

Family-based multimedia intervention to increase colorectal cancer screening uptake among South Asians in Hong Kong: a randomised control trial (abridged secondary publication)

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KEY MESSAGES

1. A family-based multimedia intervention was effective in increasing colorectal cancer (CRC) screening uptake among South Asians aged 56 to 75 years. A greater proportion of participants in the intervention group attended a medical consultation with a family doctor for faecal immunohistochemical testing and submitted a stool sample, compared with the control group ($P < 0.001$).
2. Of the 29 community centres and non-governmental organisations we approached, 25 (86.2%) promoted the intervention to South Asians in Hong Kong. Participants were highly satisfied with the intervention.

3. The family-based multimedia intervention should be incorporated into routine health promotion activities for South Asians in Hong Kong.

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Introduction

Colorectal cancer (CRC) screening, such as faecal immunohistochemical testing (FIT) and colonoscopy, is effective in the early detection and prevention of CRC. Despite the availability of CRC screening in Hong Kong, its uptake remains low, especially among South Asians.¹ Common barriers to CRC screening utilisation among South Asians include language barriers and limited awareness of CRC screening,² especially among older adults. Interventions to enhance their knowledge about and access to CRC screening are needed. Multimedia interventions are acceptable to South Asians and effective in the dissemination of health knowledge.³ We hypothesised that participation by younger South Asians would increase their awareness of CRC screening and empower them to encourage their older family members to undergo CRC screening. This study aimed to evaluate the effectiveness of a family-based, culturally sensitive, and linguistically appropriate multimedia intervention regarding CRC screening among South Asians aged 56 to 75 years, based on the reach-effectiveness-adoption-implementation-maintenance framework.

Methods

This was a cluster-randomised controlled trial with waitlist control groups. Based on the Health Belief

Model, a family-based multimedia intervention was developed. An advisory panel consisting of five members from South Asian communities in Hong Kong provided recommendations on strategies to enhance the cultural relevance of the intervention, which included a PowerPoint presentation, health information booklets, and a video clip. The PowerPoint presentation covered topics such as CRC risk factors and symptoms, myths and misconceptions about CRC, prevention and early detection of CRC, FIT procedures, the current CRC screening programme in Hong Kong, and the implications of a positive FIT result. The health information booklets were intended to reinforce the knowledge gained. The video clip emphasised the importance of family support in modifying CRC screening behaviours. Cultural relevance was enhanced by using South Asian actors and actresses.

Participants were recruited from six districts as dyads of older family members aged 56 to 75 years and their younger family members aged 18 to 55 years. The participants were from India, Pakistan or Nepal who had no personal history of CRC, had not undergone CRC screening in the previous year, and had never participated in a cancer screening intervention. Cluster randomisation was conducted at the district level. Only the outcome assessors were blinded to group allocation.

The intervention comprised a 90-minute health

talk using the PowerPoint presentation, during which the video clip was presented and the stool collection procedures for FIT were demonstrated. The health information booklets were distributed after the talk. Each dyad was scheduled to attend a medical appointment with a family doctor for an FIT consultation within 1 month. A site coordinator of South Asian origin accompanied the dyads to these appointments. Control dyads received the intervention within 2 months of completing the outcome assessments.

The primary outcome was the effectiveness of the intervention in promoting CRC screening uptake among the older family members, measured as the percentage of older family members who visited a family doctor for an FIT consultation and returned their stool sample for FIT. We also assessed the effectiveness of the intervention in promoting the willingness of younger family members to encourage their older family members to undergo FIT, as well as their readiness to assist older family members with FIT. Satisfaction among the intervention dyads was assessed. Data were collected upon recruitment, immediately after intervention, at the medical visit within 1 month of intervention, and upon return of the stool sample 2 months later.

Results

In total, 320 dyads were recruited from six districts and then randomly assigned according to district level in a 1:1 ratio to either the intervention or control group. Of these, 117 (73.1%) intervention dyads and 146 (91.3%) control dyads completed the study. Table 1 shows the baseline characteristics of the participants.

A greater proportion of older family members in the intervention group visited a family doctor for FIT immediately after the intervention, compared with the control group (71.8% vs 6.8%, $P < 0.001$, Table 2). Among the older family members who returned their stool sample for FIT 2 months later, all in the control group returned the sample with aid from their younger family members. In contrast, 62.2% of older family members in the intervention group returned the sample by themselves.

Immediately after the intervention, the proportions of young family members who expressed willingness to encourage and readiness to assist their older family members to undergo FIT decreased by 16.6% and 22.5%, respectively, among participants in the control group, whereas the proportions remained unchanged among participants in the intervention group. This difference suggests that the intervention was able to maintain the younger family members' willingness to encourage and readiness to assist their older family members to undergo FIT.

Of the 29 partner organisations, 25 (86.2%) engaged in our intervention by promoting it to community peers, whereas 20 (69.0%) supported implementation of the intervention by providing a venue. Of 42 family doctors, 27 (64.3%) agreed to conduct FIT for the older family members. Approximately 72% of participants in the intervention dyads attended the medical appointment with a family doctor after the intervention. Eighteen partner organisations were willing to continue implementing the intervention at their centres, and 97% of participants in the intervention group were satisfied with the intervention.

Discussion

The family-based intervention was effective in enhancing FIT uptake among South Asians aged 56 to 75 years: the proportion of older family members who returned their stool sample for FIT was 10-fold higher in the intervention group than in the control group. The higher FIT uptake may be attributed to increased knowledge about FIT and its importance, which increased participants' willingness to undergo FIT. Notably, compared with the control group, a greater proportion of the older family members in the intervention group returned the stool sample for FIT by themselves, rather than relying on their younger family members. This difference suggests that the intervention enhanced self-efficacy among older family members in the intervention group. Moreover, the efficacy of the intervention was demonstrated by the greater proportions of younger family members who were willing to encourage their older family members to undergo FIT and were ready to assist with stool sample collection.

Conclusion

A family-based multimedia intervention was effective in enhancing CRC screening uptake among South Asians aged 56 to 75 years in Hong Kong. The intervention was well received by participants; it should be incorporated into health promotion programmes offered at non-governmental organisations that serve South Asians. The government should allocate more training resources to enable these staff members to act as programme instructors for implementation of the intervention.

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TABLE I. Baseline characteristics of participants

Characteristic	Older family members (n=320)		P value	Younger family members (n=256)		P value
	Control (n=160)*	Intervention (n=160)*		Control (n=129)*	Intervention (n=127)*	
Age, y	65.1±6.1	65.0±6.2	0.849	36.4±8.1	35.4±8.7	0.355
Sex						
Male	64 (40.0)	61 (38.1)	0.731	62 (48.1)	36 (28.3)	0.001
Female	96 (60.0)	99 (61.9)		67 (51.9)	91 (71.7)	
Country of origin			0.108			0.131
Pakistan	21 (13.1)	35 (21.9)		17 (13.2)	28 (22.0)	
India	31 (19.4)	25 (15.6)		25 (19.4)	18 (14.2)	
Nepal	108 (67.5)	100 (62.5)		87 (67.4)	81 (63.8)	
No. of household members			0.274			0.175
1-2	22 (13.8)	12 (7.5)		16 (12.4)	7 (5.5)	
3-4	48 (30.0)	58 (36.3)		45 (34.9)	49 (38.6)	
5-6	63 (39.4)	63 (39.4)		46 (35.7)	54 (42.5)	
≥7	27 (16.9)	27 (16.9)		22 (17.1)	17 (13.4)	
Monthly household income, HK\$			0.003			0.020
<10 000	50 (31.3)	36 (22.5)		25 (19.4)	20 (15.7)	
10 000-19 999	35 (21.9)	22 (13.8)		26 (20.2)	23 (18.1)	
20 000-29 999	21 (13.1)	17 (10.6)		35 (27.1)	26 (20.5)	
≥30 000	10 (6.3)	7 (4.4)		15 (11.6)	7 (5.5)	
Don't know	44 (27.5)	78 (48.8)		28 (21.7)	51 (40.2)	
Education level			0.891			0.298
Primary or below	96 (60.0)	93 (58.1)		7 (5.4)	10 (7.9)	
Did not complete secondary	26 (16.3)	28 (17.5)		13 (10.1)	20 (15.7)	
Completed secondary	15 (9.4)	19 (11.9)		46 (35.7)	51 (40.2)	
Matriculation	10 (6.3)	7 (4.4)		31 (24.0)	22 (17.3)	
Tertiary (non-degree) or degree or above	13 (8.1)	13 (8.1)		32 (24.8)	24 (18.9)	
Marital status			0.070			0.097
Single/divorced/widowed	12 (7.5)	22 (13.8)		19 (14.7)	29 (22.8)	
Married	148 (92.5)	138 (86.3)		110 (85.3)	98 (77.2)	
Have a part-time/full-time job			0.150			0.024
No	103 (64.4)	115 (71.9)		46 (35.7)	63 (49.6)	
Yes	57 (35.6)	45 (28.1)		83 (64.3)	64 (50.4)	
Hong Kong permanent resident			0.356			0.748
No	12 (7.5)	8 (5.0)		4 (3.1)	5 (3.9)	
Yes	148 (92.5)	152 (95.0)		125 (96.9)	122 (96.1)	
Family history of cancer			0.110			0.290
No	136 (85.0)	141 (88.1)		110 (85.3)	116 (91.3)	
Yes	16 (10.0)	7 (4.4)		12 (9.3)	6 (4.7)	
Unsure	8 (5.0)	12 (7.5)		7 (5.4)	5 (3.9)	
Have health insurance			0.999			0.999
No	155 (96.9)	155 (96.9)		124 (96.1)	123 (96.9)	
Yes	5 (3.1)	5 (3.1)		5 (3.9)	4 (3.1)	
Acculturation score	1.46±0.75	1.48±0.73	0.811	2.39±0.76	2.28±0.92	0.294
Acculturated (score ≥3)			0.479			0.919
No	144 (90.0)	140 (87.5)		78 (60.5)	76 (59.8)	
Yes	16 (10.0)	20 (12.5)		51 (39.5)	51 (40.2)	
Preference for doctor's spoken language			0.015			0.406
No preference	0	4 (2.5)		1 (0.8)	3 (2.4)	
English only	7 (4.4)	6 (3.8)		7 (5.4)	11 (8.7)	
Mother tongue or familiar language but not English	128 (80.0)	139 (86.8)		89 (69.0)	89 (70.1)	
English or other familiar languages	25 (15.6)	11 (6.9)		32 (24.8)	24 (18.9)	

* Data are presented as mean±standard deviation or No. (%) of participants

TABLE 2. Outcome measures for older and younger family members

Outcome	Control*	Intervention *	P value
Older family members (n=263)	n=146	n=117	
Visited a family doctor for faecal immunohistochemical testing (FIT) within 1 month of intervention	10 (6.8)	84 (71.8)	<0.001
Returned a stool sample 2 months later	n=10	n=82	
Participant himself/herself	0	51 (62.2)	<0.001
Family member	10 (100)	19 (23.2)	
Site coordinator	0	12 (14.6)	
Result of FIT			0.999
Negative	10 (100)	79 (96.3)	
Positive	0	3 (3.7)	
Younger family members			
At baseline (n=256)	n=129	n=127	
Willing to encourage their older family members to undergo FIT	125 (96.9)	120 (94.5)	0.342
Ready to assist older family members with stool sample collection	126 (97.7)	122 (96.1)	0.498
At post-intervention (n=208)	n=117	n=91	
Willing to encourage their older family members to undergo FIT	94 (80.3)	89 (97.8)	<0.001
Ready to assist older family members with stool sample collection	88 (75.2)	87 (95.6)	<0.001

* Data are presented as No. (%) of participants

Disclosure

The results of this research have been previously published in:

1. So WKW, Chan DNS, Law BMH, Choi KC, Krishnasamy M, Chan CWH. A family-based multimedia intervention: a potential strategy to promoting colorectal cancer screening utilisation among South Asian ethnic minorities. Accessed 17 October 2022. Available from: <https://www.isncc.org/Blog/13011110>.
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