Using Design Thinking Model to Increase the Cases of Colon Cancer Screening and Positive Follow Up of Elderly People in a Taiwan Local Clinic

Lin Ching-Yu[1,3], Lin Chun-Ping[2], Tsai Chien-Tsung[3], Su Jing-Chun[4]

1. Institute of Health Policy and Management, National Taiwan University

2. Cancer Center, Dachien General Hospital, Miaoli, Taiwan

3. Department of Rehabilitation, Dachien General Hospital, Miaoli, Taiwan

4. Department of Community Medicine, Dachien General Hospital, Miaoli, Taiwan

Background/Problem/Objective

Colon cancer could be early diagnosed by stool occult blood (stool OB) test. In Taiwan, the test is sponsored by the National health insurance (NHI). However, some people with positive findings refuse to have the colonoscopy confirmation, especially in elderly people. Therefore, we use design thinking model to investigate the interferences of the colon cancer prevention and provide interventions to improve the results.

Methods/Intervention

We interviewed the people had stool OB test and with positive findings in 2016 to 2018 in Gongguan Township, Miaoli County, Taiwan. Time wasting of identity inquires, and discomfort of colonoscopy follow up were the major interferences after the phone interviews with the positive cases. Accordingly, we connected to the data base of NHI to simplify the inquires of client's identity of stool OB test. If the patient visits our clinic and matched the criteria, who will have a list of available cancer screening items on the receipt. The list would help the doctor and staffs to encourage the patient to have the cancer screening, and the list could be cancelled after the one finished the tests. For the people with positive findings, we provided anesthesia colonoscopy to encourage them to have diagnosis confirmation in 2019. The data of 2018 to 2020 were analyzed to compare the results before and after interventions.

Results

In the total amount of stool OB test, there were 96 cases in 2018, and significantly increased to 180 cases in 2019, 211 cases in 2020. In elderly (over 65-year-old), there were 33 cases in 2018, 65 cases in 2019, and 87 cases in 2020.

Amount of stool OB test			
Year	Total	Age>65	Age>65 (%)
2018	96	33	34.4%
2019	180	65	36.1%
2020	211	87	41.2%

In the rate of positive follow up, there were 11 positive cases in 2018, and only 4 cases finished the colonoscopy. In 2019 and 2020, there were 15 and 10 positive cases, 8 and 6 cases finished the colonoscopy. In elderly, the follow up rate is 16.7% in 2018 and the follow up rate had a three-time growth in 2019 and 2020 (from 16.7% to 50%).

Positive follow up			
Year	Positive N.	Follow up N.	Follow up R.
2018	11	4	36.3%
2019	15	8	53.3%
2020	10	6	60%
Positive follow up in age over 65			
Year	Positive N.	Follow up N.	Follow up R.
2018	6	1	16.7%
2019	6	3	50%
2020	4	2	50%

Conclusions

The improvement of total amount of stool OB test and positive follow up were significantly changed after interventions of design thinking model. In elderly, the improvement was more significant.

Relevance to health promoting hospitals and health services

These results suggested that the NHI and the hospitals should consider the redistribution of health resources in colon cancer prevention and reconsider the needs of elderly to insure the effectiveness in cancer prevention.

Keywords

Stool occult blood, Colonoscopy, Colon Cancer, Aging friendly, Design thinking, Cancer prevention