



Mindfulness based intervention program on stress reduction among elderly with colorectal cancer

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Abstract

Mindfulness Based Intervention Program (MBIP) offers an effective way of reducing stress among elderly with colorectal cancer that define as a malignant cancer that occurs in the colon and rectum.

Aim: this study aimed to evaluate the effect of mindfulness based intervention program on stress reduction among elderly with colorectal cancer through the following objectives: Assessing knowledge of the elderly about colorectal cancer, Planning and implementing mindfulness based intervention program among elderly for stress, reduction. Evaluating the effect of intervention program on stress reduction among elderly.

Design: Quasi experimental design will be utilized in this study.

Setting: This study was conducted on oncology institution and outpatient clinic of Sohag University Hospitals.

Subject: Purposive sample was used in this study for elderly patient aged from 60 years and above diagnosed with colorectal cancer; receive chemotherapy and or radiation therapy.

Tools: Two tools were utilized to collect data Tool I: - A structured interview questionnaire: It was developed by the investigator to collect the necessary data. It will consist of three parts: Socio demographic characteristics of the elderly, Medical history, Assessment of elderly knowledge. Tool II: include two parts: Part I: Mindful Attention Awareness Scale (MAAS): Part II: Perceived stress scale (PSS).

Conclusion and Recommendation: Applying mindfulness based intervention program are effective way to reduce stress in colorectal cancer elderly, So The study recommended to incorporate mindfulness based intervention program in treatment colorectal cancer.

Keywords: Mindfulness based intervention program, stress, colorectal cancer

Introduction

Colorectal cancer (CRC) is acknowledged as a source of stress for many individuals, often leading to suffering, which can be long-lasting. Mindfulness Based Intervention Program (MBIP) offers an effective way of reducing stress among elderly by combining mindfulness meditation and breathing exercises and relaxation exercises in an 8-week training program (Rush & Sharma, 2017) ^[4, 5].

Colorectal cancer is one of the leading causes of cancer-related deaths worldwide. As society ages, the number of elderly. The global burden of colorectal cancer (CRC) has been rising rapidly with population growth, changes in demographics and Westernization of lifestyle habits. It was estimated to have 18.1 million new cancer cases, and 9.6 million deaths caused by cancer in year 2018. CRC is the third commonest diagnosed cancer and the second leading cause of cancer-related mortality. According to the World Health Organization (WHO) Globocan database, there are 1,849,518 estimated new CRC cases and 880,792 CRC-related deaths in 2018 (World Health Organization, 2019) ^[7].

Mindfulness-based stress reduction is moment to moment

awareness is meaningful for many cancer patients who often possess anxiety about the past and the future. (MBSR) has shown positive effects on quality of life and decreased stress symptoms in patients with colorectal cancer. an idea that is extremely significant with regard to cancer care. Continuous stress may lead to unproductive rumination and worry that consumes energy, reinforces the experience of stress itself, and often fuels depression and anxiety. Mindfulness-based stress reduction techniques have demonstrated positive effects on mood, sleep, and physiological markers among cancer patients who have completed treatment. For example, MBSR has been found to have positive effects on the moods and symptoms of stress among cancer patients both immediately following and 6 months after completing the MBSR course (rush &sharma, 2017) ^[4, 5].

Aim of the study

The aim of this study is to evaluate the effect of mindfulness based intervention program on stress reduction among elderly with colorectal cancer through the following objectives:

1. Assessing knowledge of the elderly about colorectal

- cancer.
2. Planning and implementing mindfulness based intervention program among elderly for stress reduction.
 3. Evaluating the effect of intervention program on stress reduction among elderly.

Research hypothesis

Mindfulness based intervention program have positive effect on improving knowledge and reduce stress among elderly with colorectal cancer.

Tools of data collection

Two tools were used to collect the data according to the following:

Tool 1: A structured interview questionnaire (Appendix I)

It was developed by the investigator to collect the necessary data. It was consisted of three parts:

Part I: Demographic characteristics of the elderly

Demographic characteristics of the elderly include gender, age, residence, marital status, level of education, monthly income, family number, number of rooms, crowding index and with whom elderly live?

Part II: Medical history: Full history was taken from elderly include (past & present history).

Past history

It was involve 5 questions about presence of previous surgery, chronic diseases, type of diseases, and type of allergy, continues taking of medications, family history for colorectal cancer, and relation of patient with colorectal cancer.

Present history

It was involve 5 questions about elderly complain, onset of symptoms, signs and symptoms, type of treatment and side effect of treatment.

Part III: Assessment of elderly knowledge about colorectal cancer

Knowledge questions consist of 7 questions to assess elderly knowledge about colorectal cancer include meaning, types, sign and symptom, risk factors, complications, prevention and type of treatment of colorectal cancer.

Scoring system

This part includes 7th questions in score 2 equal 14 grads. Knowledge questions from meaning of colorectal cancer to type of treatments. Each statement was assigned score according to elderly response were: correct was scored 2 grades, incorrect was scored 1 grade. The total score each item summed up and then converted into percent score.

As the following

Knowledge	Score	%
-Poor knowledge	< 7	<50%
-Average knowledge	7-10	50 - <75%
-Good knowledge	11-14	≥ 75%

Tool II: include two parts

Part I: Mindful Attention Awareness Scale (MAAS) (Appendix II)

The MAAS was developed by (Brown and Ryan, 2003). To assess individual differences in the frequency of mindful states over time. The scale includes 15 items with 3 point Likert scale range from never= 1, sometime= 2, always= 3. The measurements from the MAAS consciousness related to self-regulation and various areas of well-being, such as" I could be experiencing some emotion and not be conscious of it until sometime later, I break or spill things because of carelessness, not paying attention, or thinking of something else, I find it difficult to stay focused on what's happening in the present, I tend to walk quickly to get where I'm going without paying attention to what I experience along the way. I tend not to notice feelings of physical tension or discomfort until they really grab my attention, I forget a person's name almost as soon as I've been told it for the first time, It seems I am "running on automatic," without much awareness of what I'm doing, I rush through activities without being really attentive to them, I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there, I do jobs or tasks automatically, without being aware of what I'm doing, I find myself listening to someone with one ear, doing something else at the same time, I drive places on "automatic pilot" and then wonder why I went there, I find myself preoccupied with the future or the past. I find myself doing things without paying attention. I snack without being aware that I'm eating".

Scoring System

Score was ranged from (15-45) the high score the greater tendency toward mindfulness which categorized as following:

Mindful Attention Awareness Scale	Score	%
Low score	15-20	<50%
Moderate score	21-33	50 - <75%
High score	34-45	≥ 75%

Part II: Perceived stress scale (PSS) (Appendix III)

The PSS is the psychological instrument for measuring the perception of stress. The scale includes 10 items. It is measures of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. It was included: "In the last month, how often have you been upset because of something that happened unexpectedly, how often have you felt that you were unable to control the important things in your life, how often have you felt nervous and "stressed, how often have you felt confident about your ability to handle your personal problems, how often have you felt that things were going your way, how often have you found that you could not cope with all the things that you had to do, how often have you been able to control irritations in your life, In the last month, how often have you felt that you were on top of things, how often have you been angered because of things that were outside of your control, how often have you felt difficulties were piling up so high that you could not overcome them".

Scoring system

The PSS-10 prompts elderly to rate the degree to which they felt that life situations during the past month were unpredictable, uncontrollable, stressful, and overwhelming. Responses come on a 3-point response scale always was accorded 3 grades and sometimes was accorded 2 grade and never was accorded 1 grade. Calculate a total PSS grades; responses to the stated items, higher grade indicate higher levels of perceived stress, the scale total score ranges from 1 to 30 grade.

- Low perceived stress (1–10).
- Moderate perceived stress (11–20).
- High perceived stress (21–30).

Pilot study:

The pilot study has been conducted to test the clarity, applicability and understand the ability of the tool .It has been conducted on 10% (33) elderly with colorectal cancer to examine the clarity of questions and determine the time needed to complete the study tools, no major modification done on it, so pilot study included in the main study sample.

Field work

- Written approval letter to carry out this study was obtained from dean of Faculty of Nursing, Helwan University and was directed to manager of Oncology institution and University Hospitals in Sohag.
- The aim of the study and component of tool was explained for each elderly at the beginning of data collection.
- The investigator was interviewing each elderly. Data was collected 2 days per week Saturday and Tuesday for 6 months. Time was take to fill study tool about 30-45 min depend on the degree of response of each elderly.
- Study collected through structure face to face interview and the entire tool filled by the investigator.
- The investigator took 7 elderly in each day for two days per week (56 elderly per month, total number of elderly = 327 elderly)
- Mindfulness based stress intervention program was conducted for the elderly though eight sessions for 30-45 mint.

Result

Table 1: Comparison between elderly knowledge regarding colorectal cancer pre and post mindfulness intervention program (n=327)

Knowledge	Pre intervention program				Post intervention program				Paired t test	P value
	Correct		Incorrect		Correct		Incorrect			
	No	%	No	%	No	%	No	%		
Meaning of colorectal cancer	70	21.4	257	78.6.	220	67.3	107	32.7	19.288	0.000*
Types of colorectal cancer	75	22.9	252	77.1	230	70.3	97	29.7	23.877	0.000*
Sign and Symptoms of colorectal cancer	80	24.4	247	75.6	327	100.0	0	0.0	19.721	0.000*
Risk factors of colorectal cancer	65	19.8	262	80.2	290	88.7	37	11.	21.534	0.000*
Complications of colorectal cancer	120	36.7	207	63.3.	300	91.7	27	8.3	19.228	0.000*
Ways to prevention of colorectal cancer	85	25.9	242	74.1	180	55.0	147	45.0	15.057	0.000*
Types of treatment	120	36.7	207	63.3.	327	100.0	0	0.0	17.304	0.000*

Table 2: Relation between Socio demographic characteristics and total knowledge of elderly Pre &Post intervention Program (N=327).

Total Knowledge	Pre- intervention program	Post intervention program	Paired t test	P value
	Mean ±SD	Mean ±SD		
Age	13.08±2.30	19.22±3.02	18.527	<0.001**
Gender	11.10±2.88	18.12±2.33	14.544	<0.001**
Place of residence	9.11±3.56	15.18±3.66	16.677	<0.001**
Educational level	7.86±1.62	11.94±2.42	15.981	<0.001**
Monthly income	7.16±1.58	12.47±1.93	24.752	<0.001**
Marital status	6.48±1.09	11.40±2.262	22.992	<0.001**
Number of family members	4.42±1.01	5.20±2.101	8.765	<0.422
Crowded index	62.73±8.042	98.68±14.41	24.88	<0.001**

Table 3: Relation between, total knowledge and Mindfulness level

Variable	Total Mindfulness level (n=327)	
	Correlation Coefficient	P value
Total knowledge	0.39	<0.001**

Discussion

Regarding relation between, total knowledge and total Mindfulness level, the current study illustrated that, a highly statistically significance positive correlation between all items of total Mindfulness level and total elderly patients knowledge regarding colorectal cancer. Pre, and post intervention program. This result was supported with (Janusek *et al.*, 2019) who conducted a study entitled "Mindfulness based stress reduction provides psychological

benefit and restores immune function of women newly diagnosed with breast cancer in America” and found that there was a highly statistically significant relation between patients’ knowledge about cancer and their total mindfulness level. Conversely, this result was in disagreement with (Liu *et al.*, 2019) [2] who conducted a study entitled “Mindfulness-based stress reduction in patients with differentiated thyroid cancer receiving radioactive iodine therapy in Brazil” and found that there was no statistically significant relation between patients’ knowledge about cancer and their total mindfulness level. From the researcher point of view, this result may be due to knowledge of patients improved with their characteristics. Regarding relation between demographic characteristics and

total knowledge of studied sample pre & post intervention Program, the current study illustrated that, a highly statistically significance positive correlation between all items of socio- demographic as: age, gender, place of residence, education level, family caregivers, occupation, crowding index and monthly income and total elderly patients knowledge improvement regarding colorectal cancer. Pre, and post intervention program.

This result was in agreement with (Lucas *et al.*, 2018) who conducted a study entitled “Mindfulness-based movement for patients with cancer in Asia” and found that there was a statistically significant relation between patients’ knowledge about cancer and their demographic characteristics. Conversely, this result was in disagreement with (Atreya *et al.*, 2018) ^[1] who conducted a study entitled “A single- arm feasibility study of audio-based mindfulness meditation for colorectal cancer patients and caregivers in Japan” and found that there was no statistically significant relation between patients’ knowledge about cancer and their demographic characteristics. From the researcher point of view, this result may be due to presences relation between knowledge of elderly people and their demographic.

Regarding relation between total knowledge, total Mindfulness level and Perceive stress, the current study illustrates that, a highly statistically significance positive correlation between total elderly patients Total Mindfulness level total knowledge regarding colorectal cancer and Perceive stress, pre, and post intervention program. This result was supported with (Whitfield, 2021) ^[6] who conducted a study entitled “The Effect of Mindfulness-based Programs on Cognitive Function in Adults in New York” and found that there was a statistically significant relation between patients’ knowledge and total mindfulness level. Also, this result was in agreement with (Mirmahmoudi *et al.*, 2020) ^[3] who conducted a study entitled “The effect of mindfulness-based stress reduction group counseling on psychological and inflammatory responses of the elderly people with cancer in Iran” and found that there was a statistically significant relation between patients’ knowledge, perceived stress and total mindfulness level. From the researcher point of view, this result may be due to knowledge and stress was improved after implementation training program.

Conclusion

On the light of the current study result, and answer the research questions it can be concluded that

A highly statistically significant improvements of elderly patients knowledge regarding colorectal cancer throughout pre, and post intervention program phases, 10% of elderly patients had good total knowledge pre intervention program, improved to 90% after the post intervention program. 50% of elderly patients had high stress in the last month, 30% of the moderate stress last months, and only 20% of them low stress last month's 10% of elderly patients had high stress during month, 20% of the moderate stress during months, and only 70% of them low stress during months after post intervention program, a highly statistically significant improvements of elderly patients Mindful Attention Awareness regarding with colorectal cancer throughout pre, and post intervention program phases. 70% of elderly patients had high Mindful Attention Awareness, a highly

statistically significance positive correlation between total elderly patients knowledge regarding colorectal cancer. pre, and post intervention program, a highly statistically significance positive correlation between total elderly patients Total Mindfulness level total knowledge regarding colorectal cancer and Perceive stress .pre, and post intervention program.

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