Efficacy of EMDR Therapy on the Pain Intensity and Subjective Distress of Cancer Patients

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The present study was carried out to investigate the efficacy of eye movement desensitization and reprocessing (EMDR) therapy in treating pain and subjective distress of patients with cancer. A randomized controlled trial was performed on patients with cancer suffering from moderate to severe cancer pain in Yasuj, Iran, in 2019 and 2020. Sixty patients aged 30–60 years who fulfilled the inclusion criteria were selected using a consensus sampling technique. Patients were randomly assigned to EMDR therapy or control groups based on random block allocation. EMDR therapy was administered in six to eight daily 1-hour sessions. The control group received the standard treatment provided by the hospital. A Numeric Pain-Rating Scale (NRS) and the Subjective Units of Disturbance Scale (SUDS) were used to assess pain and subjective distress before and after the intervention in each session. The collected data were analyzed by descriptive statistics, chi-square test, and independent *t* test using Statistical Package for the Social Sciences (SPSS) version 24. The mean pain intensity and subjective distress score in the experimental group before and after the EMDR intervention were significantly reduced ($p < .001$). In the control group, no decreases in NRS and SUDS scores occurred at any time ($p > .05$). Differences in pain scores between the groups were statistically significant ($p < .001$). EMDR can effectively and sustainably reduce the pain and subjective distress experienced by patients with cancer. Thus, EMDR is a recommended therapeutic option to mitigate pain and subjective distress among patients with cancer.

Keywords: pain; subjective distress; cancer; eye movement desensitization and reprocessing (EMDR) therapy

Cancer is a major health problem in countries around the world. In Europe alone, it is estimated that more than 3.4 million people are diagnosed with cancer every year (Ferlay et al., 2013). Despite advances in diagnosis, treatment, and follow-up, cancer remains a cause of stress and anxiety. A wide range of adverse events affects the severity of stress in people with cancer, such as

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diagnosis, tumor detection, severity and prognosis of the disease, invasive treatments, dysfunction of the body, side effects of treatment, occupational and social disability, and, in some cases, recurrence of the disease (Jarero et al., 2015). Additionally, patients with cancer might suffer from posttraumatic symptoms related to their disease (Kangas et al., 2002; National Cancer Institute, 2015), including fears of recurrence, nightmares or flashbacks about the illness or treatments, and a sense of shortened future. Patients with cancer also may experience pain, difficulty sleeping, restlessness, and fatigue (Kangas et al., 2002; National Cancer Institute, 2015). Among these diverse physical and psychological stresses, pain is often stated to be the most important to the patient with a negative impact on quality of life (Mamishi et al., 2006). Over 50% of patients with cancer experience pain, where 40% and 10% have severe and moderate pain, respectively (Black & Hawks, 2005; Callahan et al., 1986). The International Association for the Study of Pain defines pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damages (Maroufi et al., 2016). Physical pain seems to have a substantial psychological component (Maroufi et al., 2016). It is the result of disturbed psychological status, including stress, anxiety, and depression (Passik et al., 1998).

Pain Management for Patients with Cancer

Pain management is one of the main components of palliative care for patients with cancer (Portenoy, 2011). Pain mitigation methods include the use of pharmacological and nonpharmacological methods (Angarita et al., 2014). Pharmacological approaches to mitigate pain have several potential shortcomings. According to the World Health Organization (WHO) statistics, 80% of the population in developing countries does not have access even to essential drugs (Abdi et al., 2016; Shaban et al., 2006). Furthermore, analgesic drugs have various side effects, both physically and psychologically (Shaban et al., 2006). In addition to addiction and dependence, analgesics cause hypotension, weakened vital functions, drowsiness, nausea and vomiting, and even shock (Moradi et al., 2016). Presently, there is a great emphasis on nonpharmacological methods for pain mitigation, such as cognitive behavioral methods (Abdi et al., 2016).

According to WHO (2013), trauma-focused cognitive behavioral therapy (CBT) and eye movement desensitization and reprocessing (EMDR) therapy are the only psychotherapies recommended for children, adolescents, and adults with trauma. These methods support the development of independence in the patient and can be performed by the patients themselves (Moradi et al., 2016). In CBT treatments, the patient finds the possibility to change their thoughts and/or physical reactions to painful sensations (Schneider et al., 2008). CBT is considered an effective treatment for anxiety disorders in the general population. CBT techniques are based on the premise that negative attitudes toward outcomes contribute to anxiety, which leads to avoidance and ineffective coping behaviors. This premise does not automatically apply to patients with cancer, whose disease may cause severe pain, functional impairment, and even death (Faretta et al., 2016; Zeighami et al., 2018).

EMDR Therapy

EMDR therapy is a complex and structured psychotherapeutic method that integrates a range of theoretical orientations, including psychodynamic, cognitive behavioral, psychophysiological, and humanistic psychology, in addition to its unique elements (Maroufi et al., 2016). EMDR therapy is guided by the adaptive information processing (AIP) model (Shapiro, 2018), because it interprets clinical events, predicts successful treatment outcomes, and guides clinical practice. EMDR therapy uses a standardized eight-phase procedure, during which clients focus on elements of the disturbing memory while simultaneously experiencing bilateral stimulation (BLS; Shapiro, 2001, 2004, 2018).

EMDR therapy has considerable effects on controlling pain in patients (Nia et al., 2018; Rostaminejad et al., 2017). EMDR is a therapy method that enables the processing of painful memories caused by negative experiences (Shapiro, 2014). EMDR is thought to desensitize the segments of the memory system that reinforce pain experience (Belon & Vigoda, 2014; Pheasant-Kelly, 2011). Therefore, investigation in EMDR therapy has increased beyond posttraumatic stress disorder (PTSD), and several studies have analyzed the effect of this therapy in other mental health conditions such as psychosis, bipolar disorder, unipolar depression, anxiety disorders, substance use disorders, and chronic back pain (Valiente-Gómez et al., 2017). Several studies have shown that EMDR therapy is an effective treatment for pain (Schneider et al., 2007; Wilensky, 2006). EMDR has been identified as an effective psychotherapy for patients suffering from cancer (Capezzani et al., 2013; Faretta, 2014; Faretta & Borsato, 2016).

EMDR Therapy Administered to Patients with Cancer

In a nonrandomized study, Faretta et al. (2016) evaluated the effectiveness of EMDR therapy compared to a nontrauma-focused CBT intervention in 57 (11 males and 46 females) participants with mixed cancer diagnoses who received 12 sessions of 60 minutes each. Those receiving EMDR therapy showed significant posttreatment improvement, compared to the CBT group, on several measures, including traumatic stress, depression, and anxiety.

Jarero et al. (2015) conducted a pilot study to evaluate the effectiveness of EMDR-Integrative Group Treatment Protocol in Ongoing Traumatic Stress (EMDR-IGTP-OTS) in reducing cancer-related PTSD for adult women. EMDR therapy was administered for 3 consecutive days, twice daily, to 24 adult women diagnosed with different types of cancer (cervical, breast, colon, bladder, and skin) who had PTSD symptoms related to their diagnosis and treatment. Treatment outcomes were compared between patients in the active phase of cancer treatment and those in the follow-up phase, with scores on the Short PTSD Rating Interview at pre- and post-EMDR treatment and at 30- and 90-day follow-ups. Results showed no difference between groups, with significant improvement in both groups for PTSD symptoms and overall subjective well-being.

EMDR therapy was administered to patients with cancer diagnosed with PTSD in a pilot study conducted by Capezzani et al. (2013). The results showed that EMDR therapy was significantly more effective than CBT in reducing the scores on the Impact of Event Scale-Revised and the Clinician-Administered PTSD Scale (CAPS) for both patients in the active phase of cancer treatment and patients in the follow-up phase of cancer treatment. The most significant result obtained from this study is that most of the patients, both in the active and in the follow-up phase of cancer treatment, were able to overcome their PTSD diagnosis after eight sessions of EMDR treatment. On the contrary, most patients in the same phase of active cancer treatment treated with CBT maintained the PTSD diagnosis a month after finishing therapy.

Roberts (2018) conducted a preexperimental case study to explore the efficacy and safety of the EMDR Group Traumatic Episode Protocol (G-TEP) on 35 cancer survivors with various types of cancers in different stages. Participants received two 90-minute G-TEP sessions administered in consecutive days. Repeated measures comparisons of PTSD symptoms, anxiety, and depression revealed significant differences over time and modest changes across the entire sample between posttest and follow-up.

A study conducted by Smith et al. (2011) at Duke Cancer Institute, which had an average of 12.9 years of follow-up, showed that PTSD intensifies with time instead of decreasing. Their conclusion was that time does not heal cancer-related PTSD.

Currently, EMDR therapy is the only therapeutic approach specified to treat PTSD symptoms in cancer patients (Capezzani et al., 2013). Recent studies support the need for research with large samples and randomized clinical trials to examine the viability of providing G-TEP to a cancer survivor. The present study rectified these significant methodological shortcomings.

The research aims: The current study was conducted to investigate the efficacy of EMDR on pain intensity and the subjective distress of patients with cancer.

Method

The present study is a randomized controlled trial conducted on patients with cancer suffering from moderate to severe cancer pain at the Shahid Jalil hospital in Yasuj, Iran, in 2019–2020. The research was initiated following approval of the medical ethics committee of Yasuj University of Medical Sciences (IR.YUMS.REC.1398.074 on 13/8/2019), registration in Iranian Registry of Clinical Trials system (IRCT20190822044581N1 on 20/09/2019), official receipt of permission from the relevant authorities, and written informed consent from the participants. Subject participation in the research was not compulsory and participant information was confidential.

Participants

Yasuj is a small and impoverished city, and residents with major healthcare needs, such as cancer, typically travel outside the province for treatment and follow-up. Thus, oncology patients suffering from moderate to severe pain were rare. After a recruitment period of 75 days, the sample size estimated by the calculation formula was not achieved from this limited population. Within the recruitment period, 60 out of 74 patients with cancer in the oncology clinic and the chemotherapeutic Department of the Shahid Jalili aged 30–60 years were enrolled who fulfilled the inclusion criteria using a consensus sampling technique (Figure 1). The inclusion criteria were as follows: diagnosis of cancer that lasted for at least 6 months,

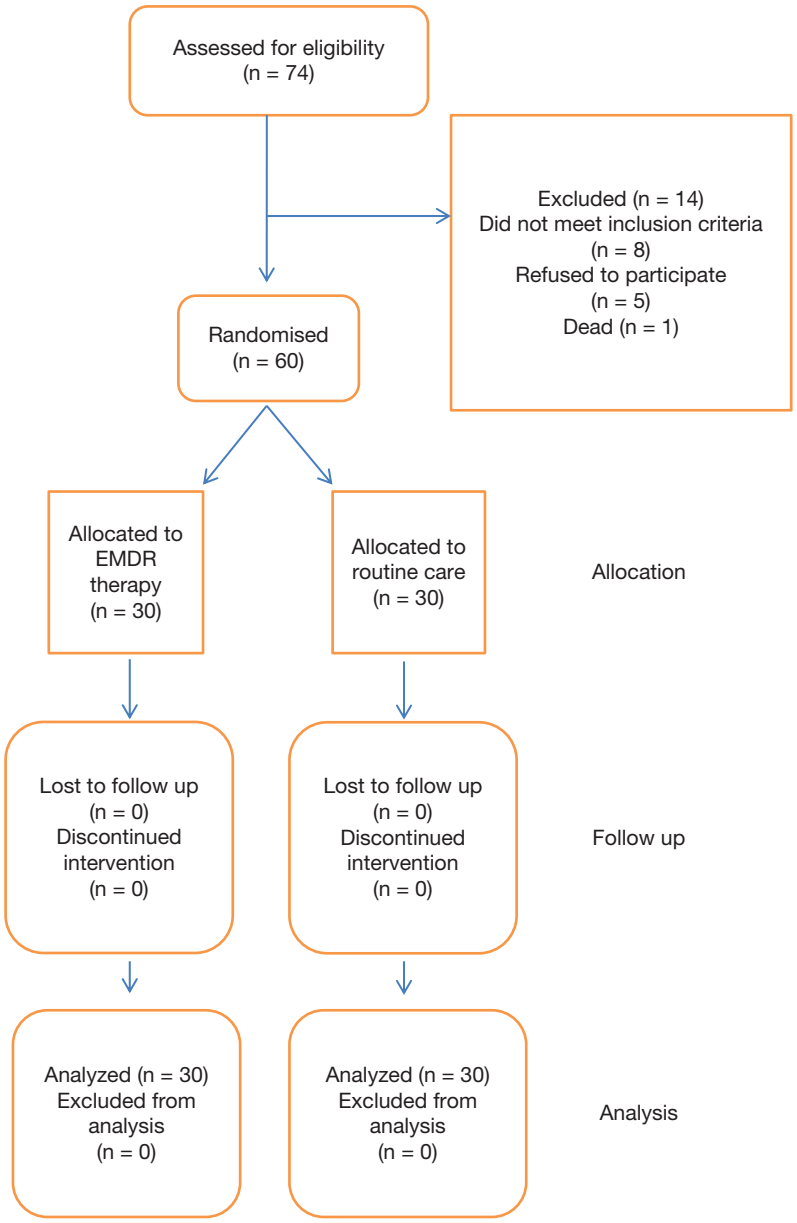

Figure 1. The consort flow diagram.

hemodynamic stability (blood pressure, heart rate), moderate (score 4–6) to severe pain (score 7–10) resulting from cancer based on the Numeric Pain-Rating Scale (NRS) at least 4 days per week, literacy, no visual problems, no history of drug abuse, and no psychological disorders (according to a psychiatrist). Exclusion criteria were lack of cooperation with the therapist or unwillingness to cooperate during the implementation.

Random Block Allocation

Participants were randomly assigned to the experimental and control groups based on random block allocation (30 patients in experimental and 30 in the control groups). The number of samples per block was calculated as 4 by multiplying the number of study groups by 2 ($2 \times 2 = 4$). The number of blocks generated from all possible orders was calculated by the factorial of each block sample size ($4! = 4 \times 3 \times 2 \times 1 = 24$). The sample size was estimated as 60 by matching 13 random numbers generated by sample randomizer with the number of blocks. Numbers 1–60 were allocated to the experimental and control groups, and the random allocation list was edited. This was performed by the researchers. To avoid bias, the groups were selected based on random block allocation before patients entered the room. It should be

noted that researchers were not aware of patients and their pain after patients entered the room, and based on random block allocation were assigned to the intervention and control groups. After assigning patients to the groups, researchers and patients became aware of the groups.

Intervention

In the experimental group, the EMDR treatment was performed in six to eight 1-hour sessions for each patient daily (one session per day), individually in the counseling room. In each session the Subjective Units of Disturbance Scale (SUDS) and NRS were completed by the patients before and after the intervention and in the 2-month follow-up. The sessions were conducted by expert psychotherapists with 5–10 years of experience with EMDR therapy. The researcher determined the focus of participants during the processing stage, including (a) the disturbing memories due to cancer and its pain and (b) the sensation of pain caused by cancer. Participants in the control group received routine care of the hospital (medication and intravenous therapy if necessary) but received no EMDR intervention. For the control group, demographic characteristic questionnaires, NRS, and SUDS were completed in an initial session and NRS and SUDS were recompleted, all of without any intervention.

The Number of Intervention Sessions. A systematic review showed that 1–12 sessions of EMDR therapy were used to treat chronic pain (Van Rood & De Roos, 2009). As a result, the number of treatment sessions for this study was set at 6–8. The duration of the EMDR therapy sessions in previous studies was 30–90 minutes (Valedi et al., 2019). In the present study, the length of each session was 1 hour for all patients in the experimental group.

Description of EMDR Therapy. EMDR therapy (Shapiro, 2018) is a psychotherapeutic comprehensive approach that has been extensively researched and proven effective for the treatment of trauma. The EMDR therapy for patients with cancer followed the eight phases of the standard protocol, with particular attention to the aspects linked with the cancer experience. The treatment focused only on traumatic memories related to the oncological disease and its pain and did not address any previous traumatic events. Participant history was assessed and treatment was planned in phase 1. Phase 2 focused on educating participants about both the EMDR approach and the cancer event, with a specific emphasis on the link between the mind and the body and how traumatic experience may negatively influence the present and future. After that, the psychotherapist proceeded with the installation of a safe place (Shapiro, 2001; Shapiro & Maxfield, 2002). The third phase was dedicated to identification of a disturbing image in memory (target) and the associated negative belief. The client was asked to hold both the image and negative cognition in their mind while rating it from 0 to 10 using the SUDS. Psychotherapist and patient identified which aspects of the target would be processed. The patient then selected a statement which expressed a negative self-belief associated with the event. Some typical negative cognitions in the psychooncology context are associated with safety, guilt, unbearable pain, and control. Then the patient chose a positive self-statement (positive cognition [PC]). This statement incorporated an internal sense of safety, personal value, or control (e.g., "I am lovable," "I can face cancer or cancer treatments," "I can control my body, my emotions, and pain"). The fourth phase entailed desensitization and BLS. The therapist asked the patient to think of the disturbing images while simultaneously performing BLS, including alternating eye movements to left and right almost at the speed of two movements per second. A complex of desensitization was composed of 24–36 sets of horizontal finger movements from left to right and vice versa. After each set, the patient briefly reported what came to mind. This procedure was continued until the disturbing memories were no longer disturbing. The goal of desensitization was to decrease SUD to 0. After verifying the stability of the PC identified by the patient during the assessment, the therapist proceeded to install it. Phases 6–8 were similar to the standard protocol (Faretta, 2014; Shapiro, 2001).

Measures and Data Analysis

Data were analyzed by chi-square and independent *t* test. Statistical analysis was carried out using Statistical Package for the Social Sciences (SPSS) version 24. The significance level was considered as $p < .05$. Data are reported as the mean ± standard deviation for each group. For data collection, three instruments, including the questionnaire of demographic characteristics, the NRS, and SUDS, were used.

The Questionnaire of Demographic Characteristics. The demographics were age, gender, level of education, marital status, type of cancer, duration of having cancer, metastasis and the target metastasis organ, the time past pain initiation, the stage of growth or

development of tumor, and type of pain. This questionnaire was developed based on the objectives of the study.

Numeric Pain-Rating Scale (Jensen et al., 1986). The NRS was applied to measure pain sensitivity. It is a self-report questionnaire in which the pain intensity ranges from 0 to 10, with 0 representing no pain, 1–3 indicating mild pain, 4–6 showing moderate pain, and >7 signaling severe pain, and 10 indicating the maximum pain intensity (De Roos et al., 2010). The reliability, validity, and sensitivity of this instrument to therapeutic effects have been confirmed (Kashikar-Zuck et al., 1997). In the Persian language, NRS has been proven as a reliable and valid instrument for assessing therapeutic effects on pain intensity (Rostaminejad et al., 2017).

The Subjective Units of Disturbance Scale (Shapiro, 2001). This Likert scale is a self-report scale introduced by Wolpe. Its score range is between 0 and 10. The person evaluates and reports the extent of their distress where 0 indicates no subjective distress, 1–3 indicates mild distress, 4–6 indicates moderate distress, and 7–10 indicates severe distress (Moradi et al., 2016; Rostaminejad et al., 2017). This scale has been used in almost all behavioral therapy techniques and is extensively used in clinical practice as well. This scale can be used at all stages of treatment (pretreatment, during treatment, posttreatment, and follow-up).

TABLE 1. Demographic Variables in Patients With Cancer in the Experimental and Control Groups

		Intervention		Control		Chi-Square Test Results
		NO	Percent	NO	Percent	
Gender	Male	16	53.30	16	53.30	
	Female	14	46.70	14	46.70	0.60
Marital Status	Single	7	23.30	6	20.00	
	Married	19	63.30	20	66.60	0.95
	Widow	4	13.30	4	13.30	
Educational level	Primary	12	40.00	11	36.70	
	High school	10	33.30	11	36.70	0.95
	University	8	26.70	8	26.70	
Metastasis	Yes	10	33.30	4	13.30	
	NO	20	66.70	26	86.70	0.06
Treatment type	Chemotherapy	19	63.30	19	63.30	
	Chemotherapy + radiotherapy	9	30.00	10	33.30	0.82
	Chemotherapy + hormone therapy	2	6.70	1	3.30	
Drug	Indomethacin	8	26.60	7	23.30	
	Ibuprofen	6	20.00	7	23.30	
	Methylprednisolone	2	6.66	3	10.00	0.50
	Gabapentin	5	16.60	4	13.30	
	Morphine	4	13.30	4	13.30	
	Codeine paracetamol + indomethacin	5	16.60	5	16.60	
	Granisetron	22	73.30	21	70.00	
Pain type	Visceral	16	53.30	17	56.60	
	Bone	9	30.00	9	30.00	0.41
	Neuropathy	5	16.70	4	13.30	
Cancer stage	Stage 1	19	36.7	18	60.00	
	Stage 2	4	13.30	5	16.60	0.11
	Stage 3	7	23.30	7	23.30	

Results

The mean age and standard deviation of participants in experimental and control groups were 50.30 ± 7.80 and 51.50 ± 7.84 years, respectively. The patients suffered from various types of cancer (colon, liver, stomach, prostate, breast, spleen, skin, uterus, lung, and ovarian). The maximum frequency of diagnosed cancers among them was breast (n = 11, 18.3%), while ovarian cancer had the minimum frequency (n = 2, 3.3%). Fourteen (23.30%) patients had metastatic tumors. The sites of metastasis included bone, liver, stomach, uterus, and lungs. The most common site of metastasis was the liver (n = 6, 10%), while the lung (n = 1, 1.7%) was the least common. The patients suffered from different types of pain, including visceral, bone, and neuropathic pain. For pain mitigation, they used various drugs, including opioids, nonsteroidal anti-inflammatory drugs, steroidal drugs, and gabapentin. Tumor progression assessed at the 2-month follow-up showed that 17 (56.7%) patients progressed to stage III and their condition worsened. Also, 32 (53.4%) participants reported a change in the type of pain compared to the beginning of the study. The results showed that the two groups did not differ significantly in terms of demographic characteristics including age, gender, level of education, marital status, type of cancer, duration of having cancer, type of pain, duration of having pain, type of drug used, type of treatment underwent, growth and progression of the tumor (stage), and site of metastasis ($p > .05$; Table 1).

The mean score and standard deviation (mean ± SD) for pain intensity and subjective distress are presented in Tables 2, respectively, for experimental and control groups in the pre- and posttest, as well as the 2-month follow-up.

Pain Intensity

The mean and standard deviation of pain intensity and subjective distress at pretest, posttest, and the 2-month follow-up is provided in Table 2. At the pretest, the mean and standard deviation of pain intensity reported by participants in the experimental and

TABLE 2. The Mean and Standard Deviation of Pain Intensity and Subjective Distress in the Pretest, Posttest, and the Follow-up in the Experimental and Control Groups

Time	Intervention Mean ± *SD*	Control Mean ± *SD*	*p*-Value
Pain pretest	9.46 ± 0.73	9.53 ± 0.73	.72
Pain posttest	3.03 ± 1.51	8.83 ± 0.98	.001
Pain follow-up	3.70 ± 1.57	9.70 ± 0.59	.001
SUD pretest	9.76 ± 0.56	9.70 ± 0.53	.64
SUD posttest	3.26 ± 1.52	9.70 ± 0.59	.001
SUD follow-up	4.03 ± 1.62	9.86 ± 0.43	.001

Note. SD = standard deviation; SUD = Subjective Units of Disturbance.

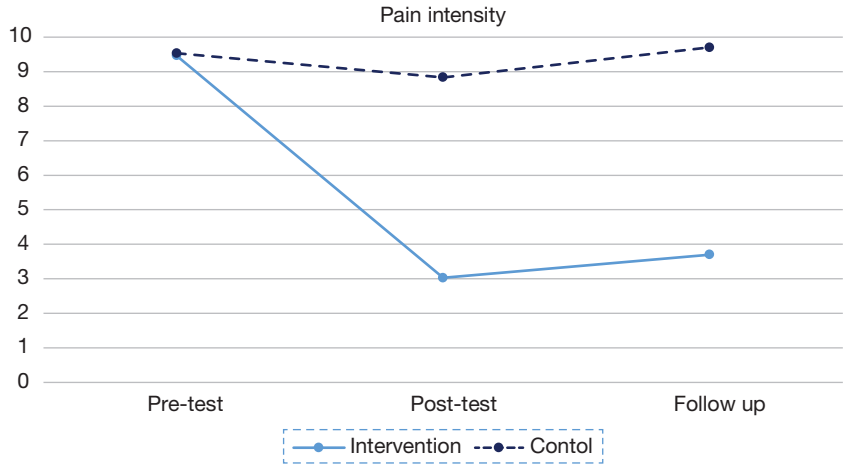

Figure 2. Variation of pain intensity from pretest to posttest and follow-up in the experimental and control groups.

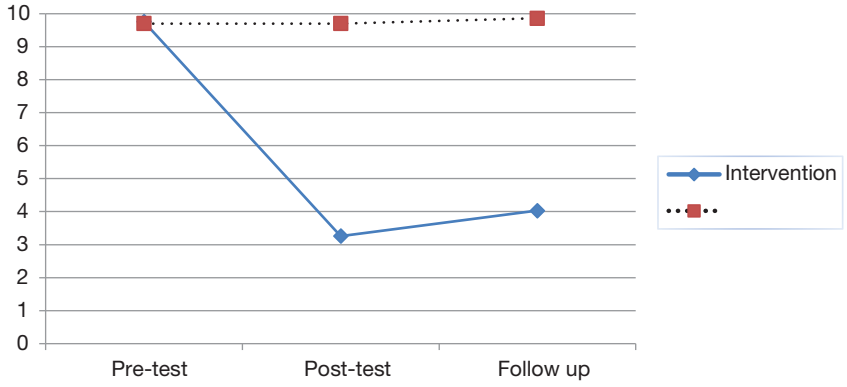

Figure 3. Variation of Subjective Units of Disturbance (SUD) from pretest to posttest and follow-up in the experimental and control groups.

control groups were 9.46 ± 0.73 and 9.53 ± 0.73, respectively, which was not significantly different by independent *t* test ($p > .05$). Pain intensity was significantly reduced in the experimental group compared to the control group at the time of the posttest and follow-up ($p = .001$). Figure 2 represents the variations of pain intensity from pre- to posttest and follow-up in the experimental and control groups.

Subjective Distress

Table 2 provides the mean participant score and standard deviation of SUD at the pretest, posttest, and the 2-month follow-up. At the pretest, the mean and standard deviation of subjective distress in the experimental and control group were 9.76 ± 0.56 and 9.70 ± 0.53, respectively, which had no significant difference ($p > .05$). A significant reduction in subjective distress was reported by participants in the experimental group relative to the control group at the posttest and follow-up ($p = .001$). Figure 3 represents variations of subjective distress from pretest to posttest and follow-up in the experimental and control groups.

Discussion

The present study was carried out to investigate the efficacy of EMDR for the mitigation of pain intensity and subjective distress among patients with cancer. The results showed that EMDR could be effective for mitigating the pain intensity and subjective distress in patients with cancer even after a short intervention. Importantly, the current study shows an EMDR-associated decrease in average pain intensity. The mean SUD score of patients with cancer in the experimental group decreased significantly after the intervention compared to the pretest and the control group. This significant reduction was maintained at the 2-month follow-up. Unpleasant traumatic memories of patients in the experimental group were treated successfully with EMDR therapy. The pre–post difference was not significant in the control group patients, and they still suffered from the high intensity of pain. Although the pain intensity reported by patients in the EMDR group rose slightly in the 2 months following the intervention, participants still experienced a low level of pain. This slight increase in pain intensity might be attributed to changes in the type of pain or tumor progression observed after 2 months in some patients.

Painful memories are a major factor in the persistence of pain and, when left untreated, might negatively impact pain (Belon & Vigoda, 2014; Pheasant-Kelly, 2011). The EMDR approach is guided by the AIP model (Shapiro, 2001), which posits that most psychopathology is caused by unprocessed disturbing memories. A central part of the EMDR procedure consists of the patient recalling traumatic memories while simultaneously making horizontal eye movements or receiving other kinds of BLS, such as alternating left and right beeps or tapping. BLS is thought to elicit a sort of accelerated information processing that desensitizes the most disturbing aspects of traumatic memories and promotes their integration within the personality system (Faretta et al., 2016). It seems that the EMDR therapy method is highly suitable for treating unpleasant traumatic memories, a process that can lead to a decrease or elimination of pain sensation (Pheasant-Kelly, 2011; Shapiro, 2014). According to the adaptive information-processing model that guides EMDR therapy, painful memories are a key factor in maintaining pain, and if patients' memories are processed, their pain will be eliminated or significantly reduced. Based on the

information-processing model, both the sensory and the emotional components of the stored unpleasant memories should be processed to alleviate pain (Rostaminejad et al., 2017).

Chronic pain is often characterized by high subjective distress, and there is an important interaction between subjective distress and the patients' pain experience. Subjective distress can be an emotional component of pain; also, pain can be a consequence of subjective distress. In general, it can be said that pain and subjective distress are interrelated (Moradi et al., 2016; Rostaminejad et al., 2017). The mechanism of EMDR therapy for chronic pain is consistent with the AIP model, which indicates that the processing of etiological memories can result in the complete and long-lasting cessation of previously unremitting pain. Since pain occurs partially as a result of untreated neurobiological stored memories associated with the source of the pain, it follows that treatment of pain with EMDR allows for the processing and resolution of stored memories and consequent desensitization of pain (Schneider et al., 2008; Schneider et al., 2007). In other words, the trauma is stored with the images, thoughts, emotions, and physical sensations that were experienced at the time of events; processing the memory can eliminate or reduce the negative physical sensation associated with the event (Shapiro, 2014). EMDR therapy has been shown to resolve the memories of events that triggered or maintained the present pain (Rostaminejad et al., 2017; Schneider et al., 2008). The results of this study are therefore consistent with studies which indicate that EMDR is effective in treating a range of symptoms and disorders, such as anxiety, depression, distress, migraine headaches, medically unexplained symptoms, phantom limb pain, and chronic pain (Gerhardt et al., 2013; Grant, 2014; Schneider et al., 2008; Valedi et al., 2019). These studies show that processing these pain memories using the standard EMDR protocol can lead to a clinically relevant reduction in the physical and psychological symptoms of pain, such as subjective distress.

Limitations

Due to the limited population, it was not possible to select the number of samples based on the calculation formula used to estimate sample size. Thus, future research should use larger samples to better investigate and compare the pain intensity among patients with cancer. Follow-up was limited to 2 months; a 1-year follow-up would have been optimal. However, given the high probability of attrition in a 1-year study period and the priority of gathering preliminary data on EMDR therapy with cancer survivors, this option was not pursued. We also chose a modest number of EMDR therapy sessions with minimal time commitment, in part to minimize the burden on participants.

Conclusion

The results obtained from the current study indicate that EMDR therapy is an effective approach for pain mitigation in cancer patients. This study allows us to draw some preliminary conclusions on the application of the EMDR therapy protocol and the evaluation of its effectiveness. Further development of EMDR therapy in an oncology setting requires a more substantial production of research, demonstrating the ability of this approach to appropriately integrate the cancer story into the life story of the person. Efficacy of the EMDR therapy method in treating patients suffering from other disorders that cause pain warrants further investigation.

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