RESEARCH ARTICLE

F.U. Med.J.Health.Sci.
2024; 38 (2): 160 - 166
http://www.fusabil.org

The Effect of Motivational Interviewing on Self-Efficacy and Life Satisfaction in Cancer Patients: A Quasi-Experimental Study *

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Objective: Motivational interviewing has been found to be effective in the adaptation to the disease and treatment process, especially in individuals with chronic diseases. This method has been proven to be useful in achieving behavioral change, optimizing treatment and care, and rehabilitation. This research was conducted to determine the effect of motivational interviewing on self-efficacy and life satisfaction in cancer patients.

Materials and Methods: The research was completed as a quasi-trial model with pretest-posttest control group, with 55 experimental and 55 control group patients. Descriptive statistics, Student's t- test, and correlation analysis tests were used for analyzing the data.

Results: It was found that the self-efficacy and life satisfaction mean scores of the experimental group patients increased more than the control group, and the difference between the pretest and posttest mean scores was statistically significant (p=0.001). It was determined that there was a positive significant relationship between the self-efficacy and life satisfaction post-test mean scores of the experimental group patients (p=0.001). It was found that as self-efficacy increased, life satisfaction also increased.

Conclusions: In this study, it was found that the self-efficacy and life satisfaction of cancer patients increased after motivational interviewing and there was a significant positive relationship between them.

Key Words: *Cancer, nursing, motivational interviewing, self-efficacy, life satisfaction*

Kanser Hastalarında Motivasyonel Görüşmenin Özyeterlilik ve Yaşam Memnuniyeti Üzerindeki Etkisi: Yarı Deneysel Bir Çalışma

Amaç: Motivasyonel görüşmenin özellikle kronik hastalığı olan bireylerde hastalığa uyum ve tedavi sürecinde etkili olduğu bulunmuştur. Bu yöntemin davranış değişikliğinin sağlanmasında, tedavi ve bakımın optimize edilmesinde ve rehabilitasyonda yararlı olduğu kanıtlanmıştır. Bu araştırma, kanser hastalarında motivasyonel görüşmenin öz-yeterlik ve yaşam doyumu üzerindeki etkisini belirlemek amacıyla yapılmıştır.

Gereç ve Yöntem: Araştırma, 55 deney ve 55 kontrol grubu hastası ile ön test-son test kontrol gruplu yarı deneme modelinde tamamlandı. Verilerin değerlendirilmesinde; Tanımlayıcı istatistikler, Student's t- testi, korelasyon analizi testleri kullanıldı.

Bulgular: Deney grubu hastalarının öz-yeterlik ve yaşam doyumu puan ortalamalarının kontrol grubuna göre daha fazla arttığı, ön test ve son test puan ortalamaları arasındaki farkın istatistiksel olarak anlamlı olduğu bulunmuştur (p=0.001). Deney grubundaki hastaların öz-yeterlik ile yaşam doyumu son test puan ortalamaları arasında pozitif yönde anlamlı bir ilişki olduğu bulunmuştur (p=0.001). Öz-yeterlik arttıkça yaşam doyumunun da arttığı belirlenmiştir.

Sonuç: Bu araştırmada kanser hastalarının öz yeterliliğinin ve yaşam doyumunun motivasyonel görüşme sonrasında arttığı ve aralarında anlamlı pozitif bir ilişki olduğu bulunmuştur.

Anahtar Kelimeler*:* *Kanser, hemşirelik, motivasyonel görüşme, öz-yeterlik, yaşam doyumu*

Received : 02.04.2024
Accepted : 10.06.2024

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Introduction

Cancer is a major life-threatening health problem with a high mortality and morbidity rate, ranking second among the leading reasons for death, causing anxiety about the future and uncertainty (1). One in five people worldwide will develop cancer in their lifetime (2). In 2020, 10.0 million people worldwide died from cancer, while 19.3 million individuals had cancer diagnoses (3). In Türkiye, the number of new cancer cases in 2022 was 240 013 and the number of deaths was 129 672 (4). Motivational interviewing is used to elicit the problems of patients, especially those who are unwilling to adapt to change or who have trouble making decisions for change, and to help them cope with these problems and achieve behavioral change (5, 6). Motivational interviewing is an effective method in the treatment process of many chronic disease

* This research was produced from Zeki MAMUR's master's thesis

such as cessation of smoking addiction, compliance with the treatment of diabetes (type 1 and type 2),treatment of smoking and other substance addictions, treatment of mental health diseases, and cancer (7, 8). Motivational interviewing has been found to be effective in the adaptation to the disease and treatment process, especially in individuals with chronic diseases. This method has been proven to be useful in achieving behavioral change, optimizing treatment and care, and rehabilitation (9).

Nurses play an important role in transforming unhealthy behaviors into healthy behaviors. Nurses' spending more time with patients and being in more communication with them compared to other health professionals has been effective in taking on this role (10). It has been stated that nurses will show a behavioral change in the desired way with the motivational interviewing method (9). It is claimed that the quality of nursing care will increase and continuity will be ensured with motivational interviewing (10). It has been proven that nurses are actively involved in the treatment process of patients through motivational interviewing methods in chronic diseases with a long treatment course. For the continuity of care, treatment, and rehabilitation of patients, the motivational interviewing method has been found to increase self-efficacy (9, 10). Many studies on motivational interviewing have been conducted in different settings such as clinics, hospitals, schools, and homes; and it has been found to have clinically significant effects on total blood cholesterol, body mass index, blood pressure, diabetes, and blood alcohol level (5-7).

The hypotheses of the study are as follows;

H1. Motivational interviewing has an effect on self-efficacy in cancer patients.

H2. Motivational interviewing has an effect on life satisfaction in cancer patients.

This study was undertaken to ascertain the effect of motivational interviewing on self-efficacy and life satisfaction in patients diagnosed with cancer.

Materials and Methods

Research and Publication Ethics: This study was ratified by the University Ethics Committee (Decision No: 2020/01-13). Every participant in the study provided their consent to take part. The researchers explained the study's goals to participants who decided to participate, and their informed, written agreements were obtained. The study's volunteers were given the assurance that all information would be kept private, that the information gathered would only be used for research, and that they could withdraw from the study at any moment. The Declaration of Helsinki's guiding principles were followed during the research's execution.

Research Design and Sampling: This study is a quasi-experimental investigation using a control group in the pretest and posttest. It was implemented in a University Hospital in eastern Turkey between January 2020 and June 2022. The target population of the study consists of all patients diagnosed with cancer in General Surgery and Oncology Services wards of the University Hospital. The sample size was calculated as 110 patients (55 experimental groups, 55 control group) using the G Power v3.1.9.7 program with a margin of error of 0.05, an effect size of 0.7, a confidence interval of 0.95, and a power analysis measurement with a 95% power to represent the population (11). Patients who met the criteria for inclusion and were chosen at random from the population were included in the sample. Four patients who declined to take part in the trial and three patients who did not meet the inclusion criteria were excluded (Figure 1). The experimental group patients were enrolled in the study first, followed by the control group patients.

Criteria for Inclusion and Exclusion

Inclusion Criteria: (i) no communication problems, (ii) good mental health, (iii) hospitalization planned for at least 12 days

Exclusion Criteria: (i) Patients who did not fulfill the inclusion criteria were excluded.

Data Collection Instruments

Personal Information Form: The form was created by the researcher, and it contains patient-specific descriptive data.

Self-Efficacy Scale (SES): It is a Likert-type scale developed by Sherer and Adams (12) to evaluate behaviors and changes in behaviors. The Turkish reliability and validity study was conducted by Gözüm and Aksayan (13). It expresses the perception of the ability to perform a certain action successfully, control events, or the perception of the ability to achieve a certain level of performance. On this scale, a score can range from 23 (the lowest possible) to 115 (the highest possible). A high rating on the scale demonstrates a high level of self-efficacy in the subject. The scale's Cronbach's alpha coefficient was determined to be 0.81 (13). The Cronbach's alpha coefficient for this study was 0.82.

Satisfaction with Life Scale (SWLS): It is a Likert-type scale developed to determine the satisfaction of people with their lives by Diener et al. (14) Its Turkish reliability and validity were conducted by Köker. The scale consists of 5 items with 7 Likert-type grades. Each item is scored between 1 and 7, with the lowest score being 5 and the highest score being 35, and a high score indicates a high level of life satisfaction. Cronbach's alpha coefficient of the scale was 0.85 (15). The Cronbach's alpha coefficient for this study was 0.79.

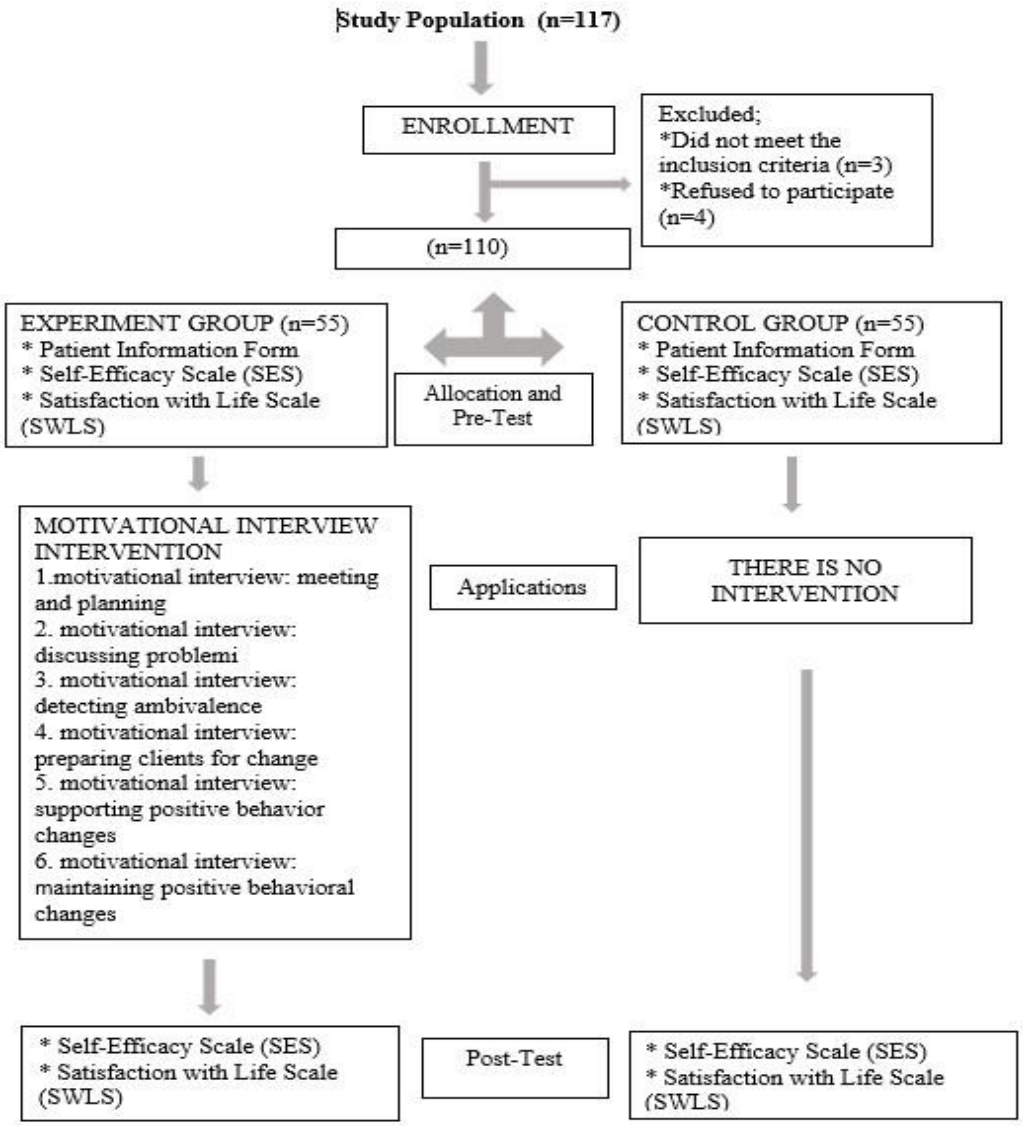

Figure 1. Consolidated Standards for Reporting Experiments (CONSORT) flowchart

Data Collection: The first author collected the data between October 2021 and April 2022 by means of a face-to-face interview. Since the researcher would conduct 6 motivational interviews every other day, the researcher carried out the study with patients who were planned to be hospitalized for at least 12 days. Self-Efficacy Scale, Personal Information Form, and Satisfaction with Life Scale were filled out by the researcher in the clinic as a pretest for the experimental group of patients. Motivational interviews were applied in every other day as 6 sessions, and the Self-Efficacy Scale and Satisfaction with Life Scale were applied as a posttest the day after the motivational interviews were completed.

Data collection tools were filled in by the author in the clinic as a pretest for the patients in the control group, no intervention was made to this patient group, and 13 days later, the Self-Efficacy Scale and Satisfaction with Life Scale were applied as a posttest. The answers were recorded by the researcher by marking the forms.

Experimental Group Intervention: The first author received training on motivational interviewing techniques before the study started. The experimental groups received six motivational interviews in groups of 10 participants every other day using a face-to-face interview technique. Each session of motivational interviews lasted 40 minutes. The interviews were conducted by the author in the clinic meeting room at noon when the clinic was quieter.

Motivational interview plan;

1. During the motivational interview, the patients were met and information about the application was given.

2. In the motivational interview, patients were listened to with empathy. They were encouraged to ask clearly what they wondered and worried about their diseases. Reflective listening was done by asking open-ended questions to the patients.

3. In the motivational interview, patients were reminded of the positive aspects of treatment compliance and the negative aspects of non-compliance, they were encouraged to talk about their illnesses with each other to make sure that they wanted to get better and to recognize their ambivalence.

4. In motivational interviewing, when patients expressed their dilemmas, they were asked to compare their pre-interview knowledge about the disease, compliance with treatment, and the negative and positive aspects of the behaviors they developed against the disease. Patients were prepared for behavior change.

5. In the motivational interview, patients were told not to see the disease as an obstacle to their lives and to participate in appropriate activities to support change in the desired direction.

6. In the motivational interview, a brief summary of the other interviews was made to ensure the continuity of the positive behavioral changes we achieved in patients. The points they should pay attention to were stated.

Statistical Analysis: The Statistical Package for the Social Sciences (SPSS) v22.0 analysis program was used to analyze the data, and the statistical significance threshold used was $p<0.05$ (16). Data were analyzed using normality test was performed using Shapiro-Wilk test, Student's t-tests, descriptive statistics, and correlation analysis tests.

Results

The mean age of 55 experimental patients enrolled in the study was 48.78±11.96 years. Of the patients, 54.5% were male, 63.6% were married, 61.8% were employed, and 29.1% were secondary school graduates. The mean age of 55 control patients enrolled in the study was 52.36±14.01 years. 56.4% of the patients were male, 76.4% were married, 50.9% were not working, and 23.6% were high school graduates (Table 1).

Table 1. Distribution of Patients According to Descriptive Characteristics

Characteristics	Experiment		Control	
	n	%	n	%
Gender				
Woman	25	45.5	24	43.6
Man	30	54.5	31	56.4
Marital status				
Married	35	63.6	42	76.4
Single	20	36.4	13	23.6
Age				
20-40	15	27.3	15	27.3
41-50	16	29.1	13	23.6
51-60	14	25.5	10	18.2
61-70	6	10.9	11	20.0
71+	4	7.3	6	10.9
Working status				
Working	34	61.8	27	49.1
Not working	21	38.2	28	50.9
Education level				
Illiterate	9	16.4	12	21.8
Primary School	13	23.6	11	20.0
Middle School	16	29.1	11	20.0
High School	11	20.0	13	23.6
University	6	10.9	8	14.5

Table 2. Comparison of SES and SWLS pretest posttest score means of patients in the Experimental and Control Groups

Scale	Experiment (n=55) X ± SD	Control (n=55) X ± SD	Test*
SES pretest	62.25±4.53	61.03±4.49	p=0.188
SES posttest	81.20±4.25	63.74±5.91	***p*=0.001**
SWLS pretest	18.94±2.15	18.30±1.70	p=0.100
SWLS posttest	24.96±2.54	19.70±2.75	***p*= 0.001**

Self-Efficacy Scale (SES)
Satisfaction with Life Scale (SWLS)
* Student's t-tests

Table 3. Comparison of SES and SWLS test scores of patients in the Experimental Group before and after conducting motivational interviewing

Scale	Pretest (n=55) X ± SD	Posttest (n=55) X ± SD	Test*
SES	62.25±4.53	81.20±4.25	***p*=0.001**
SWLS	18.94±2.15	24.96±2.54	***p*=0.001**

Self-Efficacy Scale (SES)
Satisfaction with Life Scale (SWLS)
* Student's t-tests

Table 4. Comparison of SES and SWLS pretest and posttest scores of patients in the Control Group

Scale	Pretest (n=55) X ± SD	Posttest (n=55) X ± SD	Test*
SES	61.03±4.49	63.74±5.91	***p*=0.001**
SWLS	18.30±1.70	19.70±2.75	***p*=0.001**

Self-Efficacy Scale (SES)
Satisfaction with Life Scale (SWLS)
* Student's t-tests

It was found that the mean SES and SWLS posttest scores of the patients in the experimental group increased more than the mean scores of the patients in the control group. When the SES and SWLS posttest mean scores were examined, it was seen that the difference between the experimental and control groups was statistically significant (Table 2, *p*=0.001).

The patients in the experimental group had a mean SES pretest score of 62.25±4.53, whereas their mean posttest score was 81.20±4.25. There was a statistically significant difference between the mean SES pretest score and the mean posttest score (*p*=0.001). The mean SWLS pretest score was 18.94±2.15 and the mean posttest score was 24.96±2.54. A statistically significant difference between the mean SWLS posttest and pretest scores was detected (Table 3, *p*=0.001).

The mean SES pretest and posttest scores of the patients in the control group were 61.03±4.49 and 63.74±5.91, respectively. There was a statistically significant difference between the mean SES posttest and pretest scores (*p*=0.001). SWLS pretest mean score was 18.30±1.70 and posttest mean score was 19.70±2.75. A statistically significant difference in the mean SWLS posttest and pretest scores was detected (Table 4, *p*=0.001).

The relationship between the SES and SWLS posttest and pretest scores of the patients is shown in Table 5. When the relationship between SES and SWLS pretest scores was examined, they did not have a significant association, but the posttest scores did have a significant association that increased to the medium level (*p*=0.001). As self-efficacy increased, life satisfaction also increased.

Table 5. Investigation of the Relationship between SES and SWLS Pretest-Posttest Scores of Patients in the Experimental and Control Groups

Scale	n	Test
SES-SWLS pretest	110	r= 0.071 *p*=0.460
SES-SWLS posttest	110	r= 0.653 ***p*=0.001**

Self-Efficacy Scale (SES)
Satisfaction with Life Scale (SWLS)

Discussion

In this investigation, the effect of the motivational interviewing method on self-efficacy and life satisfaction in cancer patients was investigated. When the pretest-posttest scale scores of the patients were examined, we found that in the experimental group patients' mean SES and SWLS posttest scores grew more than those in the control group's mean scores. When the mean scores of the SES and SWLS posttests were analyzed, the difference between the experimental and control groups was detected to be statistically significant. The higher mean scores of the experimental group in the posttest of self-efficacy compared to the pretest may be related to the effectiveness of the motivational interview conducted by the researcher with this patient group. In the control group, the higher posttest mean score of self-efficacy was higher than the pretest mean score, suggesting that this is the result of the adaptation of this patient group to the disease and the treatment process. In the study conducted by Çakmak (17) in cancer patients, the medication compliance levels and self-efficacy levels of the patients increased significantly with the motivational interviewing technique; also, it was found that the medication self-efficacy level of the patients rose. The result of the study is similar to our study findings.

Patients in the experimental group had mean SES and SWLS posttest scores that were higher than their pretest mean scores. The difference between the mean pretest and posttest scores of SES and SWLS was found to be statistically significant. The motivational interviewing method is known to be an effective method for adaptation to the disease and the disease process in chronic diseases, developing healthy life behaviors related to the disease, and quitting some substance addictions or harmful habits (10). Cancer patients experience mental problems from the moment they are diagnosed with cancer and have no expectations from life. With the motivational interviewing method, our aim in this study is to increase the self-belief of patients diagnosed with cancer, to enable them to adopt healthy living behaviors, reduce their mental distress, ensure compliance with the challenging treatment process, and improve their quality of life. As a consequence of the research, the hypotheses 'Motivational interviewing has an effect on self-efficacy in cancer patients' and 'Motivational interviewing has an effect on life satisfaction in cancer patients' were confirmed. Zolfaghari et al. (18) found that motivational interviewing had a significant positive relationship with women's compliance with cervical cancer screening tests. Salimzadeh et al. (19) found that motivational interviewing positively affected colorectal cancer screening programs. Postoperative motivational interviewing in lung cancer patients was found to provide pulmonary rehabilitation and increase self-efficacy (20). The results of the literature demonstrate the necessity of

our research topic and prove that motivational interviewing, which increases patient compliance and positively affects self-efficacy, should be included in treatment programs.

The mean posttest scores of SES and SWLS of the patients in the control group were greater than the mean pretest scores. A statistically significant difference was detected between the mean pre- and posttest scores for SES and SWLS. Cancer diagnosis and treatment is a physically and psychologically challenging process. All cancer patients experience psychological stressors such as anxiety, future anxiety, and fear of death. With hospitalization, the patients are isolated from their environment and feel psychological stressors more as they try to adapt to the environment. Patients who stay in the hospital for a certain period of time adapt to the hospital and the challenging treatment process; they establish trusting relationships with both healthcare professionals and other patients. They get to know themselves over time and discover what they can and cannot do. Therefore, the higher posttest mean scores of self-efficacy and life satisfaction in the control group patients compared to the pretest mean scores can be considered to be due to the patient's adaptation.

When the relationship between the SES and SWLS pretest scores of the patients in the control and experimental groups participating in the study was examined, it was found that the relationship between them was not significant, while the positive significant relationship between the posttest scores increased to a moderate level. It was found that life satisfaction increased as self-efficacy increased. In Tanrıverdi's study (21) examining the relationship between life satisfaction and self-efficacy, there was a significant positive association between patients' self-efficacy and life satisfaction at a moderate level. It was found that the self-efficacy and quality of life of lung cancer patients who received motivational interviewing increased compared to the control group (20).

In a study conducted on cancer patients receiving chemotherapy, a significant positive association was found between self-efficacy and life satisfaction (22). One of our job descriptions as nurses is to provide education to patients and healthy individuals. For this reason, education is necessary for individuals with chronic diseases to adapt to the disease, disease process as well as medical treatment. Awareness of their strengths and weaknesses and improvement of the weaknesses are thought to increase compliance with treatment and life satisfaction.

As a result, in study it was found that cancer patients' self-efficacy and life satisfaction increased after motivational interviewing and there was a significant positive association between them. To increase self-efficacy and life satisfaction in these patients, it might be proposed to apply motivational interviewing in addition to medical treatment, to use it in nursing care, and to undertake similar studies in greater sample groups.

Limitation of the study, the results of the study can only be generalized to this group.

Acknowledgments: The researchers would like to extend their heartfelt appreciation to all of the patients who volunteered to participate in this study and contributed.

Funding: No funding was received

Conflict of Interest: The authors declare no conflict of interest.

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