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The Effectiveness of Acceptance and Commitment Therapy on Physical Health and Quality of Life in Patients with Gastric (Stomach) Cancer

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Quantitative Study

Abstract

Background: Gastric (stomach) cancer is the most prevalent cancer in the north region of Iraq, despite its prevalence substantially falling globally in recent years. It is a multi-factorial illness that arises from ongoing cell damage brought on by a lifetime exposure to various carcinogens. The purpose of the current study was to evaluate the effectiveness of acceptance and commitment therapy (ACT) on physical health and quality of life (QOL) in patients with gastric cancer.

Methods: The research was quasi-experimental with pre-test, post-test stages and control group. Only 28 of the 53 participants who received a gastric cancer diagnosis were deemed suitable for the trial. Patients were randomly separated into experimental (n = 14) and control (n = 14) groups after being chosen via purposeful sampling. The experimental group participated in eight sessions of 60 minutes of ACT. No interventions were given to the control group. The Physical Symptoms Inventory (PSI) developed by Powell and Enright (1991), the cancer-specific EORTC Core Quality of Life Questionnaire (EORTC QLQ-C30) by Aaronson et al. (1988), and a demographic information questionnaire were the three questionnaires utilized in this research. The data were analyzed using descriptive statistics and multivariate analysis of covariance (MANCOVA) with SPSS software. Significance level was defined as $P \leq 0.05$.

Results: ACT was effective on physical health ($F = 5.49$, $P < 0.04$) and QOL ($F = 37.42$, $P < 0.01$) in patients with gastric (stomach) cancer.

Conclusion: Given that ACT is helpful in enhancing QOL and physical health in patients with gastric (stomach) cancer, health care facilities might use this intervention technique as a supplemental therapy to lessen the negative effects that these patients encounter.

Keywords: Stomach neoplasms; Quality of life; Acceptance and commitment therapy

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Introduction

Cancer is one of the most widespread health issues in the world, and it threatens the safety and lives of people in different age groups (Miller et al., 2019). It can negatively impact a family's economic situation, as well as the social and psychological well-being of individual members (Ciazynska et al., 2020; Roser, Erdmann, Michel, Winther, & Mader, 2019). Sixty percent of people diagnosed with cancer do not pass away during the first year of treatment (Trivedi et al., 2020). In Iraq, patients diagnosed with gastric (stomach) cancer have a survival rate of 15% in the first five years after diagnosis (Mohialdeen et al., 2019); nonetheless, in the first year of diagnosis, approximately seven million individuals lose their lives to cancer each year (Liu et al., 2018).

The International Agency for Research on Cancer' most recent findings showed that gastrointestinal (GI) cancers, including gastric, esophageal, colorectal, and liver, were among the most frequently diagnosed cancers globally (Sung et al., 2021). Esophageal, gastric, and liver cancers are more prevalent in countries with lower incomes, although the greatest rates of colorectal cancer are typically observed in countries with higher incomes (Arnold et al., 2020; Kamaraju, Drope, Sankaranarayanan, & Shastri, 2020). After colorectal carcinoma, gastric cancer is Iraq's second-most prevalent GI malignancy (Shahid, Jawad, & Abbas, 2017). Regrettably, cancer mortality rates are higher in less economically developed countries because such cancers have a substantially worse prognosis (Choi et al., 2017; Jemal, Center, DeSantis, & Ward, 2010). An estimated 26% of all cancers worldwide and 35% of all cancer-related fatalities are due to gastric cancers (Chon et al., 2017).

The risk of developing gastric cancer before the age of 40 is extremely low, but beyond that age, the risk continuously increases until it reaches its highest point in the seventh decade of life (Fock, 2014; Hsieh, Wang, Hsu, Liu, & Yeh,, 2012). A nationwide pathology-based cancer registry program was implemented in the entirety of Iraq in the year 2020 to understand the burden of cancer and monitor trends in cancer rates (Al Mosawi, 2021). Among the top five most prevalent cancers were gastric cancers. There are numerous detrimental repercussions of cancer on people's life. The most noticeable aspects of the cancer problem are pain and physical discomfort. Together with the progressing nature of the disease, the patient's reaction to these issues and the resulting heavy mental burden make the healing process more difficult than ever (Carrillo & Santamaria, 2019). Throughout conventional medical treatments for cancer, many patients suffer severe psychological and emotional distress and are unhappy with their life. At this point, psychological therapies play a more substantial role in helping patients with cancer and significantly and positively influence perceived cancer symptoms (Kim et al., 2017). One of the most crucial variables in a patient's adherence to current therapies is the patient's quality of life (QOL), which can be improved by therapeutic interventions (Kaptein, Morita, & Sakamoto, 2005). This increases life expectancy in patients with cancer and, as a result, their optimism for treatment.

An improvement in psychological flexibility, including psychological acceptance and commitment-based activities derived from values surrounding life, would be achieved through acceptance and commitment-based therapy (Ferreira, 2011; Taleghani et al., 2021). The effectiveness of this therapy in reducing patients' perceptions of pain and improving their QOL has led to its approval in a wide range

of physical illnesses characterized by chronic pain (Keefe et al., 2003; Viklund, Wengstrom, & Lagergren, 2006). One of the most crucial topics lately emerged as being quite significant in health of patients with cancer is the QOL. As a measure of the health-related QOL in patients with cancer, this health indicator has been debatable for over 20 years (Kouwenberg et al., 2020). The World Health Organization (WHO) defines each person's knowledge of life, personal preferences, standards, aspirations, and values as their QOL, which is a multifaceted notion (Haraldstad et al., 2019). Patients' well-being and healthy members of the general public are also greatly influenced by psychological health, which is among the most significant factors. Psychological health refers to a state of well-being in which people who are aware of their potential are able to handle the demands of daily life, do their jobs well, and contribute to society (Verduzco-Aguirre et al., 2021). The factors of social interactions, mental disease, insomnia, anxiety, and despair all play a significant role in the development of psychological health. Acceptance and commitment therapy (ACT) is a mindfulness-based behavioral therapy for managing health outcomes and inducing health-related behavior changes. However, the components and modality of ACT and its effectiveness on health outcomes for patients with advanced cancer remain unclear (Ye et al., 2018). It is acknowledged that psychological treatment is necessary to treat cases of gastric cancer that are mentally disruptive, since gastric cancer is the most prevalent type of cancer and has a profound influence on individuals' psychological well-being. ACT may be a beneficial way to improve depressive symptoms, anxiety, psychological distress, sleep characteristics, and health-related QOL in patients with advanced cancer. However, more studies are needed to evaluate the effects of treatment. This research aims to determine the effectiveness of ACT on physical health and QOL in patients with gastric cancer.

Methods

The current research was conducted according to the clinical trial method. The statistical population of this study were all the patients with gastric cancer who have been admitted to the surgical wards at Imam Ali Hospital, Baghdad, Iraq, between February 17, 2021, and February 17, 2022. 53 participants were diagnosed with gastric cancer, but only 28 of those patients were declared eligible for the study. They were randomly chosen from two groups - one experimental, the other control - after being purposely divided. Each participant was given a code, and by random, one was placed in the experimental group and one in the control group. The experimental group participated in eight sessions of 60 minutes in ACT. No interventions were given to the control group. The participants were made aware of the goals of the study and the steps involved in its execution. They were also given assurances about the privacy of their information and were given the freedom to withdraw from the study at any time.

The inclusion criterion was studies of diagnostic test and accuracy in laparoscopic staging of gastric cancer confirmed by histopathologic examination with evaluation for possible peritoneal metastases. The exclusion criteria were studies that used no standardized technique of staging laparoscopy, patients with early gastric cancer, complications (stenosis, bleeding), and patients with tumors in the gastroesophageal junction.

The EORTC Core Quality of Life Questionnaire (EORTC QLQ-C30): Aaronson et al. created this 30-item questionnaire in 1988 to measure this aspect in patients with

cancer. It is compatible with the WHO Quality of Life Questionnaire (QLQ). The purpose of this short, self-administered questionnaire, which was expressly created to assess the QOL in patients with cancer, is to gauge how well they are coping with their condition. There are 30 items in the questionnaire, divided into three categories: symptom scale, functional scale, and general health status. As a result of adding the scores from the three categories, the questionnaire's maximum score is 100. The QOL increases as the score rises. With the exception of the pain and fatigue measures, this questionnaire's Cronbach's alpha was between 0.65 and 0.66. Cronbach's alpha was greater than 0.7 in all of the other scales. Overall, the entire QOL's Cronbach's alpha was 0.82 (Aaronson, Bullinger, & Ahmedzai, 1988). This questionnaire was designed to collect data on how daily lives of patients with cancer were affected by the disease and its treatments. Additionally, the alpha coefficient of this questionnaire's standardization in Iraq ranges from 0.54 to 0.87 (Sadighi, Montazeri, Sedighi, Mohagheghi, & Froutan, 2009).

Physical Symptoms Inventory (PSI): Powell and Enright (2015) created this questionnaire in 1991 to gauge a patient's physical symptom intensity and type (Powell & Enright, 2015). PSI is an 18-item self-report inventory that measures eighteen physical symptoms during the previous month, such as shortness of breath/feeling of choking, palpitations, dizziness, pain or discomfort in the chest, breathtaking/panting, tingling or numbness of body, becoming hot and cold, sweating, faint, trembling or twitching, feeling sick, impaired belly/diarrhea, headache/migraine, dry mouth/difficulty in swallowing, distorted sense of reality, feeling of pressure in the jaw, neck, and shoulders, heavy legs, trembling legs, and any other physical symptoms. This questionnaire is scored on a 4-point Likert scale (never = 0, sometimes = 1, often = 2, and always = 3). The Cronbach's alpha of the PSI was 0.89.

Following the data gathering process, the Kolmogorov-Smirnov test was utilized to examine the normality of the data. Levene's test evaluates the homogeneity assumption needed for analysis of variance (ANOVA). The data were analyzed using descriptive statistics and multivariate analysis of covariance (MANCOVA) with SPSS software (version 21, IBM Corporation, Armonk, NY, USA). A P-value < 0.05 was considered statistically significant.

Results

The present sample consisted of 28 patients. The mean age of the participants was 53.4 ± 1.4 years. The sample's youngest member was 41 years old, while the oldest was 71. The intervention group (ACT) consisted of 14 members. The mean age of the intervention group and control group was 53.41 ± 1.30 and 53.02 ± 1.50, respectively. Demographic characteristics did not significantly differ across the two groups. With 13 patients, the bachelor's degree had the highest frequency of academic degrees. The highest age range was between 47 and 57 years, with a mean of 53.21 ± 1.60. Kolmogorov-Smirnov test was needed as a prerequisite in order to evaluate the covariance findings among the experimental and control groups. Results from the pre-test and post-test groups were distributed normally, as shown in table 1.

The physical symptom variable had a lower value in the post-test than it did in the pre-test, as shown in table 2, indicating an improvement in physical health. In addition, the more points given for the QOL variable, the better the QOL components were. Compared to the score received in the pre-test, the one acquired in the post-test for this variable was much greater.

The variance homogeneity of the aforementioned variables must be investigated

as a precondition for the covariance test.

Table 1. Results of Kolmogorov-Smirnov test to determine the normality of the quality of life (QOL) and physical symptom variables in the intervention and control groups

Variable	Group	Pre-test		Post-test	
		Levene's statistic	Asymptotic significance	Levene's statistic	P-value
QOL	Intervention	0.126	0.221	0.181	0.113
	Control	0.138	0.220	0.128	0.213
Physical symptom	Intervention	0.101	0.206	0.193	0.145
	Control	0.218	0.079	0.105	0.209

QOL: Quality of life

Levene's test results demonstrated the homogeneity of the variance-considered data. The findings of Kolmogorov-Smirnov test also demonstrated that the two variables' data were normally distributed. The Levene's statistic and significance level of pre-test of QOL and physical symptoms were 0.44 and 0.55 versus 0.28 and 0.63, respectively. Besides, for the post-test, the aforementioned values were 0.51 and 0.50 versus 0.09 and 0.79, respectively.

The QOL score differed significantly between the intervention and control groups, as indicated in table 3, and this difference was statistically significant ($P < 0.05$). The sum of the physical and mental health scores was used to calculate the total QOL score. The covariance test was used to see if the hypothesis was correct, and the pre-test and group component mean squares were 520.04 and 1085.05, respectively. Additionally, the study group variable's F component was 35.61, and the control group variable's F component was 17.06. The observed mean square values for study group components and control group were 200.42 and 385.47, respectively. The significance level was below 0.05. The variance analysis outcome is presented in table 3.

The results showed that the physical symptom variable significantly differed between the control and intervention groups.

Discussion

The effectiveness of ACT on physical health and QOL in patients with gastric cancer has been the subject of numerous studies in recent years. In this study, QOL of patients with cancer is improved through ACT. The importance of physical health is one of the key elements influencing life satisfaction for anyone, whatever of age, to be content with their physical health. Numerous factors spanning the entirety of each person's life impact their physical health and depend on their past and future actions. When individuals in their late adulthood experience chronic and serious diseases, they tend to attribute some blame to past choices. Additionally, they do not consider their current level of health to be acceptable or fair, and all of these issues contribute to a general discontent with the current state of affairs. This discontent diminishes patients' QOL.

According to the results, there was a large gap between the two groups regarding the symptoms associated with a person's QOL when they had cancer.

Table 2. The variables being studied in each group at different stages

Variable	Group	Pre-test (mean ± SD)	Post-test (mean ± SD)
QOL	Intervention	8.21 ± 51.35	9.12 ± 44.11
	Control	9.05 ± 50.21	8.43 ± 46.92
Physical symptom	Intervention	8.16 ± 19.73	7.56 ± 10.61
	Control	8.03 ± 19.12	7.11 ± 33.17

SD: Standard deviation; QOL: Quality of life

Table 3. The covariance analysis results to compare the study group with the control

Source	SS	df	MS	F	P-value	Partial eta squared
QOL						
The pretest effect	520.04	1	520.04	17.93	0.01	0.36
Group	1085.05	1	1085.05	37.42	0.01	0.54
Error	927.66	31	29.00			
Physical symptom						
The pretest effect	385.47	1	385.47	10.55	0.03	0.25
Group	200.42	1	200.42	5.49	0.04	0.15
Error	1132.41	31	36.53			

SS: Sum of squares; DF: Degree of freedom; MS: Mean squares; QOL: Quality of life

The current study's findings are consistent with Al Qadire et al. (2021) research. This study's discussion of ACT's effectiveness in raising the QOL is consistent with Bachmann et al. (2018) research.

Patients with cancer exhibit many physical symptoms, and how these symptoms are perceived is partially influenced by one's mental state. They were able to comprehend the physical symptoms of their sickness more clearly by being placed in the intervention group and group therapy with other patients with cancer who also reported severe physical symptoms. They could alternatively accept these symptoms as a part of their condition, strive to understand and manage them without bias, and think of such symptoms as a part of their illness. Patients are self-aware of the need to work diligently to lessen the symptoms, making it easier to regulate these symptoms using the skills given in the treatment group. The results of the investigations by Hashemi et al. (2020) and Ghorbani et al. (2021), which used the explanations above to arrive at their conclusions, are consistent with those of the current study.

It is important to note some of the study's limitations. In this research, a large hospital in capital of Iraq provided care for the patients. It is impossible to determine how well the results can be generalized to other clinics and regions of the country. The comparatively high QOL scores could be explained by the overrepresentation of those from better socioeconomic class. The sample size was too small to make reliable judgments on the comparison of subgroups. Social desirability may skew subjective evaluations of social support.

Conclusion

According to the current study, using ACT for patients with gastric cancer greatly enhanced their QOL and physical health. By elevating the significance of the variables being considered and guiding patients through reviewing their judgment, ACT can lessen patients' instances of self-criticism and the intensity of their negative feelings.

Conflict of Interests

Authors have no conflict of interests.

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