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Effect of a family-based multimedia intervention on the uptake of colorectal cancer screening among South Asian older adults in Hong Kong: a cluster-randomised control trial

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Introduction

- Colorectal cancer is the **third most common** cancer worldwide
- In 2020, **Two million** new colorectal cancer cases, over **900,000** deaths
- By 2030, Increase by **60%**
- **Widespread uptake of regular colorectal cancer screening is essential**
 - Faecal immunohistochemical testing (FIT)
- In 2016, the **Hong Kong government introduced a fee-reduced colorectal cancer screening programme**
 - Adults aged **50–75** years, subsidised cost

Sung et al., 2021; Arnold et al., 2017; Navarro et al., 2017; Centre for Health Protection, 2020



非傳染病直擊
二零一六年 九月

衛生防護中心
Department of Health

大腸癌篩查
先導計劃

關於大腸癌及篩查

要點

- ※ 大腸癌在全球及本地都是一個重要的健康問題。在香港，於二零一三年大腸癌個案已超越肺癌，成為最常見的癌症。然而，透過健康生活和妥善安排的篩查，大腸癌是可以預防的。
- ※ 要減輕大腸癌的疾病負擔，可透過適當的篩查，及早發現癌症並於初期加以治療。按香港政府轄下的癌症預防及普查專家工作小組建議，年齡介乎 50 至 75 歲的人士應與醫生商量，並考慮接受大腸癌篩查。高風險人士應提早進行大腸癌篩查。
- ※ 儘管有證據顯示大腸癌篩查可降低大腸癌的發病和死亡風險，但很多目標群組並沒有接受篩查，而對大腸癌缺乏知識和認知是妨礙市民接受大腸癌篩查的一個重要的個人因素。香港成年人士的大腸癌知識水平包括大腸癌徵狀、風險因素，以及預防或減低大腸癌風險的方法並不理想。
- ※ 香港政府於二零一六年九月推出為期三年的大腸癌篩查先導計劃，正邀請於一九四六年至一九五五年出生的合資格香港居民分階段接受篩查。已加入電子健康紀錄互通系統的合資格人士會得到政府資助進行大便免疫化學測試，有需要時再進行大腸鏡檢查。要知道更多有關大腸癌篩查先導計劃的詳情、大腸癌的資料和預防，請瀏覽「預防大腸癌」的專題網站 <http://www.ColonScreen.gov.hk/>。

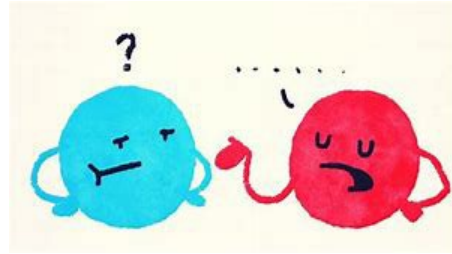
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Introduction

- South Asian ethnic minorities face **multiple barriers** to undergo **colorectal cancer (CRC) screening**.



Lack of
knowledge on
CRC screening



Language
barrier



Limited
accessibility



Cultural
issues

- South Asian older adults are in need of educational interventions on CRC screening, preferably those with the following features:

- **Multimedia**
- **Involvement of younger family members**

Ivey et al., 2018; Kazi et al., 2021; Palmer et al., 2015; So et al., 2019



Objectives

The study aimed to evaluate the acceptability and effectiveness of a family-based multimedia intervention to raise awareness of CRC screening and increase the uptake of FIT among South Asians aged 56-75 in Hong Kong

- To **develop and implement** a family-based, culturally sensitive and linguistically appropriate multimedia intervention dedicated to enhancing the self-efficacy and motivation of older South Asian adults in Hong Kong to undergo FIT.
- To evaluate whether this intervention is **effective** in encouraging the uptake of CRC screening and FIT through the five dimensions in the **Reach, Effectiveness, Adoption, Implementation, Maintenance** (RE-AIM) framework.
- To assess whether this intervention is **acceptable** to South Asian families in Hong Kong.



Methods

■ Study design

Cluster randomised controlled trial design with a wait-list control group

■ Participants

➤ Inclusion criteria of the older South Asian adults:

- 1) having a South Asian origin (either Indian, Pakistani or Nepali)
- 2) aged between 56 and 75
- 3) having a younger family member or relative aged between 18 and 55, and
- 4) residing in Hong Kong during subject recruitment

➤ Exclusion criteria :

- 1) Those participated in our previous community-based project titled ‘A community health worker-led multi-media intervention to increase cervical cancer screening uptake among South Asian women: A randomized controlled trial’



■ Study settings

South Asian community centres, ethnic minority associations and non-governmental organisations



Methods

■ Sample size

- 5% level of significance
- power of 80%
- attrition rate of 20%
- A total of 320 dyads, with 160 dyads in each group

■ Subject recruitment

- Partner organisations: posters and social media posts
- Persons-in-charge: contact their members

■ Randomization

- Cluster randomisation approach
- Three districts allocated to each group respectively

	Study Period					
	Enrollment	Allocation	Post-allocation			
			T0	T1	T2	T3
Enrollment:						
Eligibility screen	X					
Informed consent	X					
Randomization		X				
Intervention:						
Family-based multimedia intervention				↔		
Assessments:						
Demographic data			X			
Recruitment and retention rates						X
Proportion of dyads with younger family members willing to encourage their older family members to undergo FOBT			X	X		
Proportion of dyads with younger family members ready to assist stool collection for FOBT			X	X		
Proportion of dyads with older family members having consulted a family doctor for FOBT					X	
Proportion of dyads with older family members having completed FOBT						X
Satisfaction level to intervention				X		
Proportion of partner organizations which agree to promote and implement the intervention			X			
Proportion of family doctors willing to be engaged in the intervention			X			
Number of interventions delivered				X		
Number of visits to family doctors arranged					X	
Level of willingness of partner organizations to continue implementing the intervention after project completion						X

Fig. 1 The SPIRIT Figure



Methods

■ Intervention

- Health Belief Model (HBM)
- Multimedia education on CRC screening
 - A health talk with the aid of a PowerPoint presentation
 - Video clip
 - Health information booklet
- Demonstration of procedures in stool sample collection for FOBT
- Navigational assistance
- Site coordinators accompanying the participants to attend FIT appointments

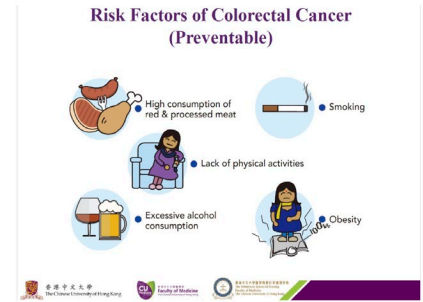
- Control
- Received the intervention after data were collected at post-intervention



2.2. Video production



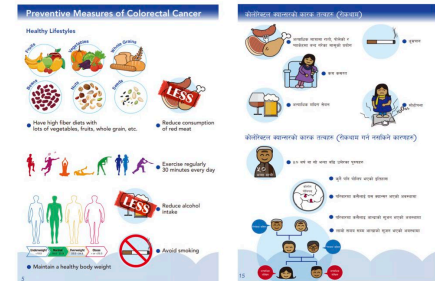
English subtitles were added to the final version of the video clip.



Copies of health information booklets distributed during the intervention



Contents of the booklets (available in English and South Asian languages)



Methods

■ Outcome measures

The Reach-Effectiveness-Adoption-Implementation-Maintenance (RE-AIM) framework

➤ Reach

- Recruitment rate
- Retention rate

➤ Effectiveness

- Uptake of FIT
- Younger families' willingness to encourage their older family members to undergo FIT through family doctors
- Younger families' readiness to assist older adults in stool sample collection for FIT
- Dyads' level of satisfaction of the intervention



➤ Adoption

- Extent of partnerships formed for intervention implementation

➤ Implementation

- Extent of the delivery of intervention sessions

➤ Maintenance

- Prospect of the intervention being implemented in the long term

Results

The **Reach**-Effectiveness-Adoption-Implementation-Maintenance (RE-AIM) framework

Recruitment rate

99%

Retention rate

Intervention: 73%
Control: 91%

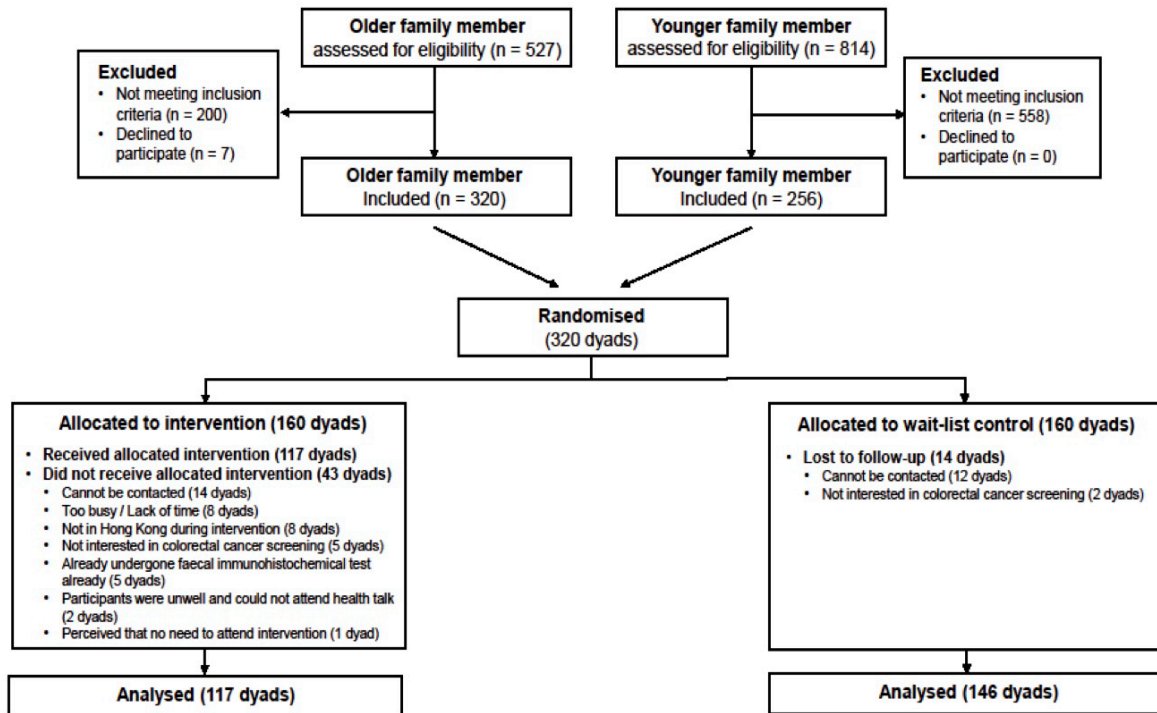


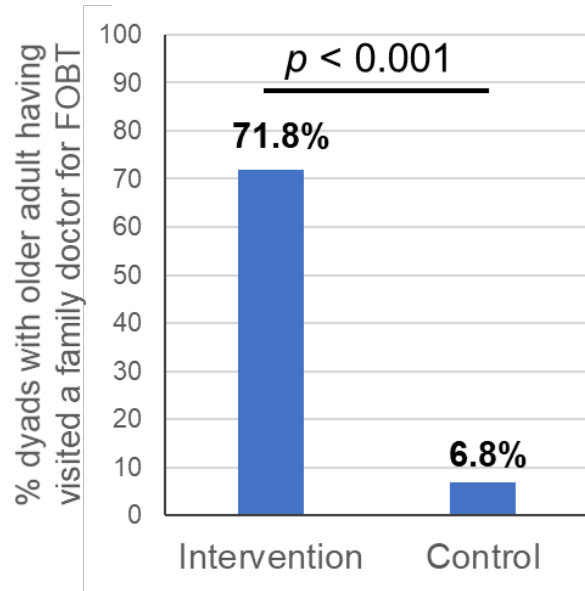
Figure 1: The CONSORT diagram



Results

The Reach-**Effectiveness**-Adoption-Implementation-Maintenance (RE-AIM) framework

Utilisation rate of FIT



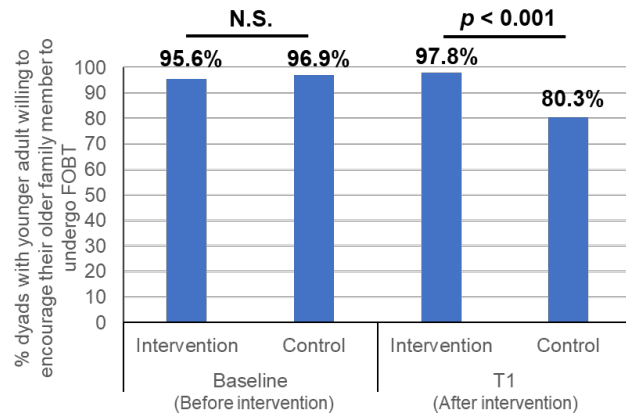
A **significantly higher proportion** of adults aged 56-75 in the intervention group than in the control group underwent an FIT



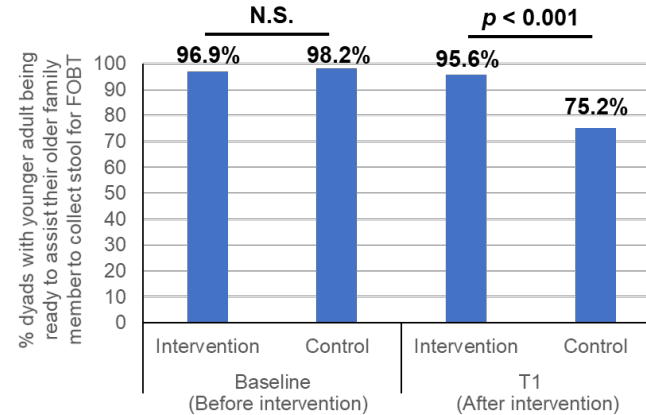
Results

The Reach-**Effectiveness**-Adoption-Implementation-Maintenance (RE-AIM) framework

Willingness to encourage older family members to undergo FIT



Readiness to assist older family members to collect stool sample for FIT



The proportion of **intervention participants** expressing such willingness and readiness **remained high** after the intervention, but a **decline** in such proportion was observed among **control participants**.

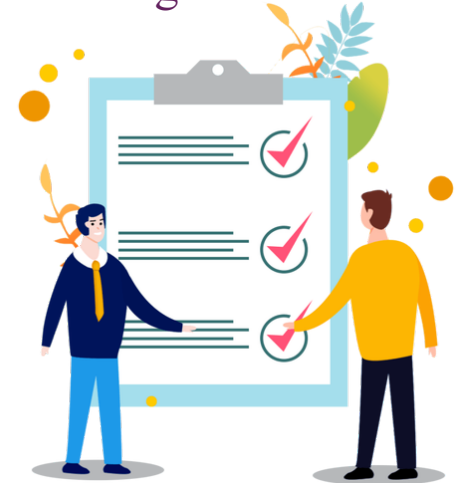


Results

The Reach-**Effectiveness**-Adoption-Implementation-Maintenance (RE-AIM) framework

Participants' satisfaction to the intervention

- ✓ > 86% of intervention participants agreed that the intervention:
- ✓ Enhanced their knowledge on CRC screening and how to access screening services
- ✓ Enhanced their awareness on why CRC screening is needed
- ✓ Is interesting, comprehensible and culturally sensitive



Results

The Reach-Effectiveness-**Adoption**-Implementation-Maintenance (RE-AIM) framework

Extent of partnerships formed for intervention implementation

- ✓ **25 out of 29 (86%) NGOs and ethnic minority associations** agreed to collaborate with us (e.g. promotion, provide venue).
- ✓ **27 out of 42 family doctors (64%)** agreed to provide FIT services for study participants.



Results

The Reach-Effectiveness-Adoption-**Implementation**-Maintenance (RE-AIM) framework

Extent of the delivery of intervention sessions

- ✓ **35 multimedia health talks** were delivered to intervention participants.
- ✓ **49 visits to the family doctors** were made for the medical appointment for FIT



Results

The Reach-Effectiveness-Adoption-Implementation-**Maintenance** (RE-AIM) framework

Prospect of the intervention being implemented in the long term

- ✓ **18 organisations responded**
- ✓ **15** organizations either agreed or strongly agreed that they would continue to organise the intervention at their centres in future
- ✓ One depends on availability of resources
- ✓ Two would be closed down due to lack of public funding



Conclusions and implications

- Implementation of a family-based multimedia intervention among South Asian community is feasible, through collaboration with NGOs and ethnic minority associations.
- The intervention was well accepted by the participants.
- The intervention was effective in enhancing FIT uptake among South Asians.
- The intervention should be integrated into the primary health care programme offered at District Health Centres.
- Allocation of more resources for training instructors and site coordinators for intervention delivery.



Related publications

- So, W. K. W.*, Chan, D. N. S., Law, B. M. H., Chow, K. C., Krishnasamy, M., Chan, C. W. H. (Sept 2022) Effect of a family-based multimedia intervention on the uptake of faecal immunohistochemical test among South Asian older adults: A cluster-randomised controlled trial. *International Journal of Nursing Studies*, 132, 104254 <https://doi.org/10.1016/j.ijnurstu.2022.104254>
- So, W. K. W.*, Law, B. M. H., Choi, K. C., Chan, D. N. S., Chan, C. Y. H. (2019). A family-based multimedia intervention to enhance the uptake of colorectal cancer screening among older South Asian adults in Hong Kong: A study protocol for a cluster randomized controlled trial. *BMC Public Health*, 19:652. <https://doi.org/10.1186/s12889-019-6995-7>

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So et al. *BMC Public Health* (2019) 19:652
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STUDY PROTOCOL

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A family-based multimedia intervention to enhance the uptake of colorectal cancer screening among older South Asian adults in Hong Kong: a study protocol for a cluster randomized controlled trial



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Related publications

- So, W.K.W., Chan, D.N.S., Choi, K.C., Chan, C.W.H. (Jan 2023). Implementation of a family-based multimedia educational programme to promote the utilization of colorectal cancer screening by older south Asian ethnic minorities in Hong Kong. Policy Research@HKIAPS e-Newsletter, Issue 8. https://www.cuhk.edu.hk/hkiaps/policy_research/enewsletter/8/research.html#health_1
- So, W.K.W., Chan, D.N.S., Law, B.M.H., Choi, K.C., Krishnasamy, M., Chan, C.W.H. (17 Oct 2022). A family-based multimedia educational programme: A potential strategy to promoting colorectal cancer screening utilization among South Asian ethnic ISNCC Blog, International Cancer Nursing News. Retrieved from. <https://www.isncc.org/Blog/13011110>
- So, W. K. W., Chan, D. N. S., Law, B. M. H., Choi, K. C., Krishnasamy, M., Chan, C. W. H. Effects of a family-based multimedia Intervention on colorectal cancer screening uptake among south Asian ethnic minorities: a cluster-randomized controlled trial. International Conference on Cancer Care 2022 Virtual Conference. 23-25 February 2022. International Society of Nurses in Cancer Care. (Oral presentation)
- So, W.K.W., Law, B.M.H., Chan, D.N.S., Choi, K.C., Chan, C.W.H. (May 2021). A family-based intervention to enhance fecal occult blood test uptake among South Asians in Hong Kong: A study protocol. Poster presentation at the 7th Pan Pacific Nursing Conference, 28-29 May 2021, Hong Kong SAR (Poster)
- Winnie So, Bernard Law, Dorothy Chan (2021, 19 Sept). Colorectal cancer screening can be promoted among South Asians in Hong Kong with a family-based approach. South China Morning Post https://www.scmp.com/comment/letters/article/3149118/colorectal-cancer-screening-can-be-promoted-among-south-asians-hong?module=perpetual_scroll_0&pgtype=article&campaign=3149118

Hong Kong healthcare and hospitals

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Opinion / Letters

Letters | Colorectal cancer screening can be promoted among South Asians in Hong Kong with a family-based approach

- Research shows people of South Asian descent in Hong Kong tend not to undergo this screening due to lack of information. A multimedia programme involving older adults and their younger family members has had encouraging results

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Related publications

Total number of document(s): 1

Hong Kong Economic Journal | 2021-11-12
Newspaper | C02 | 健康生活 | 循證護理 | 蘇毓慧教授、陳微禎助理教授、羅文軒博士、陳葉詠嫻教授

南亞裔防癌關鍵在教育

現時，大腸癌是香港最常見的癌症。要遏止升勢，必須採取預防措施！南亞裔一直以來都是備受忽略的一群，究竟如何提升他們的防癌意識？

要有效預防大腸癌，定期進行大腸癌篩查是不可少的。香港中文大學那打素護理學院最近進行的一項研究發現，香港的南亞裔人士對大腸癌篩查所知甚少，也不清楚在何處檢查，篩查率甚低。他們實在需要一些計劃，去教育他們透過篩查預防大腸癌。

研究團隊最近進行了一項調查，在南亞裔社區推行了一項家庭為本的大腸癌篩查多媒體計劃。

計劃從南亞裔較年長成年人及其年輕家人著手，強調家人能有效鼓勵較年長成年人進行篩查，並教育他們定期篩查的重要性，也推動年輕家人從旁支持。計劃包含一個多媒體講座，場地協調員則陪同參加者會見家庭醫生，為篩查進行評估。

我們比較了有參與和沒有參與教育計劃的人進行大腸癌篩查的比率，藉此評估計劃在推動大腸癌篩查方面的有效性。我們發現參與者進行篩查的比率是沒有參與者的10倍以上，而且不少參與者更能自行提交糞便樣本以作篩查，而沒有參與者則大多依賴其年輕家人代勞。

大部分參與者（超過86%）均滿意此計劃，認為內容有趣、全面和有助增進預防大腸癌的知識。由此可見，此類教育計劃的確可鼓勵較年長的成年人進行篩查。如能在本港的南亞裔社區廣泛實行就更理想。

本地非政府組織可定期推行大腸癌篩查教育計劃；政府亦可考慮分派資源予這些機構推行，令廣大南亞裔人士受益；長遠來說，也可減輕大腸癌帶來的公共醫療負擔。

作者分別為香港中文大學醫學院那打素護理學院教授、香港中文大學醫學院那打素護理學院助理教授、香港中文大學醫學院那打素護理學院副研究員、香港中文大學醫學院那打素護理學院教授

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#健康生活 #循證護理 - 南亞裔防癌關鍵在教育



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南亞裔防癌關鍵在教育

蘇毓慧教授、陳微禎助理教授、羅文軒博士、陳葉詠嫻教授 | 2021-11-12



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References

- Arnold, M., Sierra, M.S., Laversanne, M., Soerjomataram, I., Jemal, A., Bray, F., 2017. Global patterns and trends in colorectal cancer incidence and mortality. *Gut*. 66 (4), 683–691. <https://doi.org/10.1136/gutjnl-2015-310912>.
- Centre for Health Protection, The Hong Kong Department of Health, 2020. Colorectal cancer screening programme. Available from: https://www.colonscreen.gov.hk/en/public/programme/background_of_programme.html. (Accessed 6 January 2022).
- Ivey, S.L., Mukherjea, A., Patel, A., Kapoor, N., Rau, S., Kazi, E., Bhatia, J., Somsouk, M., Tseng, W., 2018. Colorectal Cancer Screening Among South Asians: Focus Group Findings on Attitudes, Knowledge, Barriers and Facilitators. *J Health Care Poor Underserved*. 29(4), 1416-1437. <https://doi.org/10.1353/hpu.2018.0104>.
- Kazi, E., Sareshwala, S., Ansari, Z., Sahota, D., Katyal, T., Tseng, W., Ivey, S.L., 2021. Promoting Colorectal Cancer Screening in South Asian Muslims Living in the USA. *J Cancer Educ*. 36(4), 865-873. <https://doi.org/10.1007/s13187-020-01715-3>.
- Navarro, M., Nicolas, A., Ferrandez, A., Lanasa, A., 2017. Colorectal cancer population screening programs worldwide in 2016: an update. *World J. Gastroenterol*. 23 (20), 3632–3642. <https://doi.org/10.3748/wjg.v23.i20.3632>.
- Palmer, C.K., Thomas, M.C., McGregor, L.M., von Wagner, C., Raine, R., 2015. Understanding low colorectal cancer screening uptake in South Asian faith communities in England—a qualitative study. *BMC Public Health*. 15, 998. <https://doi.org/10.1186/s12889-015-2334-9>.
- Sung, H., Ferlay, J., Siegel, R.L., Laversanne, M., Soerjomataram, I., Jemal, A., Bray, F., 2021. Global Cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J. Clin*. 71 (3), 209–249. <https://doi.org/10.3322/caac.21660>.
- So, W.K.W., Law, B.M.H., Choi, K.C., Chan, D.N.S., Chan, C.W.H., 2019. A Mixed-Method Study Examining Cancer Screening Uptake among South Asian Ethnic Minorities in Hong Kong. *Asia Pac J Oncol Nurs*. 7(1), 12-17. https://doi.org/10.4103/apjon.apjon_36_19.



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