

ORIGINAL RESEARCH ARTICLE

Evaluating a Culturally Tailored Public Health Forum in Improving the Knowledge and Understanding of Chronic Disease Management in the Chinese Population: A Mixed-Methods Study

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Background: Chronic disease management is fraught with many challenges for ethnic minorities. Studies conducted in non-multicultural populations suggest that patient and community engagement initiatives can improve chronic disease-management practices. However, literature on culturally specific community engaging programs is relatively sparse. The interCultural Online Health Network (iCON) is a culturally tailored, patient, and community engaging health-promotion program, which provides culturally specific health education to British Columbia (BC)'s multicultural communities. We aimed to assess if the iCON 2020 Chinese Health Forum can improve the knowledge and understanding of chronic disease self-management in the Chinese community of Vancouver, BC.

Methods: We conducted a sequential mixed-methods study by administering pre- and post- validated questionnaires, followed by semi-structured interviews conducted 1–2 months after the forum. We assessed our primary outcome of difference in self-efficacy scores post-forum using paired *t*-tests and further illuminated our research question through a thematic analysis of the semi-structured interviews.

Results: From the 381 participants that attended the Health Forum, 131 consented to completing the pre- and/or post- surveys, and seven provided consent to participate in the follow-up interview. There was a modest but statistically significant difference in self-efficacy scores pre- and post- forum participation (Mean difference = 0.58, S.D. = 1.42; [95% CI: 0.26–0.90], $t(77) = 3.60$; $P = 0.001$, $d = 0.41$). Participants attributed the effectiveness of the Health Forum to its accessible yet engaging programming and focus on culturally tailored health education.

Conclusion: A culturally tailored, patient engagement and community outreach program effectively improved Chinese community members self-efficacy in managing their chronic diseases and was well received by participants. iCON's 2020 Chinese Health Forum presents a model with associated principles of approach for similar culturally specific health education and community engagement programs that need to be developed to reduce the burden of chronic diseases in multicultural populations.

Key Words: patient engagement ■ community outreach ■ health promotion ■ culturally tailored ■ self-efficacy ■ Chinese

Non-communicable chronic diseases (NCDs), such as diabetes, cardiovascular disease, cancer, and chronic pain, are known to contribute to approximately 71% of

deaths globally.¹ Furthermore, the burden of disease varies widely between ethnicities and countries.¹ For example, people of Chinese origin are at a significant risk of death from

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POPULAR SCIENTIFIC SUMMARY

- iCON's 2020 Chinese Health forum, a culturally tailored, patient engaging, and community outreach program, significantly improved Chinese adults' knowledge of self-efficacy in managing their chronic diseases at home.
- Chinese adults attributed the improvement in self-efficacy to the culturally tailored content delivered by the forum and its accessibility, including the option to attend virtually and language support.

chronic diseases, with approximately 80% of deaths in China being attributable to NCDs.² Asian and Pacific Islanders, which include people of Chinese origin, are at a significantly higher risk of dying from an NCD compared to any other ethnic population.³ The risk of NCDs persists in Chinese people who immigrate elsewhere, with the risk of developing NCDs increasing with increase in the length of stay in the host country.⁴⁻⁶ Several studies have suggested that poor health outcomes from NCDs in visible ethnic minorities, including Chinese populations, may be attributable to a lack of access to quality health care services.⁷⁻⁹ Thus, promotion of chronic disease prevention and management is essential for reducing the burden of NCDs on individuals and economies worldwide.^{1,10} Furthermore, knowledge and understanding of chronic disease self-management has been affirmed as a key component of improving self-efficacy and subsequent health outcomes among older adults.¹¹

Various types of community health-promotion programs, delivered either in person or via digital technology, have been successful in improving self-efficacy and facilitating chronic disease self-management.¹²⁻¹⁴ Regardless of the approach, patient engagement stands out as an essential principle in

successful community health-promotion programs. Health services research has repeatedly demonstrated the utility of patient engagement in chronic-disease self-management and an overall improvement in health.¹⁵ Yet, patient engagement practices in health promotion are fraught with social and cultural challenges for multicultural populations due to language barriers and limited access to technology.^{16,17} Additionally, ethnic minorities are more likely to experience difficulty navigating the healthcare system and may develop a general mistrust towards healthcare professionals.¹⁸ This may be due to a cultural divide that precludes healthcare professionals from understanding the systemic obstacles that ethnically diverse patients face when seeking healthcare, such as not being able to arrive on time to appointments due to unreliable transportation.¹⁸ Patient engagement and community health-promotion programs that address sociocultural challenges and systemic barriers as well as build trust with health professionals are therefore warranted. Programs that utilize a multifactorial approach, including culturally tailored, skills-based health education, and an interdisciplinary knowledge dissemination team of health professionals can be effective in reducing the burden of chronic diseases in minority populations.¹⁹ In fact, such approaches are put forth as part of the five *Common Strategies for Enhancing Cultural Appropriateness* (CSECA) model (Table 1), one of the most common paradigms used to develop and/or assess cultural tailoring of a health-promotion program.²⁰ The five strategies encompass the following overlapping areas: (1) peripheral – incorporating visuals that may appeal to a cultural group, (2) evidential – data and results specific to the given population, (3) linguistic – presenting information and materials in the native language of the cultural group, (4) constituent-involving – including members of the cultural group in the planning and programming, and (5) sociocultural – incorporating the

Table 1. How iCON's 2020 Health Forum implemented the strategies for enhancing cultural appropriateness in a health-promotion program.²⁰

Strategy	Definition	How iCON did it
Peripheral	Incorporating materials that appeal to a given group based on appearance of images, pictures, colors etc. to enhance the receptiveness of messages and acceptance by the target group	Promotion materials and educational resources, including cultural images, colours and symbols, created in consultation with our clinical lead from the Chinese Community (BH)
Evidential	Present evidence that speaks to the impact of the program on the group directly, including epidemiological data specific to the population and issue at hand	All clinical presenters were from the Chinese community with intimate knowledge of working with Chinese patients and worked with our clinical lead (BH) to target their presentations for the Chinese community.
Linguistic	Present education and information in the native language of the target population to ensure effective communication	The iCON 2020 Health Forum was conducted in Cantonese with simultaneous interpretation to English and Mandarin
Constituent-involving strategies	Involve members from the target population in the planning and execution of the event to draw on their experiences, while ensuring linguistic and cultural relevance	All presenters, working group members and clinical lead (BH) were from the Chinese community
Sociocultural strategies	Incorporating cultural values, beliefs, and behaviors in health messages and promotion to provide a broader context about a given chronic disease	Health messaging was tailored in consultation with our clinical lead from the Chinese Community (BH). The presenters also derived on their lived experiences in Chinese households when providing health information to ensure cultural specificity.

group's cultural values, beliefs, and behaviors into messaging and programming. These strategies provide a standardized set of criteria that are evidenced based to make an intervention culturally specific. The model seeks to address the needs of a cultural group for creating and increasing the efficacy of culturally appropriate programming.²⁰ Nonetheless, patient engagement and community health-promotion programs employing culturally tailored approaches to behavior change are not common, nor is their effectiveness commonly validated in multicultural populations.²¹ According to a recent review, only 14% of the culturally tailored clinical trials from the Patient-Centered Outcomes Research Institute's Addressing Disparities portfolio of the United States targeted Asians and Pacific Islanders.²²

Recognizing the need for equitable access to healthcare practices in British Columbia (BC) through culturally competent care, the University of British Columbia Faculty of Medicine Digital Emergency Medicine (DigEM), in partnership with the BC Ministry of Health Patients as Partners program, collaborated over the past decade to establish public engagement and educational programs to promote optimal prevention and self-management of chronic diseases in multicultural populations through the Intercultural Online Health Network (iCON).^{23,24} This partnership was created as part of the BC Ministry of Health's mandate to advance patient- and family-centred care. Founded in 2007, iCON deploys both in-person and technology-enabled approaches in engaging ethnic community members, patients, and their caregivers through community outreach health-promotion programs in BC.²⁵⁻²⁸ iCON collaborates with partners from health authorities, community health care providers, education institutions, and the government to carry out its community and patient engagement goals. The iCON program specifically engages ethnic minorities such as Chinese and South Asian communities of BC and involves them in the research/evaluation process. Accordingly, the iCON program and the partnership with the Ministry of Health fit well within the community-based participatory research model.²⁹ Further details on the iCON program and the partnership have been published elsewhere.^{23,30}

In this paper, we aim to describe and evaluate one of iCON's many community-based health-promotion events, the iCON 2020 Chinese Health Literacy Forum. We applied the culturally appropriate patient-engagement principles in this forum's design and implementation, and assessed its ability to improve the self-efficacy of the Chinese population of Vancouver, BC in managing their chronic diseases.

METHODS

Intervention – the iCON 2020 Chinese Health Forum

iCON's 2020 Chinese Health Forum was designed to deliver on one of those goals, by specifically focusing on

the Chinese community and was delivered on February 22, 2020 (an equivalent forum, catering to the South Asian community, was delivered subsequently). It aimed to improve the knowledge and understanding of Chinese adults, particularly older adults, in managing their chronic conditions at home, with a special emphasis on Arthritis and Osteoporosis management. For this forum, we brought together patients and their caregivers, healthcare professionals, and community organizations all under one roof to disseminate knowledge on fall prevention, mobility, home safety, chronic muscle and joint pain, the importance of nutrition in managing Arthritis and Osteoporosis, and tips on coping strategies to alleviate the psychosocial burden of such chronic conditions. The forum consisted of two parts (as shown in the event poster; Appendix A). The first part was an open house session where participants were provided with the opportunity to take part in health screenings such as a mental health assessment or a workshop on how to avoid falls. Participants were encouraged to access information booths set up by various community organizations such as Osteoporosis Canada, HandyDART, a door-to-door ride service for those who have difficulty accessing public transit, The United Chinese Community Enrichment Services Society (S.U.C.C.E.S.S), and others to learn more about community services and digital resources that could help them manage their chronic conditions. The second part of the forum featured a panel of health professionals, including one family physician, two rheumatologists, two nurses, one dietitian, one pharmacist, one occupational therapist, one physiotherapist, and one psychologist who engaged the audience and started a discussion on how to improve self-efficacy when managing Arthritis and Osteoporosis.

The forum was delivered in Cantonese, both online, through a virtual conference option, and in-person, at the Chinese Cultural Center in Vancouver, BC. We also provided a virtual conference option to those at the Vancouver public library and Villa Cathay Long-term Care Home. We provided simultaneous language support including Mandarin and English interpretations online, and in-person. We opted for Cantonese as the primary language of delivery since the majority of our target audience in Vancouver, BC, primarily speaks Cantonese over Mandarin.³¹ We further ensured that the forum was culturally relevant by promoting the event through Chinese public media and asking the Chinese healthcare panelists to use examples that were common to Chinese families, when discussing disease management. Table 1 further describes how iCON's 2020 Health Forum utilized the five CSECA in health promotion.

Study design

We collected quantitative and qualitative data sequentially in our mixed methods explanatory evaluation study. We collected quantitative data using surveys administered at

iCON's Chinese Health Forum on February 22, 2020. We collected qualitative data through semi-structured interviews conducted 1 month after the forum by phone. Our team analyzed both sets of data separately but discussed them together here to coherently answer our quantitative research question.³² The mixed-methods design suits our primary objective of thoroughly assessing the impact of iCON's 2020 Chinese Health Forum and supports our evaluation by building upon and enriching the quantitative findings with in-depth participant perspectives.^{33,34} Qualitative interview data provides extensive detail relating to the 'why and the how' of quantitative outcomes – an approach commonly used in health-promotion studies.^{34,35}

Participants

The participants who contributed to the data presented in this paper consisted of Chinese adults (18+) who attended the iCON 2020 Chinese Health Forum, either in-person or online, through a virtual conference option. These Chinese adults were recruited through healthcare professional referrals, electronic print and social media promotions, and word of mouth. We also sent personal email invitations to Chinese individuals who are part of iCON's community email list serve to leverage iCON's active members network across BC. Although the forum was directed towards Chinese adults, we did not restrict people of non-Chinese origin or younger individuals from attending.

Participants attending the forum and completing the survey provided informed consent at the forum. Those who wished to be contacted for interviews provided informed consent separately and the evaluation study was approved by University of British Columbia's Ethics committee (ID: H11-03384; August 30, 2012).

Data collection

Quantitative

We measured our primary outcome of assessing the difference in knowledge and understanding of chronic disease self-management in Chinese adults after attending the forum compared to before using a pre-test, post-test design. All participants attending the forum were eligible.

Chronic disease self-efficacy. To answer our primary research question of whether there is a difference in knowledge and understanding of self-efficacy as a result of the forum, we administered a validated *Chronic Disease Self-efficacy (CDSE)* scale³⁶ in the pre- and post-forum survey, which has also been tested in the Chinese population.³⁷ The six-item CDSE scale is a shortened version of several other CDSE scales and has been cited as less cumbersome for participants.³⁶ The scale aims to assess the participant's confidence in being able to navigate symptom control, role function, emotional

functioning, and healthcare professional reliance that is consistent across chronic diseases.³⁶ It is scored on a Likert scale of 1 to 10, with 1 being 'not at all confident' and 10 being 'totally confident'. The total score for the scale is represented by the mean of the six items, with a high number indicating high self-efficacy.

Our team primarily administered the Traditional Chinese translated version of the six-item CDSE scale at the forum (Supplementary Table 1a and b, Appendix B and C). The Chinese translated CDSE scale was derived from the group that validated the short CDSE scale in the Chinese population with appropriate permissions.³⁷ We then reviewed the draft and had native speakers on our team back-translate it while ensuring cultural and linguistic relevance to the Chinese population of Vancouver, BC.

Social isolation scale. We also administered a social isolation level questionnaire, called the *Friendship scale*,³⁸ as part of the pre-forum survey (Appendix C, A3) to further understand the demographic of the participants attending the forum and since feelings of isolation and depression have been shown to moderate the effects of interventions on self-efficacy.³⁹ This short five-item scale aims to capture different aspects of isolation including but not limited to personal intimacy, loneliness, getting along with others, accessing support when needed, and being dependent. The *Friendship scale* uses 5-point Guttman-type responses, with every question requiring a response of either 'almost always', 'most of the time', 'about half of the time', 'occasionally', or 'not at all'. Each of these options is given a number from 0 to 4, depending on the question type.³⁸ The total score for the scale can be calculated by simply summing up the value of each option for every question, with the total ranging from 0 to 24. A high score on the *Friendship scale* (range 20–24) indicates high social connections.

Although the *Friendship scale* has not been validated in the Chinese population, we used an already Traditional Chinese translated version that was cited elsewhere.⁴⁰ We then reviewed the draft and had native speakers on our team back-translate it while ensuring cultural and linguistic relevance to the Chinese population of Vancouver, BC.

We ensured that all participants received a welcome package upon entry to the forum which consisted of an English or a Traditional Chinese translated version of the pre-forum (Appendix B, Part A) and post-forum (Appendix C, Part B) surveys and consent form. The pre-forum survey included demographic questions (i.e. age, gender, education level, household income, chronic conditions, language preference, self-management of health, general health status, current health/mobility issues, and social isolation level) in addition to the CDSE scale, while the post-forum survey only included the CDSE scale. For those that attended the forum online, we provided an English and Traditional Chinese translated REDCAP survey option that they were prompted to complete at the start of the forum and after the final talk.

We provided approximately 10 to 15 min for survey completion at the start of the forum and after the final talk, respectively. We provided a \$CAD20 gift card to those that completed both pre- and post-surveys and participated in the follow-up interview (Appendix D, Part C).

Qualitative

We conducted semi-structured interviews with forum participants 1–2 months after the forum to further illuminate our main research question: how the iCON 2020 Chinese Health Forum can improve the knowledge and understanding of chronic disease self-management in the Chinese community of Vancouver, BC. Interview questions explored participant's overall forum experience, barriers and facilitators to behavior change and as applicable, their experience living with their chronic condition(s). (See Appendix D for Interview Guide). Participants were given the option to leave their contact information on their consent forms to participate in this follow-up interview. The interviews were conducted by phone call in Cantonese and audio recorded by our team members who are fluent in Cantonese and English.

Data analysis

Quantitative

We analyzed the quantitative survey data using SPSS v.26.⁴¹ We used descriptive statistics to show the sociodemographic characteristics of participants who attended the health forum. For the purposes of simplifying and highlighting the most relevant demographic data to the research question, we recoded the five category variable: 'who manages your overall health' to a binary variable: 'self-management at home' (yes/no). Continuous variables are presented as means with standard deviations or 95% confidence intervals, while categorical variables are presented as counts or proportions, as appropriate. We used a paired *t*-test to assess the differences in the CDSE scale mean scores between the post- and pre-forum survey respondents. We removed outliers if they were more than 1.5 box-lengths from the edge of the boxplot and if inspection of their values indicated them to be extreme.

We also conducted an imputation data analysis using the automatic fully conditional specification multiple imputation method with a linear regression model for scale variables, for participants who had missing values at random for either the pre- and/or the post- forum CDSE scale measures.

Qualitative

Two bi-lingual team members transcribed and translated the interview audio files to English at the point of

transcription, and they consulted each other for clarification as transcriptions and translations were completed. Our bi-lingual team members also reviewed each other's transcripts for quality assurance. The thematic analysis steps defined by Braun and Clarke were used by our team to code 101 pages of transcripts from the seven interviews and develop themes grounded in the interview data.⁴² Thematic analysis defined by Braun and Clarke is a form of grounded theory that is useful for smaller data sets. The codebook was created through familiarization with the data by creating succinct codes identifying important features of the data.⁴² Using an inductive approach to coding, two team members (H.O and M.M) coded the first two transcripts together and had regular meetings to discuss and unify our codes that identified important features of our data to create a master codebook. Transcripts were coded using NVivo. An interrater reliability score of Kappa = 0.84 was calculated for the remaining transcripts coded independently.

RESULTS

Quantitative results

Table 2 shows characteristics of participants who attended the iCON 2020 Chinese Health Forum. Of the $N = 381$ participants that attended the forum, either in-person or remotely, $n = 131$ consented to participating in the evaluation. From them, $n = 116$ completed the CDSE scale survey (Fig. 1).

The mean age of participants was 68.7 years, with most being older adults, belonging to the 60- to 80- years age group (64.8%). Of the attendees, 64.9% were females, while 26.7% were males. More than half of the survey respondents reported having at least one chronic condition (60%), with 78% of those reporting some form of Arthritis (i.e. Rheumatoid or Osteoarthritis) and/or Osteoporosis. Interestingly, less than a quarter of the participants (17.6%) reported that they are currently able to self-manage their health at home, even though most of the participants reported their current health to be 'fair' (50.4%) and not excellent (4.6%). Majority of participants said no (49.6%) when asked if they were currently experiencing any health or mobility issues. Finally, the mean value on the social isolation scale for the participants attending the forum was 16.76 (SD = 4.65), which suggests that the participants had some social support.

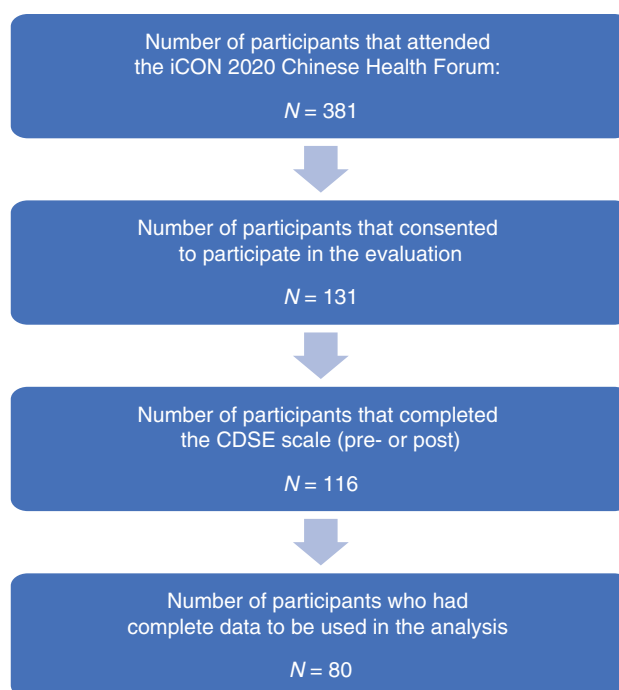
Differences in CDSE scale pre- and post- forum

With regards to the CDSE scale, Chinese adults who completed the survey reported a mean score of 6.22 (S.D. = 1.95) at the pre-forum (baseline) stage ($n = 96$) which increased to a mean score of 6.80 (S.D. = 1.86)

Table 2. Demographics of participants attending the 2020 iCON Chinese Health Forum.

Participant Characteristics	N (%)	
Access location		
Chinese cultural center	104 (79.4)	
Vancouver public library	1 (0.8)	
Villay Cathay care home	7 (5.3)	
Online	9 (6.9)	
Participant age (years)	N = 116	Median = 70 (IQR = 8.50)
Gender		
Female	85 (64.9)	
Male	35 (26.7)	
Education level		
Some secondary/high school or below	48 (36.6)	
Certificate or diploma	31 (23.7)	
Undergraduate degree	24 (18.3)	
Post-graduate	1 (0.8)	
Prefer not to say	15 (11.5)	
Annual household income*		
Less than 20k	35 (26.7)	
20k–40k	41 (31.3)	
41k–60k	9 (6.9)	
61k–80k	5 (3.8)	
81k–100k	1 (0.8)	
Chronic conditions		
Arthritis	47 (35.9)	
Osteoporosis	31 (23.7)	
Gout	10 (7.6)	
Other	5 (3.8)	
Preferred language for health information		
Chinese	56 (42.8)	
English	8 (6.1)	
Either	15 (11.5)	
Self-manage health at home		
Yes	23 (17.6)	
No	108 (82.4)	
General health status		
Excellent	6 (4.6)	
Very good	5 (3.8)	
Good	30 (22.9)	
Fair	66 (50.4)	
Poor	10 (7.6)	
Current health/mobility issues		
None	65 (49.6)	
Yes	43 (32.8)	
Social isolation scale	N = 100	Mean = 16.76 (SD = 4.65)

*Income categories are measured in Canadian dollars.

**Figure 1. Number of participants that attended the iCON 2020 Chinese Health Forum and completed the survey.**

post-forum ($n = 100$) (Table 3). Two outliers were removed from the analysis since they were more than 1.5 box lengths from the edge of the boxplot and considered extreme values upon inspection. Based on the paired t -test, this is a statistically significant mean increase of 0.58 (S.D. = 1.42; 95% CI: 0.26–0.90), $t(77) = 3.60$; $P = 0.001$, $d = 0.41$ in the CDSE scale as reported by participants after the forum compared to before the forum.

The imputed data analysis was similar. The mean CDSE scale score for participants at the pre- and post-forum stage ($n = 116$) was 6.29 and 6.92, respectively (Table 3). This is a statistically significant difference of 0.64 (95% CI: 0.28–0.99), $t(113) = 3.68$; $P = 0.001$.

Qualitative results

Through our post-forum interviews, we elaborated upon our quantitative component by identifying themes to explain our research question. We interviewed seven iCON 2020 Chinese Health Forum attendees to understand their unique experiences, five women and two men, whose average age was 70 years (Table 4). The following sections include a summary of the themes that resulted from the analysis of the interviews with illustrative quotes (Fig. 2).

Theme 1: Facilitators and Barriers for Participation in the Health Forum

Facilitators to participation in the forum. An essential element for forum attendees to learn the chronic disease self-management content was their participation in our health forum. Several aspects of our forum organization

Table 3. Comparison of chronic disease self efficacy (CDSE) scale scores pre- and post-forum.

Data type	Question		N	Mean (SD)	Mean difference (95% CI)	P
Original	How confident do you feel that you can keep the fatigue caused by your disease from interfering with the things you want to do?	Pre-forum	98	6.18 (2.17)	Not calculated	
		Post-forum	100	7.00 (1.92)		
	How confident do you feel that you can keep the physical discomfort or pain of your disease from interfering with the things you want to do?	Pre-forum	98	5.94 (2.18)		
		Post-forum	99	6.91 (1.88)		
	How confident do you feel that you can keep the emotional distress caused by your disease from interfering with the things you want to do?	Pre-forum	96	6.03 (2.25)		
		Post-forum	98	6.91 (2.03)		
	How confident do you feel that you can keep any other symptoms or health problems you have from interfering with the things you want to do?	Pre-forum	97	6.15 (2.21)		
		Post-forum	100	6.77 (2.13)		
	How confident do you feel that you can do the different tasks and activities needed to manage your health condition so as to reduce your need to see a doctor?	Pre-forum	96	6.36 (2.24)		
		Post-forum	99	6.80 (2.03)		
How confident do you feel that you can do things other than just taking medication to reduce how much your illness affects your everyday life?	Pre-forum	99	6.41 (2.21)			
	Post-forum	98	6.90 (2.12)			
Imputed	Combined total	Pre-forum	96	6.22 (1.95)	0.58 (0.26–0.90)	0.001
		Post-forum	100	6.80 (1.86)		
Imputed	Combined total	Pre-forum	116	6.29 (2.01)	0.64 (0.28–0.99)	0.001
		Post-forum	116	6.92 (1.88)		

Table 4. Demographics of interview participants attending the iCON 2020 Chinese Health Forum based on the pre-forum survey.

Participant Age, years	Gender	Access location	Education level	Income level	Chronic conditions
68	F	Chinese Cultural Centre	Some secondary/high school or below	Less than \$20,000	Arthritis and osteoporosis
65	F	Chinese Cultural Centre	Certificate or diploma	Prefer not to say	Arthritis and osteoporosis
68	F	Online	Prefer not to say	\$20,000–\$40,000	None
75	M	Chinese Cultural Centre	Some secondary/high school or below	Less than \$20,000	Arthritis and osteoporosis
70	F	Online	Certificate or diploma	Less than \$20,000	Arthritis
71	M	Chinese Cultural Centre	Some secondary/high school or below	Less than \$20,000	Diabetes
[unknown]	F	No response			

and delivery facilitated our interviewee's forum participation. These key facilitators included ease of attendance through language support, virtual conference, speakers, and content.

An excerpt from one forum participant's interview explained the importance of our programming being offered in Chinese to facilitate her participation.

'To us, it's very helpful ... it is in Chinese, so we can understand. If it was in English, then I wouldn't understand I can learn the emergency numbers, so when necessary, I can self-manage.' – Female participant, age 68

Language was a key facilitator for her to understand the forum content and apply the content to enable her

self-management. As referenced in Table 1, iCON's linguistic strategy is one of the five key strategies implemented for enhancing cultural appropriateness in our forum.

Accessibility, including our forum's virtual conference option was an important facilitator for participants who could not attend in person because they lived in Victoria and/or could only attend if the location was accessible via public transit. The participant from Victoria also suggested that the webcast recording could facilitate the participation of her friends following the forum. Having the virtual conference option could help increase equitable access for forum participation for those who are not able to physically attend the forum event.

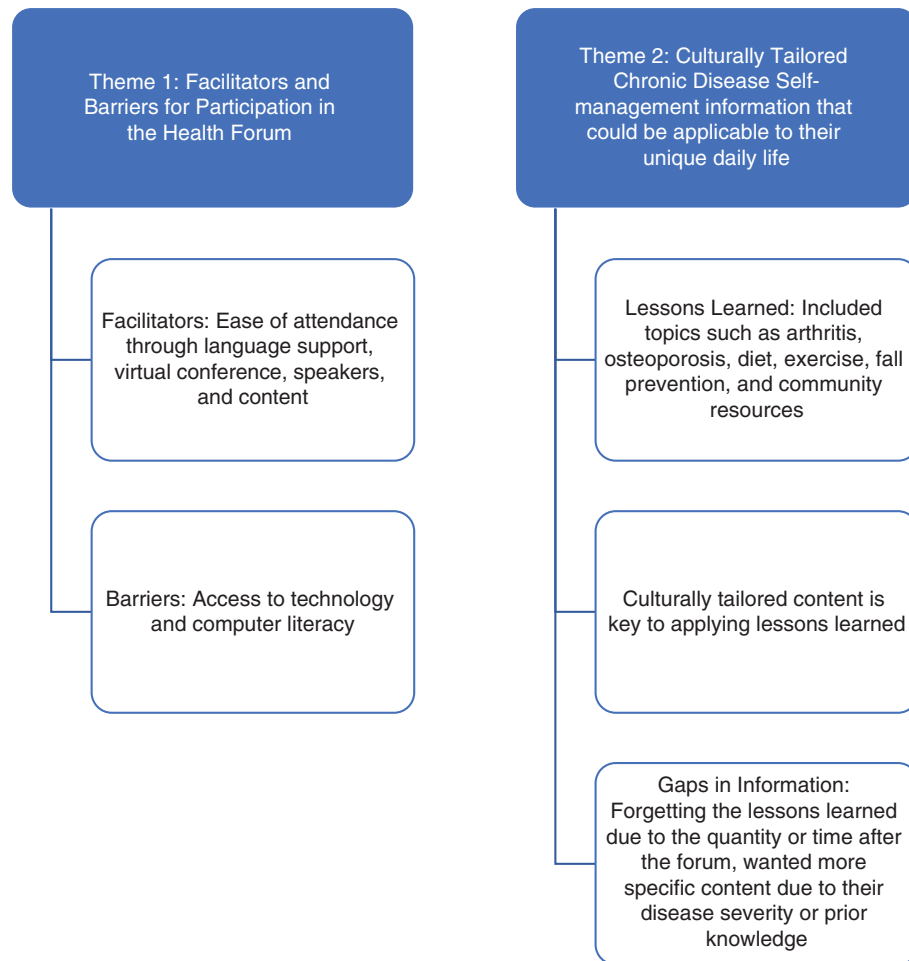


Figure 2. Summary of themes derived from interviews.

'I do really want to listen those health forums, but if you go to those places, I don't know where they are, it's really hard to find ... It has to be somewhere where public transit goes ... because I don't drive.' – Female participant, age 65

'And I even sent the link to my friend, that is afterwards ... and they said they could also watch it.' – Female participant, age 68

The quality of forum speakers was also a facilitator for community members to engage with the forum content and participate in the forum. An excerpt from one participant's interview below expressed that her enhanced engagement in the forum presentations was enabled by the speaker's content being relevant to her and the organization of the forum programming including question and answer sessions as well as engaging activities like learning and practicing exercises. The relevancy of the speaker's content to her was likely facilitated by iCON's implementation of the five strategies for enhancing cultural appropriateness in a health promotion.

'So, often when I listen to these types of forums, I will fall asleep very quickly. But this time, I didn't fall asleep because the forum speakers spoke so brilliantly, so witty, and maybe because what they spoke of related closely to me After speaking a while, there would be some

questions they asked. So, it led me to be very focused, able to listen, especially the doctors and the person who taught me to do exercises- exceptionally good.' – Female participant, age 68

Another participant expressed how the topic and depth of content delivered at the forum facilitated her participation. Of note was the relevance of topics and content to her and her community. The topics especially relevant to her were the illnesses discussed under the main forum topics of arthritis and osteoporosis including treatment, symptoms, management, and where to access resources.

'I think the forum, firstly, has a great topic. Because many elders have related illnesses/problems. Secondly, I think the flow was fulfilling and the content was rich: from treatment, to symptoms, to physiotherapist, even to sharing where to go for resources or services organizations provide.' – Female participant, age 70

Barriers to forum participation. Forum attendees noted that access to technology and computer literacy were barriers to participation that may hinder members of the community from participating in the forum.

Although the virtual option was a facilitator for some, for those without access or skill with technology, it

became another barrier. One participant described his lack of internet access at home due to cost which was especially challenging because community centres and libraries were closed due to COVID-19. Given this barrier, our blended approach with online and in-person options for attending for the forum enabled her attendance through the in-person option.

'... If you have a set time [for the online events], it would be very difficult for me, because I can't always use it [laptop at home]. Unless my home had it [Wi-Fi]. But my home doesn't. And they suddenly ... increased by 1/3. That is, the increase in price was outrageous ...' – Female participant, age 65

Another participant described how her lack of computer skills made her afraid of participating virtually. Her computer literacy was a barrier because she was not familiar with the online option for joining the forum especially because it involved audio and visual content.

'... I definitely was scared, because my computer skills are not that good ... For example, usually when I use the computer, I keep using the same programs But if you need me to change, then I don't know how ... only thing I'm scared of is that when the time comes for me to go online, I can't see it or hear it But this time, it was very lucky that there were no issues.' – Female participant, age 68

Theme 2: Culturally tailored chronic disease self-management information that could be applicable to their unique daily life

Lessons learned. Interview participants expressed that the chronic disease self-management information they learned was applicable to their daily life. Lessons learned at the forum included information on arthritis, osteoporosis, diet, exercise, fall prevention, and community resources. Key to facilitating participants uptake of lessons learned was the culturally tailored content provided in their language, also discussed in participation facilitators and barriers (Theme 1).

'I know a lot of people say they always go to iCON events because they are in Chinese ... For example, even for my mother and father, if you give them a lot of English, they would only be able to read very slowly and may not even understand everything. But, in Chinese, they can read it well, and culturally it is more understandable and easier to communicate.' – Female participant, age 68

One participant suggested that the forum provided an opportunity for learning lessons about self-managing her chronic disease rather than always relying on going to her doctor. She expressed the importance of the continued implementation of our forum.

'I always hope that we will have things like what you guys are doing. Of course ... for the elderly, good health is the most important. Because right now, we don't know anything, except to go to the doctor.' – Female participant, age 68

Another participant when expanding upon her lessons learned about arthritis suggested that the information she

learned helped her feel a sense of relief and decrease in stress. She felt that having the self-management information would allow her to cope better with her arthritis:

'... cope better about arthritis. I don't really understand why feeling of relief comes up, perhaps because you know more, therefore decrease in stress ...' – Female participant, age 70

Another participant suggested that the information she learned about osteoporosis helped to apply her knowledge and talk to her sister who is living with osteoporosis.

'Plus, I recently talked to my sister about- I sent this [forum web-cast] to her Knowing more about her osteoporosis-related things, so was [I] able to talk to her about more things.' – Female participant, age 68

Lessons learned about traditional dietary regimens were also described by one participant as applicable to their daily life. She expressed that she learned about areas in her diet to use caution.

'This is I have also listened to ... That is, being careful with what I eat. For example, eating things that aren't too fat, too sweet, too salty.' – Female participant, age 65

The exercise and fall prevention demonstration during the physiotherapist's presentation was also mentioned by interview participants as a lesson learned applicable to their life. She learned how to get up after falling which is important to her because she is at risk for falling.

'... the most memorable thing was learning how to get up after falling. Because I really connect with that. I feel pain in my legs and arms, so I am not stable when I walk. So, I need to hold onto things, it's very easy for me to fall. I'm very scared myself ... Yes, with actions, so it was easier for us to understand.' – Female participant, age 68

Culturally tailored content is key to applying lessons learned. Participants mentioned the importance of sharing information to raise awareness of existing culturally tailored resources. One participant explained that the culturally tailored government community resources provided were useful for their chronic disease self-management.

'Plus, later you talked about the channels that the government could help us. Those were very good.' – Female participant, age 68

Some participants also suggested that access to culturally specific online resources and the webcast forum recording on our iCON website would further facilitate their application of the information learned at the forum. One participant expressed that he often re-watches the resources provided on iCON's website.

'Even though my memory is not that great now, but I still often go to the iCON website to re-watch the workshops.' – Male participant, age 71

Culturally tailored diet information was also important for participants applying the forum content to make changes in their daily lives. One participant described how the information he learned about his traditional ethnic diet helped him consider adjusting the amount of rice he eats, but also acknowledged the challenges of making the change.

'I like to eat rice, very much love it, but of course I try to eat more vegetables, but I still can't reduce my rice intake. So, the health workshop [forum] told us to split each meal into 3 sections and for each meal to have a maximum fist-sized portion of rice ... But I'm so sorry, I must have a good $\frac{3}{4}$ cup of rice. I get hungry if I eat any less.' – Male participant, age 71

Gaps in information. However, there were some gaps in information learned at the forum. Some participants were likely to forget the content they learned at the forum due to the quantity or with increased time after the forum. An excerpt from one participant's interview when asked about what they learned at the forum describes that she had difficulty remembering the content.

'I don't really remember, possibly because it has been too long. If you, maybe talked with me a few days earlier, I might be able to provide a more concrete answer.' – Female participant, age 70

Some participants also wished for more specific content due to their disease severity or prior knowledge of their chronic condition. One participant expressed that she already knew the information shared at the forum and would have liked content that was more specific to her condition.

'So actually, what the doctors said was great, but in general, I already know many of the basic knowledge. So, whether it is in-depth enough, maybe, but not very specific' – Female participant, age 70

DISCUSSION

Through this evaluation, we show that the iCON 2020 Chinese Health Forum, a culturally tailored, patient engagement, community driven, health-promotion program is modestly effective in improving the knowledge and understanding of chronic disease self-management practices among the Chinese population of Vancouver, BC. The forum's programming, including, virtual conferencing options, live language support/interpretation, engaging speakers and culturally specific content addressing several components of healthy active living, including nutrition and mental well-being, may have contributed to the significant increase in participants' self-efficacy scores post forum.

The difference between mean pre- (6.22) and post-forum (6.80) CDSE scores is modest (0.58). The effect size, shown by Cohen's *d* (0.41), suggests a small to medium effect by conventional standards.⁴³ While effect

sizes are open to discussion, the CDSE scores and the change in scores must be considered in context of the demographic makeup of the participants attending the forum. The pre-forum CDSE score of 6.22 is higher than the average mean on the original CDSE scale, which was 5.17.³⁶ A primarily elderly cohort of participants attended our forum. Studies have shown that self-efficacy scores tend to be slightly higher in older adults, possibly due to their focus on maintaining a positive outlook towards life amidst declining health.⁴⁴ In addition, half (49.6%) of the participants completing the survey noted that they currently do not experience any health or mobility issues. It is plausible that the CDSE score was quite high at baseline because most of the participants were elderly and generally experiencing good health at the time of the forum. Perhaps, the participants considered themselves to be reasonably self-efficacious to begin with, which may have resulted in them self-reporting only modest changes in their self-efficacy, post forum. Furthermore, previous studies that have validated the CDSE scale suggest that the change in CDSE scores is directly related to changes in health indicators, such as health distress, illness intrusiveness, activity limitation, depression, and/or fatigue.⁴⁵ While the change in CDSE score post-forum is statistically significant, it may not be a clinically meaningful difference since it is highly unlikely for the health indicators themselves to change over the span of the forum. Typically, change in such health indicators is better assessed over a 6-month period, at minimum.⁴⁵ Moreover, there is evidence that interventions targeted at self-efficacy are more notably effective in populations with relatively high levels of depressive symptoms.⁴⁶ The participants attending the iCON 2020 Chinese Health Forum showed some levels of social support based on the social isolation scale. They did not feel isolated or felt that they had a lack of support, which are protective cognitive factors against depressive symptoms.⁴⁷ It is therefore reasonable that an adequately supported group of participants would not report a drastic change in their self-efficacy, post-forum. On the other hand, improvements in self-efficacy can reduce depressive symptoms.⁴⁶ The reciprocal relationship between self-efficacy and depressive symptoms³⁹ provides further support as to why even a small change in self-efficacy, such as the one seen in our evaluation, is important and warrants further inquiry.

Our qualitative findings support the value and utility of a community-based forum in addressing chronic disease self-management by providing rationale into why the self-efficacy score may have changed post-forum. Themes 1 and 2 (Participation facilitators and barriers as well as providing relevant culturally tailored information) suggest that supportive programming, such as focusing on dialectical preferences of the target audience and culturally tailored forum content helped participants understand the information better and equipped them to

self-manage their chronic conditions whenever needed. This is supported by the literature as health literacy, defined as 'the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others', and access to such information are some of the most significant barriers to improving self-efficacy.^{48,49} Our culturally tailored event was able to assist participants to find and understand the materials by delivering the content in Cantonese and Mandarin, while supporting them to use the information for health-related decisions, thereby improving their self-efficacy. A recent systematic review compiling data on culturally tailored interventions among Chinese Americans corroborates our finding that language is an important aspect of cultural tailoring and results in improved psychosocial outcomes.⁵⁰ In addition, based on lessons learned from providing relevant culturally tailored information (Theme 2), interview participants expressed their intent to use the health information they obtained at the forum to inform their own and others' health decisions. Participants expressed their intent to use and refer to the information they learned to make diet modifications, access government resources, increase their self-management skills instead of solely relying on their healthcare provider(s) to manage their arthritis.

However, interview participants expressed challenges with using the health information they learned at the forum including forgetting forum content due to the time elapsed and lack of more detailed content as discussed in providing relevant culturally tailored information (Theme 2). Potential ways to address these challenges in future programming include providing participants with follow-up information with the forum recordings and tip sheets with key take-aways from the sessions. Alternatively, having optional sessions for participants wanting more in-depth content and/or administering simple 'intention to change' questionnaires used in health professional continuing development could also help participants retain knowledge and inform their behavior change.^{51,52} Furthermore, several studies have cited lack of access issues, with access to location for health services being one of the major barriers to improving self-efficacy in underrepresented populations.⁵³⁻⁵⁵ This is particularly important in collectivist groups like the Chinese community, who prefer to participate in group activities in familiar settings that they share in common, such as Chinese community centres, and/or Chinatown.⁵⁰ Our forum's culturally central location and virtual conference options may have been effective in mitigating such issues by providing a familiar access point to those who could attend in-person while providing an alternative to those not being able to travel long distance or have transportation options as expressed in participation facilitators and barriers (Theme 1) as a barrier to forum attendance. Finally, prior evidence suggests that an

improvement in self-efficacy is dependent on being able to manage multiple challenges including being able to maintain a healthy diet, a regular exercise routine, and coping well psychologically.^{14,39,56} Based on providing relevant culturally tailored information (Theme 2) lessons learned identified from the participant interviews, it is plausible that the forum provided interview participants with practical tips to manage their diet and adopt healthier lifestyles while keeping Chinese customs and core-philosophies in mind; which in return, may have improved their self-efficacy. The incorporation of deep structural elements is integral to a culturally tailored intervention's success among the Chinese population.⁵⁰

This evaluation has several implications. Self-efficacy has been shown to improve self-management practices across various populations.⁵⁷ However, prior evidence suggests that there is a general lack of uptake of chronic disease self-management practices among ethnic minorities.⁵⁸ Enhancing multicultural communities' receptivity to health information and promotion programs is warranted especially since behaviors associated with chronic diseases are influenced by cultural norms.⁵⁹ Consequently, the improvement in self-efficacy scores of participants attending the iCON 2020 Chinese Health Forum is a testament to the utility of a culturally specific chronic disease self-management patient-engagement, community outreach program such as iCON. Our forum's effectiveness may be rooted in its ability to deliver on all of the five strategies identified in the CSECA model (Table 1).²⁰ This is particularly important in Asian and Pacific Islanders since they are some of the most diverse groups and have varying socioeconomic statuses, language proficiencies, and cultural practices rooted in Eastern medicine.²² Similar culturally tailored health interventions have been effective in successfully engaging patients and improving self-efficacy in the past.^{22,50,60,61} However, such programs and interventions are limited in employing all of the strategies identified in the CSECA model. For example, a review of culturally tailored trials aimed at reducing healthcare disparities showed that only 30% of the trials employed four or more strategies.²² Most of the trials used constituent-involving (including and engaging community in the programming), linguistic, and sociocultural strategies, while excluding evidential and peripheral strategies.²² While our health forum adds to successful culturally tailored health programs, it also creates a unique case for community-based health-promotion programs that are culturally specific and participant engaging in many ways. Our forum was able to specifically cater to the needs of the Chinese population of Vancouver, BC by enlisting the co-operation of healthcare professionals, community organizations, and the programming lead, who were all Chinese. They were all equipped with the ethnic specific evidence to work with the Chinese community and also had personal lived experience to draw from their experiences. This allowed them to deliver health information that was

culturally sensitive and specific, instead of a one-size fits all approach, which can render a culturally tailored intervention less effective.⁶² Furthermore, this evaluation tries to address a gap in our understanding of the effectiveness of culturally tailored programs in ethnically diverse populations. Our forum's qualitative component sheds some light onto how exactly such culturally tailored programs may be improving health behaviours, which remains understudied according to a recent systematic review of reviews assessing such interventions.⁶¹ Well-designed future culturally specific community outreach, patient engaging, health-promotion programs can facilitate chronic disease management in underrepresented populations and highlight the need to implement multilayered programs that address community needs in an effective way.

Our evaluation study has several strengths. First, we used a previously validated CDSE scale,⁶³ which was also ethnically validated in the Chinese population,³⁷ to measure the primary outcome of the evaluation. Second, conducting a pre-post evaluation and administering the short CDSE scale at both time points allowed us to calculate a meaningful change in participants' self-efficacy that could be specifically attributed to the forum. Finally, the mixed methods approach allowed us to go beyond the traditional quantification of self-efficacy and explain culturally specific factors that may have led to improvements in an important component of self-management of chronic conditions (i.e. self-efficacy) within the Chinese population. Nonetheless, there are some limitations to our evaluation which may affect its generalizability. First, only a few attendees (30%) completed the pre-and/or post-forum surveys, with a significantly smaller proportion of those attendees opting for the 1-month follow-up (6%). This precluded us from conducting subgroup analyses to understand the effectiveness of the forum in people with different chronic conditions or different income categories, for example. It is also possible that we did not reach saturation in our qualitative findings with only seven participants. There is some evidence, however, that saturation could be reached in as little as six interviews depending on the data quality and quantity.⁶⁴ In addition, it is important to note that we conducted this forum at the outset of COVID-19 in Canada,⁶⁵ which may have resulted in COVID-19 related research study fatigue.⁶⁶ Moreover, the increase in online attendance to our forum compared to previous years,⁶⁵ may have precluded some of the Chinese participants from comfortably participating in online evaluations, which are often affected by health literacy and ethnicity of the participants.^{67,68} Second, the data we collected in our evaluation was self-reported which is subject to several types of biases including social desirability bias and response bias.⁶⁹ Finally, the external validity of our findings is limited since the forum was specifically

tailored to the Chinese population of BC, a highly motivated racialized group, predominantly from Vancouver, BC. We did not have an active comparator group to evaluate the effectiveness of our forum. Generalizations to other Asian populations or ethnic groups should be made cautiously.

CONCLUSION

The iCON program, a culturally tailored patient engagement and community driven health-promotion program, is modestly effective in improving the knowledge and understanding of Chinese people of the Vancouver, BC, to manage their chronic diseases at home. Themes identified through our evaluation expand upon our quantitative findings by suggesting increased health literacy through facilitators for participants engaging with forum programming, as well as learning chronic disease self-management content from health care professionals that is culturally appropriate and applicable to their daily life. Our evaluation makes a case for the implementation of, and further research on, more culturally tailored patient engaging and community outreach health-promotion programs to alleviate the burden of chronic diseases in ethnically diverse populations.

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DECLARATIONS

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institution (University of British Columbia's Ethics committee; ID: H11-03384; August 30, 2012) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. This article does not contain any studies that employed animals and were conducted by any of the authors.

Consent for publication

Consent to publish has been received from all participants.

Consent to participate

Informed consent was obtained from all participants included in the study.

Availability of data and material

All data generated or analysed during this study are included in this published article and its supplementary files.

Competing interests

The authors have no relevant financial or non-financial interests to disclose.

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Author contributions

JL, HO, MM, SK, HNL, KH designed the evaluation. JL, HO, MM, SK conducted the evaluation. JK, HO, MM, IS analyzed the data and performed statistical analyses. JL wrote the manuscript. KH had primary responsibility for the final content. All listed authors read, edited, and approved the final manuscript.

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Appendix

Appendix A: iCON Chinese Forum Event Poster



與慢性疾病相處之道

Living Well with Chronic Conditions

關節炎和骨質疏鬆 Arthritis and Osteoporosis

22 星期六, 2月22日, 2020
Saturday, February 22, 2020

10:30 AM – 12:00 PM: 健康展覽及測試 Health Exhibition
 12:00 PM – 4:00 PM: 講座時間 Health Forum

Chinese Cultural Centre of Greater Vancouver
大溫哥華中華文化中心
 50 E Pender St, Vancouver, BC

在家觀看：網絡直播
 Watch from Home: Live Webcast
www.iconproject.org

免費入場
 Free Admission

國粵英
 Cantonese, Mandarin, English

慢性疾病導致的肌肉與關節疼痛、腫脹、以及僵硬時常會影響日常生活及活動能力、增加跌倒的風險、和降低生活質量。與專業醫務人員一起探討自我管理的策略！

Chronic conditions that cause muscle and joint pain, swelling and stiffness can affect your mobility and day-to-day living, increase risk of fall, and decrease quality of life! Join our experts to learn self-management strategies.

講座將重點討論幾個主題，包括：

The forum will focus on several topics including:

- 適當的營養攝入、藥物管理
 Proper Nutrition, Medication Management
- 減壓、運動、健康生活
 Stress reduction, Exercise, Healthy Living
- 社區資源以及支持計畫
 Community resources & Support programs

登記留座，請上 Register at: www.iconproject.org 或撥打 or 1-877-357-7611



Appendix B: Survey A (Pre-forum)

Survey A: Pre-forum

A1. Demographic information

Thank you for your interest in participating in the interCultural Online Health Network survey!

Please select below the location from where you are accessing this forum:

- Chinese Cultural Center Vancouver Public Library), Strathcona Branch
 Villa Cathay Care Home Online

Please tell us about yourself.

1. Please tell us your age: _____ years
2. Gender:
 - Female Male
 - Other: _____
3. What is your highest level of education completed?
 - Some secondary/high school or below Undergraduate degree
 - Certificate or diploma Post-graduate
 - Prefer not to say
4. What is your annual household income?
 - Less than 40,000 40,000-60,000
 - 61,000- 80,000 81,000-100,000
 - More than 100,000 Prefer not to say
5. What chronic condition(s) do you have?
 - Arthritis:
 - Osteoarthritis, Gout Other (Please specify):
 - Osteoporosis
 - Other (Please specify):
6. In which language(s) do you prefer to receive health information (health events, information brochures etc.)?

7. Who is responsible for managing your overall health? (Check all that apply)
 - I take care of myself/my own health
 - My spouse/partner cares for me
 - Family members other than my spouse care for me
 - I have assisted living (care/seniors home)
 - Other: _____

8. In general, would you say your health is:

- Poor
 Fair
 Good
 Very good
 Excellent

9. Are you currently experiencing health issues/mobility challenges?

- No
 Yes

A2.

Table a: Chronic Disease self-management survey

We would like to know how confident you are in doing certain activities. For each of the following questions, please choose the number that corresponds to your confidence that you can do the tasks regularly at the present time.

Currently,	Not at all confident										Totally confident
How confident do you feel that you can keep the fatigue caused by your disease from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10	
How confident do you feel that you can keep the physical discomfort or pain of your disease from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10	
How confident do you feel that you can keep the emotional distress caused by your disease from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10	
How confident do you feel that you can keep any other symptoms or health problems you have from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10	
How confident do you feel that you can do the different tasks and activities needed to manage your health condition so as to reduce your need to see a doctor?	1	2	3	4	5	6	7	8	9	10	
How confident do you feel that you can do things other than just taking medication to reduce how much your illness affects your everyday life?	1	2	3	4	5	6	7	8	9	10	

A3. Understanding social isolation among the seniors

During the past 4 weeks:

1. It has been easy to relate to others:

- Almost always
- Most of the time
- About half of the time
- Occasionally
- Not at all

2. I felt isolated from other people

- Almost always
- Most of the time
- About half of the time
- Occasionally
- Not at all

2. I had someone to share my feelings
with:

- Almost always
- Most of the time
- About half of the time
- Occasionally
- Not at all

4. I found it easy to get in touch
with others when I needed to:

- Almost always
- Most of the time
- About half of the time
- Occasionally
- Not at all

When with other people, I feel separate from them:

- Almost always
- Most of the time
- About half of the time
- Occasionally
- Not at all

6. I felt alone and friendless

- Almost always
- Most of the time
- About half of the time
- Occasionally
- Not at all

Appendix C: Survey B (Post-forum)

Survey B: Post-forum

B1:

Table b: Chronic disease self-management scale

We would like to know how confident you are in doing certain activities. For each of the following questions, please choose the number that corresponds to your confidence that you can do the tasks regularly at the present time

As a result of attending the forum,	Not at all confident									Totally confident
How confident do you feel that you can keep the fatigue caused by your disease from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10
How confident do you feel that you can keep the physical discomfort or pain of your disease from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10
How confident do you feel that you can keep the emotional distress caused by your disease from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10
How confident do you feel that you can keep any other symptoms or health problems you have from interfering with the things you want to do?	1	2	3	4	5	6	7	8	9	10
How confident do you feel that you can do the different tasks and activities needed to manage your health condition so as to reduce your need to see a doctor?	1	2	3	4	5	6	7	8	9	10
How confident do you feel that you can do things other than just taking medication to reduce how much your illness affects your everyday life?	1	2	3	4	5	6	7	8	9	10

Appendix D:

Part C: Qualitative questions interview guide

Intro blurb:

Hi <<Participant's Name>>, my name is <<Interviewers to introduce themselves>>. Thank you very much for joining us today. We really appreciate the time you are taking to share your experience with us. As part of this project, we will be interviewing participants that attended the iCON Healthy at Home forum. In these interviews, we hope to learn about how our forums have been able to help you better self-manage your chronic condition. At the end of this study, we will be writing a report sharing what we've been learning from these interviews with participants that attend our forums. We hope that by sharing these insights, health care providers and policy makers will be able to provide high quality culturally specific care that is appropriate for seniors from different cultural backgrounds.

So what you're doing today is very important – you're providing us with the building blocks we need to arrive at solutions that can work for your community.

This interview will take no more than 30 minutes. However, if at any point you would like to take a break or stop the interview, please feel free to do so any time.

Do you have any questions before we start?

The first thing we need to do is complete the consent form. We contacted you because you indicated on your consent form at the iCON Chinese forum that you would like to participate in this interview. Have you had a chance to read the consent form attached in our email or have them explained to you? [If not, interviewers to go over the consent form]. Do you have any questions? [Answer questions – proceed once participant is satisfied].

[Ask if not already asked using the phone blurb:] Please note our conversation will be audio recorded to make sure we don't lose information as we can't take notes fast enough. Do you agree to having our conversation audio recorded?

Do you consent to participate in this interview?

Thank you.

Any questions?

OK, let's begin.

Part one: Barriers and facilitators to behavior change

1. **To begin with, can you please tell me about your experience attending the forum?**
 - a. Can you please share anything that you may have learned at the forum?
2. **Could you talk about any changes you wanted to make based on what you learned**
 - a. Were you able to make the changes you wanted to make based on what you learned at the forum?
 - b. If yes, can you please describe what those changes were?
 - c. What helped you make those changes?
3. **Can you please tell me about anything that made it difficult for you to make those changes?**
 - a. What would have helped you to make those changes?
4. **We are interested in knowing about how participants use resources in their communities that could help them overcome such difficulties. Did you use any resources to help you? If yes, which ones?**
 - a. If you did not use them, what prevented you from using the resources?
 - b. Do you know of any other resources that could have helped you make those changes?
5. (if participant does not remember anything, please continue from here but also ask this question to everyone else): **What do you think would have helped you remember the information from the forum?** (eg. Follow-up phone call, email, workshop, take away resource etc.)

Part two: Experience of chronic condition

Intro: We are interested in learning more about your [chronic condition(s)] and how it affects your everyday life, including things like socializing.

1. **Can you tell me more about any chronic conditions you are currently living with? (e.g. arthritis, osteoporosis, etc.)** [If they have no chronic conditions, ask if they are caregiver for someone living with chronic conditions. If yes to caregiver, they can answer the remaining questions for the person they are caring for. If they are not a caregiver and have no chronic condition(s) proceed to question 4]
2. Can you please describe your experience living with [chronic condition(s)]?
3. Can you please tell me about all the things you do on a regular basis to manage your [chronic condition(s)] (e.g. taking pills, exercise routine, diet etc.)
4. Can you please tell me about the ways you are socially connected to others?
 - a. What kind of support systems do you have in place?
5. **Can you tell me about what helps you in being socially connected to others?**
6. **Could you tell me more about what makes it difficult to be socially connected to others?**
 - a. How do you think your [chronic condition] affects your ability to be socially connected?
 - b. What would help you be socially connected given your [chronic condition]?

Closing:

That's all the questions we had. Is there anything else that you would like to mention that we missed today? Thank you very much for your time.

Resources

Are there resources you would like to have to help you manage your health?

If participant asks for more information about COVID-19, recommend this free government-operated phone line

- ✓ COVID-19 hotline information:
 - COVID-19 hotline: 1-888-COVID19 or 1-888-268-4319 (Text: 604-630-0300)
 - Open 7:30 am - 8 pm, 7 days/week in over 110 languages
 - Provides **non-medical** information about COVID-19, including the latest information on travel recommendations and social distancing, as well as support and resources from the provincial and federal government. Information is available in more than 110 languages.

If participant asks for medical advice or information about health services, recommend this free government-operated phone line:

- ✓ **811. 8-1-1** is a free-of-charge provincial health information and advice phone line available in British Columbia. The **8-1-1** phone line is operated the Ministry of Health. By calling **8-1-1**, you can speak to a: health service navigator, who can help you find health information and services;
 - a registered nurse
 - a registered dietitian
 - a qualified exercise professional
 - or a pharmacist

Any one of these healthcare professionals will help you get the information you need to manage your health concerns, or those of your family.

Translation services are available in more than 130 languages.

If participant asks about community, social, and government services, tell them to call and text 211 (Multilingual- Punjabi available):

✓ 211 Directory of Services

211 is a multilingual service that provides free information and referral to a full range of community, social, and government services, and operates twenty-four hours a day, seven days a week.