among South Asian women; that is, significant improvements were reported in the intervention group's uptake of cervical cancer screening compared with the control group.[29,30] In our large-scale randomised controlled trial,[30] we noted a significant difference in the cancer screening uptake rate between the participants in the intervention group (98%) and those in the wait-list control group (53%). The intervention participants also exhibited a significant decrease in their perceived barriers to cancer screening after receiving the intervention. These data support the feasibility and benefits of involving community health workers in the delivery of interventions that aim to increase South Asian ethnic minorities' use of cancer screening services.

Moreover, feedback was collected from the community health worker trainees who participated in earlier studies[28–30] to identify how the training programme could be improved to enhance its effectiveness. These participants observed that there were no practical sessions during the training. The opportunity for the participants to rehearse the application of their knowledge and skills acquired during the training in real-life community health worker situations could help them to better support their peers in booking and attending appointments at cancer screening services. Therefore, we proposed the inclusion of a site visit session in future studies involving community health worker training, where the community health worker trainees will be accompanied on site visits by the course trainer and be provided with guidance and help in their first attempt to provide navigational assistance to their peers. Furthermore, the community health worker trainees expressed that it would be more convenient to them if the training could be conducted at the centres of ethnic minority associations in the district they lived in instead of at the authors' institution. Notably, the trainees had a relatively low participation rate, and their busy schedule during weekdays was one of the primary factors that contributed to this low participation rate. Therefore, to increase the training participation rate in the future, we plan to conduct community health worker training sessions, primarily at weekends, at the premises of ethnic minority associations in local South Asian communities in various Hong Kong districts.

Strengthening relationships and building networks

Regardless of ethnicity and socio-economic status, people's interpersonal relationships are valuable assets for their community. Thus, the IMPACT project uses the concept of social capital and the strengths of ethnic minority groups to empower individuals by strengthening their relationships with their peers and building a support network among the minority groups, community organisations and cancer screening service providers. Bonding, bridging and linking are three types of social capital. Bonding reinforces the relationships between people of similar backgrounds and focuses on strengthening their existing relationships (i.e. trust). Bridging refers to bringing people from different backgrounds together, which promotes social interactions and strengthens the relationships between heterogeneous groups. Linking attempts to build support networks among individuals across different societal levels.[31,32] Hence, we allocated resources to build, strengthen and sustain relationships and support networks within the minority groups and across people with different backgrounds and/or societal levels; improve their health literacy in terms of cancer prevention and early cancer detection; and improve their access to cancer screening services. These three types of social capital were considered in the implementation of the IMPACT project. For example, the bridging concept was used in our initiative to train South Asian women to become community health workers, where our relationships with various South Asian individuals could be strengthened by providing them with education about cancer screening and prevention. Moreover, we fostered bonding activities between the trained community health workers and their community peers. Their positive interactions strengthened the relationships between these two groups of individuals with similar backgrounds. The community health workers also provided health education about cancer screening and prevention to help their community peers acquire more knowledge. Finally, we helped individuals from different backgrounds to build a support network by linking with their peers during the implementation of the IMPACT project. For example, we sought the assistance of community organisations that serve local South Asians to help recruit South Asian women to be trained as community health workers. This enabled us to recruit a larger number of community health worker trainees. Moreover, we formed a network with cancer screening service providers, where they could provide cancer screening services for the local South Asian women following the encouragement by the community health workers. These bonding, bridging and linking attempts provide the foundation for us to outreach our intervention to a

higher number of South Asian ethnic minorities in Hong Kong and help improve their knowledge about cancer screening and increase the accessibility of cancer screening services.

The impact of our programme for promoting cervical cancer screening over the past 5 years was reflected in a follow-up survey of 371 South Asian women who participated in multimedia interventions in 2018. The results showed a 52.3% uptake rate of cervical screening tests, which was a 42% increase compared with our first survey conducted between 2013 and 2014.[33]

Suggestions for strategies to achieve better outcomes

We have accumulated 8 years of experience in scaling up the IMPACT project after it was established in 2014. We have learned from our mistakes, failed strategies and debacles, which have led to our success. In this section, we emphasise the strategies that were effective in achieving better outcomes.

Examine the actual needs of the target group to solve the identified problem

The underlying causes for identified problems vary from group to group; therefore, it is important to use a scientific method to identify the actual problem and its possible root causes to effectively resolve the problem. We conducted an empirical study to identify the problem of low cancer screening uptake rates among ethnic minorities. The results highlighted the importance of tackling the identified barriers to minorities' participation in cancer screening tests. We identified gaps in Hong Kong cancer screening services; these findings supported our appeal to obtain government and university funding and begin the IMPACT project. To date, we have obtained funding of >HKD 4.5 million to scale up the IMPACT project.

Identify strengths of the target group and use their available community resources

Various resources are needed to scale up any programme. Apart from financial resources, the available community resources should be used fully, which underlines the importance of strengthening the relationships between peers in eligible minority groups to encourage them to undergo cancer screening and build a support network among the minority communities, community organisations and cancer screening service providers. Throughout the process of developing and implementing the IMPACT project, we noted various strengths of the minority communities, such as the close relationships among community members. Thus, identifying peer champions and involving them in the IMPACT project can enhance its efficiency and effectiveness. Moreover, partnerships with community organisations can help obtain support for using community resources in the IMPACT project (e.g. venues for implementing interventions, data collection, assisting in co-ordinating subject recruitment and project promotion).

Working with the minority community instead of working for them

Mutual collaboration with ethnic minorities is the key to successful implementation of the IMPACT project because of the obtained insights into their actual health needs. In the process of developing the IMPACT project, we gained extremely valuable experience from working with minority groups. We learned that the usual methods of providing health-related information to the general public may not be beneficial for different ethnic groups. For instance, the Nepalese do not use the term 'cervix'; thus, simple explanations should be used when educating Nepali women about what the cervix is and where it is located. When developing educational material on breast health for Pakistani women, feedback from Pakistani men should also be considered because the Pakistani community is male dominated. In developing the IMPACT project, the opinions of Pakistani men led us to be more vigilant in using pictures when developing material for breast health awareness among Pakistani women. For example, the facial appearances and body parts of unclothed women should be concealed in illustrations used in the intervention materials. Furthermore, information about youth health centres and interpretation services should be included in health booklets in addition to women's wellness centres because of the reported tendency of early marriages among South Asians,[34] and language barriers that hinder their access to cancer screening services, respectively. Our experience working with ethnic minorities for the IMPACT project increased our awareness of the importance of understanding their cultures and health needs to provide acceptable and effective methods for health promotion.[35]

Widely disseminate the IMPACT project findings

Making the IMPACT project visible to society and stakeholders during scaling-up activities has both direct and indirect impacts. Disseminating the IMPACT project findings through publications in international refereed journals may help gain greater attention from healthcare professionals, government officials and professional organisations. In this way, enlightening the public about the benefits of the IMPACT project and its findings through mass media publications may also lead to great responses. Recently, the findings were cited by a legislative councillor in Hong Kong who advocates for the formulation of health policies for ethnic minorities to address their needs.[36] Moreover, our article,[28] has been cited by the National Cancer Institute in

support of promoting awareness and knowledge of cancer screening among racial/ethnic and rural populations.[37] To increase public awareness about the importance of cancer screening services and inform the government about the importance of improving accessibility of cancer screening services for South Asian women, we also advocated for minority groups and disseminated our project findings in newspaper articles, which drew attention from a reporter who further invited us to participate in a new programme to increase public awareness of the challenges encountered by ethnic minorities when accessing healthcare services in the HKSAR.

Future directions

To date, the IMPACT project has covered three types of cancer screening programmes (i.e. breast, cervical and colorectal cancers) and is expanding to encompass more ethnic minority groups. We are continuously trying to scale up the IMPACT project by increasing the number of South Asians who can receive the evidence-based multimedia intervention and the multimedia training programme for community health workers and extending our study into other ethnic minority groups (e.g. Indonesian minority groups). To facilitate these extensions of our project, we plan to employ three strategies. First, we plan to translate the educational materials used in the intervention into the native languages of these ethnic groups. Second, an expert panel and a group of lay Indonesians will review the translated materials to ensure that they are semantically equivalent and culturally relevant. Third, we will expand the types of interventions used from early cancer detection to cancer prevention via vaccination. To date, we have collaborated with >50 community organisations and 40 cancer care service providers to extend the IMPACT project to different ethnic groups through our website (http://minorityhealth.nur.cuhk.edu.hk/). Our website address is also shared on our community partners' websites and social media.

Moreover, the IMPACT project has been adopted successfully in developing Asian countries, such as Nepal. In February 2019, the project team reached out to two colleges in Nepal to educate over 210 healthcare providers, nursing students and educators about cancer screening services among minority groups. Both colleges have now agreed to incorporate our educational materials into their nursing curricula. The Government of Nepal fully supports our mission to implement the IMPACT project in Nepal and enhance the quality of healthcare services and health education for cancer prevention in rural areas. In October 2019, we visited the Western Development Region of Nepal and submitted a report of our situational analysis to the Ministry of Health of the Government of Nepal.

We also plan to scale up the IMPACT project into other countries in the WHO Asia-Pacific region, such as mainland China and Vietnam, which also have disparities in their minority groups' access to cancer screening services. However, the COVID-19 pandemic is currently a major hindrance. In the meantime, innovative approaches, such as using smartphone applications, could be developed to make our educational and training materials more accessible.

Conclusion

There is a urgent need to achieve equitable access to cancer prevention and screening services to reduce the cancer burden in the Asia-Pacific region. We recommend that policies can build upon the successful strategies of the IMPACT programme to enhance accessibility of cancer prevention and early detection of cancer services so as to reduce health disparities in the Asia-Pacific region. Through our collective efforts, we believe that Goal 3 of the SDGs, that is, ensuring healthy lives and promoting the well-being of all people at all ages, can be achieved by 2030.

Declaration of interests

The authors declare that no conflicts of interest exist.

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Nil.

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