Elderly's Performance and Attitude Regarding Colorectal Cancer screening in Zagazig City

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Abstract

Background: Colorectal cancer (CRC) is the second most common cancer in women and the third common cancer in men worldwide. It is common in the elderly and age is an important risk factor. **Aim of study:** Assess elderly's performance and attitude regarding colorectal cancer screening in zagazig city. **Subjects and method: Research design**: A descriptive design was utilized to conduct the present study. **Setting:** This study was carried out at geriatric club in zagazig city. **Subjects:** purposive sample composed of one hundred and nine of elderly were selected from geriatric club. **Tools of data collection:** One tool was used consisted of three parts; part **I**: Demographic characteristics, Part **II**: General medical history of the elderly. Part **III**: Elderly's performance and attitude regarding colorectal cancer screening. **Results**: The present study showed that 98% of the studied elderly had poor performance regarding CRC screening and 71.6% of them had positive attitude toward CRC screening. **Conclusion:** the current study concluded that most of the studied elderly had poor performance regarding CRC screening, more than three quarters of them had positive attitude toward CRC screening. **Recommendations:** The current study recommended that the studied elderly should be provided with further health care campaigns to make it is easy to perform CRC screening tests and helping changing their thoughts toward them.

Key words: Elderly - Performance - Attitude - Colorectal cancer- Screening – Zagazig city

Introduction

Colorectal cancer (CRC) is the second most common cancer in women and the third common cancer in men worldwide; 1.4 million new cases occurred in 2012. This figure is anticipated to increase by 60% to 2.2 million new cases by 2030. It is one of the most common human malignancies. It is a significant public health problem in high-income countries (HICs) and is becoming an increasing disease burden in low- and middle-income countries (LMICs). Despite progress in screening in HICs and early removal of precursor neoplastic polyps in parallel with advances in surgical and oncologic treatments, a significant proportion of patients will experience tumor relapse and ultimately die from their disease [1].

In 2018, According to World Health organization (WHO), Global Cancer (GLOBOCAN) database, the estimated number of new cases of CRC in old adults above 60 years old world wide is one million and 341,267 and mortality rate is 699,339 with prevalence rate in 5-year time period is three millions and 561385.**In Egypt**; The estimated number of new cases of CRC in old adults above 60 years old is 2373. The estimated number of deaths is 1582 with prevalence rate in 5-year time period is 5373 [2].

Colorectal cancer (CRC) is a cancer that starts in the colon or the rectum. These cancers can also be named colon cancer or rectal cancer, depending on where they start. Colon cancer and rectal cancer are often grouped together because they have many features in common [3]. CRC is common in the elderly; age is an important risk factor. Approximately 90% of new CRC is diagnosed in patients over 50 years with the median age of diagnosis being 69 years. Furthermore, the incidence of CRC dramatically rises as one ages [2].

The United States Preventive Services Task Force (USPSTF) reviewed the evidence on the effectiveness of screening with colonoscopy, flexible sigmoidoscopy, computed tomography colonography, the guaiac-based fecal occult blood test, the fecal immunochemical test, the multi targeted stool DNA test in reducing the incidence of

and mortality from colorectal cancer or all-cause mortality [4].

Using screening for CRC can also help in early detection and removal of premalignant adenomatous polyps. According to the American Cancer Society, if CRC is diagnosed at an early stage, the survival rate can be more than 90% [5]. Geronotological nurse educate the public about the state of the art in cancer screening. Provide care throughout the cancer prevention and screening continuum. Perform research into improved methods and outcomes of cancer screening. Counsel patients and other health care providers about the benefits and risks associated with cancer screening. Adapt to rapid changes in health care delivery and health care technology. Maintain competence through professional continuing education activities. Support patient access to clinical trials [6].

Geronotological nurse provide health education for older adults to increase their knowledge of factors that could be related to colorectal cancer. Changing life styles such as smoking cessation, eating a well-balanced diet, performing physical activities and screening are recommended.

Geronotological nurse should increase knowledge of the elderly about the importance of performing the screening. [7]

Significance of study

CRC has traditionally been more prevalent among developed countries, contributing to around 60% of global CRC cases. Risk of colorectal cancer goes up as person age. Younger adults can get it, but it's much more common after age 50. There are Limitations of the studies on colorectal cancer's performance and attitude in Egypt. Previous researches suggested that the level of performance and attitude toward CRC screening was poor both in developed and developing countries. The negative attitude is a significant CRC risk factor and is a potential barrier towards effective screening. Hence, this study is the first to assess performance and attitude toward CRC screening in zagazig city.

Aim of the study:

The aim of the study was:

To assess the elderly's performance and attitude regarding colorectal cancer screening in zagazig city.

Research Questions:

- What is the level of performance among elderly regarding CRC screening?
- What is the elderly's attitude toward CRC screening?

Operational definition of performance:

It is the application of rules and knowledge regarding CRC and its screening tests that leads to execution of these tests.

Subjects and Method

Research design:

A descriptive design was utilized to conduct the present study.

Study setting:

The study was conducted at the Geriatric social club in Zagazig city.

Study subjects:

A purposive sample composed of 109 elderly from the Geriatric social club in Zagazig city **who fulfilled the following criteria:**

1. Able to communicate.
2. Agree to participate in the study.

Exclusion criteria:

A known history of major psychiatric illness or severe physical disorders. (Reported by elderly).

Tools of data collection:

One tool was used to collect the required data

Tool: A structured interview questionnaire: It was developed by the researcher to collect the necessary data for the study. It was consisted of three parts:

Part 1: Demographic characteristics of the elderly; it included age, gender, residence, marital status, educational level and income.

Part 2: Medical history of the elderly patients; it included history of chronic diseases in family, personal history of colorectal diseases and family history of colorectal cancer.

Part 3: Elderly's performance and attitude regarding CRC screening: This questionnaire was adopted from **(Al Abdouli)** [5] to assess elderly's performance and attitude regarding CRC screening . It includes:

1- Elderly's actual performance regarding colorectal cancer screening:

It included five questions about elderly's previous performance of any CRC screening tests, time of last CRC screening test, reason for previous performance of CRC screening test, its type and barriers of performance of CRC screening tests

2- Elderly's attitudes regarding colorectal cancer screening:

It was used to assess elderly's attitude regarding colorectal cancer screening. It included four questions about elderly's believes of prevention of CRC, Treatment of CRC if early detected, possibility of performance of CRC screening tests in future and which screening test elderly would prefer.

Scoring system of CRC screening performance

For Items with performance were scored 1, and the not performance scored zero. The total score was 5, and performance was considered good if the percent score was 60% ($\geq$ 3) or more, and low if less than 60% (< 3).

Scoring system of CRC screening attitude

The responses "yes", and "no" were respectively scored 1 and zero. The scoring was reversed for negative statements. The total score was 4, and the attitude was considered positive if the percent score was 60% ($\geq$ 2.4) or more and negative if less than 60% (< 2.4).

Validity & Reliability:

The tools were revised by three experts in the field of medical surgical nursing at the faculty of nursing in Zagazig University, where the panel reviewed the tools content for relevance, clarity, comprehensiveness and understandability. All recommended modifications were done. The reliability of tools was tested by measuring their internal consistency. It demonstrated a good level of reliability with Cronbach's Alpha. It was 0.62 for actual elderly's performance regarding CRC screening and 0.64 for elderly's attitudes toward CRC Screening

Fieldwork:

Once the permission was granted to progress in the study, the researcher started to organize a schedule for collecting the data. The researcher visited study setting to be familiar with work process, time of work and observe elderly attending the study settings to a set schedule for data collection. The researcher used to go to the study setting for interviewing the elderly who fulfill the criteria and introduced herself to the patient. The purpose of the study was explained to each elderly individually, and then the elderly was asked to participate in the study. The study tool questions were answered by each patient privately. The time needed to answer the interview questionnaire ranged from 15 to 25 minutes. The fieldwork was executed over 13 months (the period extended from the beginning of March 2020 up to the end of March 2021); two days per week (Sunday and Wednesday) from 9.00 AM to 12.00 PM.

Pilot study:

A pilot study was carried out on a sample of 10 elderly adults (10% of the calculated sample). The purposes of the pilot study were to test applicability, feasibility, applicability of the study tool and to determine the time needed to fill out the questionnaire sheet. All participants received a clear clarification for the study purpose. Since there was no modification in the data collection tools after conducting the pilot study, the pilot elderly adults weren't included later in the main studied sample.

Administrative Design & Ethical Considerations:

The administrative design implemented through submission of a formal letter containing aim of the study from Post-graduate department at Faculty of Nursing Zagazig University to the director geriatric club in zagazig city. Firstly, the study proposal was approved by the Research Ethics Committee (REC) and Postgraduate Committee of the Faculty of Nursing at Zagazig University. Then, the elderly received a verbal description of the objectives of the study, and non-participation or withdrawal rights at any time without giving any explanations. The elderly were informed

that their involvement in this study was voluntary. They were also assured that any information taken from them would be confidential and used only for research purposes.

STATISTICAL Analysis:

Data entry and statistical analysis were done using SPSS 22.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations and medians for quantitative variables. The Cronbach alpha coefficient was calculated to assess the reliability of the developed tools through their internal consistency. Qualitative categorical variables were compared using a chi-square test (X^2). The Spearman rank correlation was used for assessment of the interrelationships among quantitative variables and ranked ones. In order to identify the independent predictors of the knowledge, performance, and attitude regarding CRC and its screening scores multiple linear regression analysis was used after testing for normality, and homoscedasticity, and analysis of variance for the full regression models were done. Statistical significance was considered at p-value<0.05.

Results

Table (1) reveals that the studied elderly's age ranged between 60 and 86 years, with mean age 65.60 ± 4.63, with more men (53.2%). In addition, 73.2%, 65.1% and 50.5% of the studied elderly were living in urban area, married and highly educated respectively. The studied elderly and had sufficient income (60.6%). As for history of chronic diseases among family members, 62.4 % of the studied elderly had history of chronic diseases in their family and 43.1% of them were suffering from colorectal diseases. Additionally, 62.4% of the studied elderly hadn't family history of colorectal cancer.

Figure (1) shows that 98% of the studied elderly had poor performance of CRC screening while only 2% had good performance of CRC screening.

Figure (2) shows that 71.6% of the studied elderly had a positive attitude toward CRC screening and only 28.4% of them had a negative attitude toward CRC screening.

Regarding correlation matrix of performance, and attitude scores regarding CRC screening and their personal characteristics table (2) revealed that there is statistically significant positive correlation between elderly's performance and family history of CRC. As regard for elderly's Attitude toward CRC screening score, this score had statistically significant positive correlation with educational level (high level).

Regarding best fitting multiple linear regression models for elderly's performance of CRC screening score table (3) revealed that family history of colon cancer is the only statistically significant independent positive predictor of elderly's performance of CRC screening score.

Regarding best fitting multiple linear regression models for elderly's attitude toward CRC screening table (4) revealed that occupation before pension is the only statistically significant independent positive predictor of elderly's attitude toward CRC screening score.

Discussion.

Worldwide, an estimated 1.2 million new cases of colorectal cancer are diagnosed each year ،and about 600,000 patients die from it. Colorectal cancer is more common in the elderly, with a median age of approximately 73 years **Chu** [9]**.** In Egypt CRC is the seventh commonest cancer, representing 3.47% of male cancers and 3% of female cancers. **Mohamed et al** [2]. Hence, the current study was to assess awareness of elderly regarding colorectal cancer in zagazig city.

Regarding to demographic characteristics of studied elderly, the present study revealed that slightly less than three quarters of the studied elderly were living in urban areas, slightly less than two thirds were married and half of them were highly educated. These findings might be due to presence of geriatric social club in zagazig city.

These findings are similar to a study done in Oman by **Al-Azri et al** [10] who indicated that slightly less than two thirds

of participants were married and about half of them were highly educated. Also, a study done in Al-Dammam, Saudi –Arabia by **Alnuwaysir et al.,** [11] who found that about two thirds of participants were married and more than half of them were highly educated.

Similarly, these findings are similar to a study done in Palestine by **Qumseya et al.,** [12] who reported that more than half of participants lived in urban centers, nearly half of them are high educated and more than three quarters are married. Additionally, a study done in Korea by **Lee ,** [13] who mentioned that more than two thirds of participants were married.

On the other hand, these findings aren't in harmony with a study done in Turkey by **Baran et al.,** [8] who clarified that more than half of participants went to elementary school. Also, a study done in Jordan by **Abuadas et al.,** [14] who found that half of participants had secondary education.

Regarding to performance of colorectal screening tests, the present study showed that approximately all of the studied elderly had poor performance of CRC screening. This may be due to lack of knowledge about CRC, CRC screening, aging and difficult mobility to health service centers, the belief of having no health problem made the participants feel safe and not at risk of getting cancer and that was the major reason for not doing routine health check-up and also, the elderly may believe that with God's protection they will not get the disease.

These findings are supported by study done in UAE by **Al-Abdouli et al.,** [5] who mentioned that the low rate of participants had CRC screening. Also, these findings are in the same line with the study done in Turkey by **Ilgaz et al** [15] who reported that rate of participation in CRC screenings in this study was low.

Additionally, these findings are matched with study done in China by **Wang et al.,** [16] who reported that participants' actual practice rate of having taken part in a CRC screening was significantly low.

On the contrary, these findings don't match with the study done in South Carolina (USA) by **Brandt et al.,** [17] who indicated that CRC screening participation among respondents was high.

Regarding correlation between elderly' performance of CRC screening and their medical and colorectal history, the present study revealed that elderly performance of CRC score had statistically significant positive correlation with family history of CRC. Additionally, multivariate analysis revealed that family history of colon cancer was the only statistically significant independent positive predictor of elderly's performance of CRC screening score.

These findings are consistent with a study done in Turkey by **Ilgaz et al.,** [15] who reported that the presence of CRC in family, friends, or colleagues increased participation in CRC screenings by 10.03 times. These findings are in the same line with a study done in Saudi Arabia by **Alotaibi et al.,** [18] who clarified that positive family history of colorectal cancer as a motivational factor to undergo cancer screening tests.

Additionally, these findings are consistent with a study done in Malaysia by **Suan et al** [19] who clarified that positive family history of colorectal cancer is a motivational factor to undergo cancer screening test.

On the other hand, a study done in Jordan by **Taha et al.,** [20] who found that there was disappointingly no significant association between CRC early detection practices and having a family history of CRC or knowing someone with CRC.

Regarding attitude of elderly toward CRC screening, the present study revealed that about three quarters of the studied elderly had positive attitude toward CRC screening and only more than one quarter of them had negative attitude toward CRC screening. It can be due to that about two thirds of the studied elderly believed that CRC could be prevented, majority of them believed that CRC could be treated if detected early and about two thirds of them had the intention to be screened for CRC in the future. As for preference of which method of CRC screening, less than half of the studied elderly will prefer abdominal ultrasound followed by colonoscopy. This may be resulting from that slightly less

than three quarters of the studied elderly were living in urban areas and half of them were highly educated which make them believed that prevention is better than treatment and the thought that bad social stigma of cancer and its consequences whether on health, family and financial resources in general make them afraid of it. Slightly less than half of studied elderly prefer pelvi-abdominal ultrasound because it is not painful and doesn't require previous preparation before doing it.

These results are similar to a study done in Saudi Arabia by **Alotaibi et al.,** [18] who reported that a large percentage of the studied population was willing to take the screening test even without any apparent symptoms. Also, a study done in Egypt by **Mohamed et al.,** [2] who reported that noted that nearly two-thirds of the elderly reported intending to participate in CRC screening.

Additionally, these findings are in the same line with a study done in Korea by **Lee,** [13] who indicated that Koreans preferred primary prevention through healthy lifestyle to avoid CRC causes and did not make much use of secondary prevention through CRC screening. Also, these findings are matched with study done in China by **Wang et al** [16] who reported only half of the residents would be willing to participate in the free CRC screening provided by the local government.

Similarly, a study done in Al-Dammam, Saudi Arabia by **Alnuwaysir et al.,** [11] who found that majority of respondents believed that it is possible to prevent CRC if detected in early stage. Also, these are similar to the study done in Malaysia by **Suan et al.,** [19] who indicated that majority of studied population were also willing to participate in future cancer screening programs even though asymptomatic.

On the other hand, a study was done in Lebanon by **Tfaily et al.,** [21] who indicated that out of the participants who were unwilling to get screened, slightly more than half of participants reported that they would not get screened because there was no one in the family with CRC, indicating a lack of awareness that CRC most often occurs in individuals with negative family history; results also indicated that more than one quarter of the participants were unwilling to get screened because they believed that there was no escape from God's will; A reason that points to a sense of fatalism or futility related to the detection of colorectal cancer.

Also, a study done in Asia (China, Korea and Vietnam) by **Le et al.,** [22] who clarified that study's Vietnamese subgroup was significantly less aware of CRC screening modalities, less likely to report that screening was a good method for early cancer detection, and less likely to express intention to undergo CRC screening.

This might due to belief inclination and the belief that disease and recovery are from god and there is no force in world can affect person's fate. **As regard to correlation between elderly' attitude toward CRC and their demographic characteristics,** the present study showed that elderly's attitude toward CRC screening score had statistically significant positive correlation with educational level (high level). Additionally, in multivariate analysis showed that occupation before pension was the only statistically significant independent positive predictor of elderly's attitude toward CRC screening.

This may be due to that high education is accompanied with a good awareness about these screening tests and elderly who were employee may have previous experiences with these screening tests and have health insurance services which make them less stressful about cost of these screening tests.

These findings are in the same line with a study done in Guangzhou, China by **Wang et al.,** [16] who reported that more positive attitude was associated with higher educational levels and higher knowledge scores. Additionally, these findings are in harmony with a study done in Al-Ahsa, Saudi Arabia by **Al-Thafar et al.,** [23] who reported that participants have significantly better attitude for screening than those with a Bachelor or a Diploma.

Also, these findings are consistent with studies done in Palestine by

Qumseya et al., [24] and in Australia by **Christou et al.,** [25] who confirmed that a higher educational level was associated with increased acceptance of CRC screening.

Conclusion

On the light of the current study results and answers of the research questions, it could be concluded that the majority of the studied elderly were from urban areas, married, employees before retirement and more than half of them were highly educated. Additionally, about all of the studied elderly had poor performance of CRC screening and more than three quarters of them had positive attitude toward CRC screening. There was positive correlation between performance of CRC screening and family history of CRC. There were positive correlations between attitude toward CRC screening and educational level.

Recommendations

On the basis of the current study findings, the following recommendations are suggested: The studied elderly should be provided with further health care campaigns to make it is easy to perform CRC screening tests and helping changing their thoughts toward them. Low or free cost CRC screening tests should be provided through ministry of health's hospitals.

Table (1): Demographic characteristics, Medical and Colorectal history of elderly in the study sample (n=109)

Demographic characteristics	Frequency	Percent
Age:		
60-69	97	89.0
70-79	10	9.2
80+	2	1.8
Mea±SD	65.60 ± 4.63	
Rang	(60 – 86)	
Gender:		
Male	58	53.2
Female	51	46.8
Residence:		
Rural	29	26.6
Urban	80	73.4
Marital status:		
Single	1	0.9
Married	71	65.1
Divorced	4	3.7
Widow	33	30.3
Education:		
Illiterate	11	10.1
Read/write	6	5.5
Basic	7	6.4
Intermediate	30	27.5
University / Postgraduate	55	50.5
Income:		
Insufficient	43	39.4
Sufficient	66	60.6
History of chronic diseases in the family:		
Yes	68	62.4
No	41	37.6
Suffering from colorectal diseases		
Yes:	47	43.1
No:	62	56.9
Family history of colorectal cancer		
Yes:	41	37.3
No:	68	62.4

@ Responses are not mutually exclusive
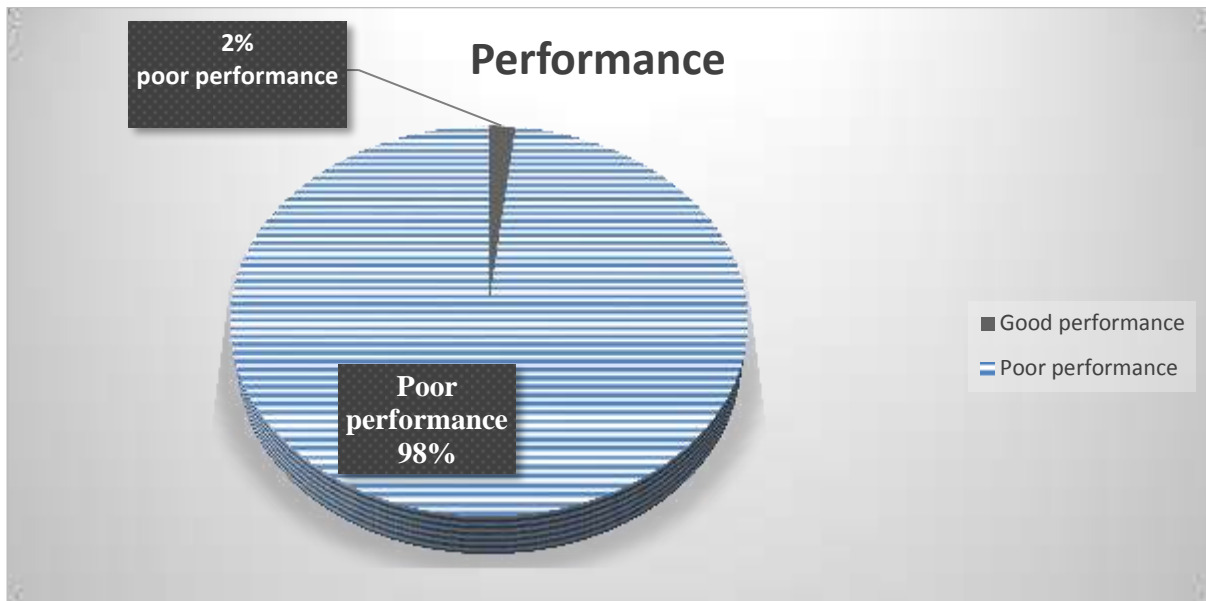
Figure (1): performance of colorectal cancer screening among elderly in the study sample (n=109).
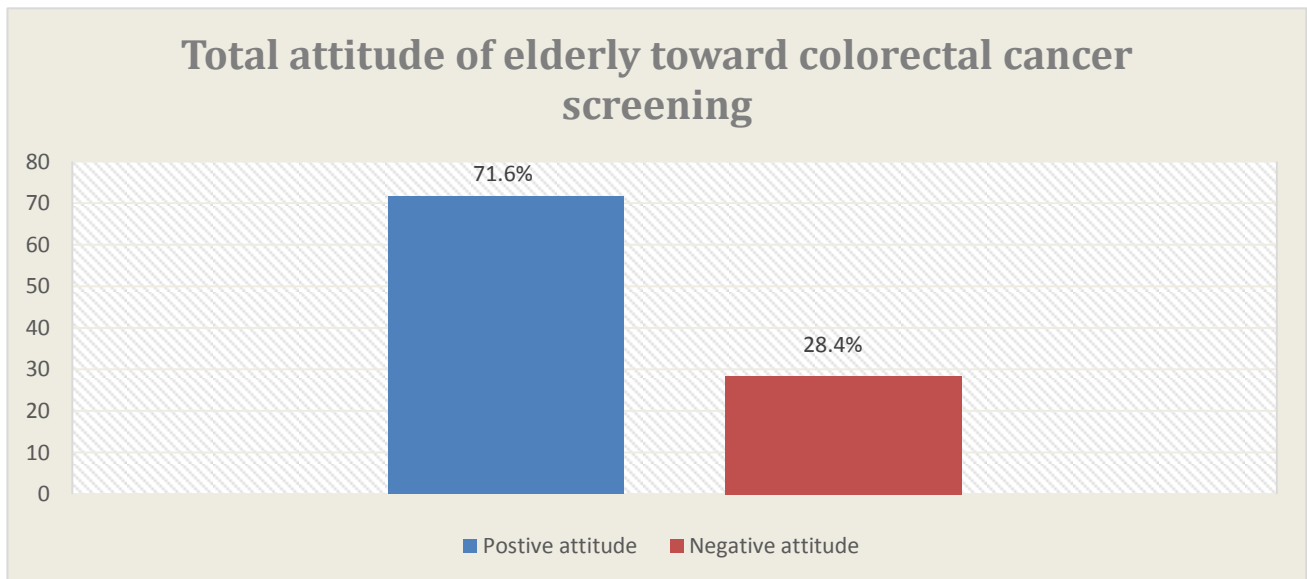
Figure (2): Total attitude of elderly toward colorectal cancer screening (n=109)

Table (2): Correlation matrix of performance and attitude scores regarding CRC and its screening and their personal characteristics.

Personal Characteristics	Spearman's rank correlation coefficient	
	Performance of CRC screening	Attitude toward CRC screening
Age	-.051	-..104
Gender	.010	.061
Residence (urban)	.088	.173
Marital status	.003	.013
Education (high level)	.028	**.275****
Income	-.172	.136
Having no chronic diseases	.078	-.005
Family history of CRC	**.265****	.152

(*) Statistically significant at p<0.05   (**) statistically significant at p<0.01

Table (3): Best fitting multiple linear regression models for elderly's performance of CRC screening score.

Items	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-.016	.127		-.127	.899	-.269	.236
Age	-.011	.038	-.032	-.292	.771	-.087	.065
Gender	.010	.033	.034	.287	.775	-.057	.076
Residence	.057	.038	.182	1.485	.141	-.019	.133
Marital status	-.005	.016	-.032	-.293	.770	-.037	.028
Education level	-.004	.017	-.039	-.250	.803	-.037	.029
Occupation before retirement	-.007	.021	-.039	-.310	.757	-.049	.036
Income	-.051	.029	-.187	-1.738	.086	-.110	.007
Chronic disease	.045	.036	.137	1.255	.213	-.026	.115
History of colon disease	.024	.030	.083	.781	.437	-.037	.084
Family history of colon cancer (yes)	.151	.064	.256	2.361	**.020**	.024	.278
Attitude score	.002	.034	.007	.065	.948	-.065	.070

R-square=0.17   Model ANOVA: F=5.69, p<0.05

Table (4): Best fitting multiple linear regression model for elderly's attitude toward CRC screening.

Items	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.346	.401		.863	.391	-.452	1.144
Age	-.041	.121	-.036	-.338	.737	-.281	.200
Gender	-.051	.105	-.056	-.483	.630	-.260	.159
Residence	.151	.122	.148	1.245	.217	-.090	.393
Marital status	.009	.052	.018	.172	.864	-.094	.111
Education level	.053	.053	.153	1.010	.315	-.052	.158
Occupation before pension	.197	.065	.349	3.057	**.003***	.069	.326
Income	.079	.095	.088	.834	.407	-.109	.267
Having Chronic disease	-.033	.114	-.030	-.286	.775	-.259	.194
Having colon disease	.131	.094	.141	1.395	.167	-.056	.318
Family history of colon cancer	.288	.207	.149	1.390	.168	-.124	.700
performance	.022	.342	.007	.065	.948	-.658	.702

R-square=0.23 Model ANOVA: F=1.80, p<0.05.

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