

This file has been cleaned of potential threats.

To view the reconstructed contents, please SCROLL DOWN to next page.

## Effect of Eye movement desensitization and reprocessing (EMDR) technique on psychological status and sleep quality among depressed patients

Mona Abd EL Reheem El Nager<sup>(1)</sup> & Sabah Hassan El-Amrosy<sup>(2)</sup>

(1) Assist. Prof. of Psychiatric Nursing, Faculty of Nursing, Menoufia University, Egypt

(2) Assist. Prof. of Psychiatric Nursing, Faculty of Nursing, Menoufia University, Egypt

Corresponding Author: Mona Abd EL Reheem El Nager

**Abstract:** Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, poor concentration, and tendency to suicide, which can be seen in anybody regardless of age, gender, race, or socio-economic status. Eye movement desensitization and reprocessing [EMDR] is an innovative, evidence based and effective psychotherapy for post-traumatic stress disorder [PTSD], as with other psychotherapies. Also EMDR technique was more efficient in reducing depression symptoms. The study aimed to evaluate effect of eye movement desensitization and reprocessing technique on psychological status and sleep quality among depressed patients. Quasi-experimental design with pre-posttest was used to achieve the aim of this study. The study was conducted at Meet Khalaf Psychiatric Hospital that related to The Ministry of Health. A purposive sample of 32 depressed patients was used. Data were collected using the hospital anxiety and depression scale and sleep quality scale. The results revealed that the studied patients were in age group (18- 68) years and the mean age is 36.31 years, 62.5% were male, 53.1% was single, 53.1% of them were unemployed. There was highly statistically significant difference between pre and post eye movement desensitization and reprocessing technique regarding depression, anxiety and sleep score levels. In conclusion, one can say that the Implementation of eye movement desensitization and reprocessing technique with depressed patients has a positive effect on improving psychological status and sleep quality. Based on the results of this study we recommend use of eye movement desensitization and reprocessing technique for patients with depression to reduce anxiety and depression and improve sleep quality.

**Keywords:** anxiety, depression, sleep quality, eye movement

Date of Submission: 14-06-2019

Date of acceptance: 29-06-2019

### I. Introduction

Depression is a severe mental disorder that challenges mental health systems worldwide as the success rates of all established treatments are limited [1]. The World Health Organization has named depression as one of the most frequent and disabling diagnoses in the world, affecting at least 350 million people worldwide, almost one million of whom commit suicide each year [2]. Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicide, a tragic fatality associated with the loss of about 850 000 lives every year [3].

Anxiety is state of feeling of apprehension, uneasiness, agitation, uncertainty, and fear resulting from anticipation of a threat or danger, usually of intrapsychic origin, whose source is generally unknown or unrecognized [4]. Depression and anxiety are common psychiatric conditions that frequently co-occur, disabling the person further [5]. There is a very strong association between sleep disturbance and major depression. The link between the two is so fundamental that some researchers have suggested that a diagnosis of depression in the absence of sleep complaints should be made with caution. Sleep disturbance is one of the key symptoms of the disease, may be the reason that depressed patients first seek help, and is one of the few proven risk factors for suicide [6].

Eye movement desensitization and reprocessing (EMDR) is a form of Psychotherapy was developed by Francine Shapiro, and is a complex and specific desensitizing treatment method. EMDR therapy desensitizes patients to anxiety and integrates information processing. Adaptive information processing is the theoretical framework for EMDR, because it addresses factors related to both pathology and personality development. A key component of EMDR therapy is bilateral stimulation, usually therapist-guided eye movements, which

initiate information processing on the targeted memory. This component has been found to significantly contribute to positive treatment [7].

### **Significance of the study**

Depression is a significant public health concern worldwide and has been ranked as one of the illnesses having the greatest burden for individuals, families, and society [8]. A representative randomized sample from 27 sites in Dakahlia Governorate (Egypt) revealed that the most frequent diagnosis is the dysthymic disorder (3.4%), followed by generalized anxiety disorder (1.7%) and major depressive disorder (1.5%) [9].

Eye movement desensitization and reprocessing [EMDR] is an innovative, evidence based and effective psychotherapy for post-traumatic stress disorder [PTSD], as with other psychotherapies. Many sources seeing EMDR as a practical, cost-effective, noninvasive, and, therefore, appropriate treatment for PTSD [10]. The results of some studies by [11] illustrated that EMDR is more effective in treating patients' depression and anxiety than pharmacological therapy. Also other studies conducted by [12] revealed that the EMDR is an efficient method for treating and reducing depression in patients with myocardial infarction and the critical care nurses can use this new and effective method for treating depression. Also due to the lack of studies in the use of eye movement desensitization and reprocessing technique in Egypt in the field of medicine and nursing, especially psychiatric nursing was a passion and love to be applied to patients with depression to evaluate effect of eye movement desensitization and reprocessing technique on psychological status and sleep quality among depressed patients.

### **Theoretical definitions:**

**Anxiety** is state of feeling of apprehension, uneasiness, agitation, uncertainty, and fear resulting from anticipation of a threat or danger, usually of intrapsychic origin, whose source is generally unknown or unrecognized [4].

**Depression** is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration. [3].

**Sleep quality** is defined as one's satisfaction of the sleep experience, integrating aspects of sleep initiation, sleep maintenance, sleep quantity, and refreshment upon awakening. [13].

### **Operational Definition**

**Psychological status** (anxiety and depression) operationally defined by the mean score of anxiety and depression obtained by hospital anxiety and depression scale (HAD Scale) developed by [14]

**Sleep quality** operationally defined by the mean score obtained by the sleep quality scale developed by [15]

## **II. Material and Methods**

### **The Aim of the Study**

The aim of the study was to evaluate effect of eye movement desensitization and reprocessing technique on Psychological status and sleep quality among depressed patients.

### **Research Hypothesis**

Application of eye movement desensitization and reprocessing technique on depressed patients will improve their Psychological status and sleep quality.

### **Research Design**

Quasi-experimental design with pre-posttest was used to achieve the aim of this study.

### **Research Setting**

The study was conducted at Meet Khalaf Psychiatric Hospital that related to The Ministry of Health

### **Subjects-**

A Purposive sample of (32) depressed patients was selected from the chosen setting outpatient clinics.

### **Inclusion Criteria**

- Patients who were diagnosed by psychiatrists as depressed patient.
- Patient aged from 18 year and above under treatment therapy
- Both sexes.

### **Exclusion Criteria**

The following were used as exclusion criteria: (1) use of any medication that could interfere with sleep architecture; (2); use of any medication that could increase rapid eye movements; (3) clinical and neurologic disorders; (4) past history of neurologic, endocrine or hepatic disease; (5) dissociative disorders or psychosis; and (6) history of sleep disorder.

### **Tools of the study:**

**Tool (1): Semi-structured interviewing questionnaire:** It was developed by the researchers to assess personal characteristics of the studied subject as age, sex, education, occupation, income, smoking....

**Tool (2): Hospital anxiety and depression scale (HAD Scale).**

- It was developed by [14] to assess anxiety and depression. It contains 14 items and consists of two subscales: 7 items for depression and 7 items for anxiety. Each item is rated on four likert scale (0-3) giving maximum scores of 21 for anxiety and depression. Score from 0-7 on either subscale considered normal, 8-10 represents mild, 11-14 represents moderate and 15-21 represents severe.

**Tool (3):- Sleep Quality scale (SQS).**

- It was developed by [15] consisting of 28 items, the SQS evaluates six domains of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty waking, and sleep satisfaction.

- Scoring using a four-point, Likert-type scale, respondents indicate how frequently they exhibit certain sleep behaviors (0 = "few," 1 = "sometimes," 2 = "often," and 3 = "almost always"). Total scores can range from 0 to 84, with higher scores denoting more acute sleep problem

### **Content validity and reliability of tools:**

Hospital anxiety and depression scale and sleep quality scale were translated by the researcher to arabic language and tested for its content validity by group of five experts in the psychiatric and community medicine and nursing. The required modification was carried out accordingly. Then test-retest reliability was applied. The tools revealed reliable at 0.82 for tool (2) and at 0.83 for tool (3).

### **Pilot study:**

A pilot study was undertaken after the development of the instruments and before starting the data collection. It was conducted on 10 % of the total sample using instruments (2) and (3) which noted before. The purpose of the pilot study was to test the applicability, feasibility and clarity of the instruments. In addition, it served to estimate the approximate time required for interviewing the patients as well as to find out any problems that might interfere with data collection. The patients who shared in pilot study were not included in the study sample.

### **Procedure of data collection:**

#### **Preparatory phase:**

- This phase include reviewing of relevant literature and different studies related to the topic of research, using textbooks, article magazines, periodicals, and internet research to get a clear picture of all aspects related to the research topic.

- Before the beginning of the research, the researchers took a training course on eye movement desensitization and reprocessing technique in the center of psychiatry Tanta University. Six hours per day for three days, theoretical and practical training.

**Administrative approval:** An official letters were issued from the Faculty of Nursing Menofia University, and send to the directors of Meet Khalaf Psychiatric Hospital, after explanation of the aim of the study to get their approval to carry out this study.

**Ethical considerations:** An oral consent was taken from each participant in the study after explaining the purpose and the importance of the study. The subjects who agreed to participate in the study were informed that the information they provided during the study would be kept confidential. Each participant was informed that participation in the study was voluntary, and she could withdraw from the study whenever she decided to do without giving a reason and each one was given the opportunity to freely refuse participation. They were free to ask any question about the study details.

#### **Data collection phase:**

- Data collection for the study was carried out in the period from October 2018 to January 2019

- The researcher introduced herself to the participant and a brief description of the purpose of the study and the type of questionnaire required to fill was given to each participant.

- The researcher collected data through interviewing with every participant who agreed voluntarily to participate in the study

- The selection of the technique for this study was guided by [16] who illustrated that EMDR technique is a manualized 8-phase psychotherapy approach based on the Adaptive Information Processing (AIP) model. The eight phases of EMDR technique consist of client history and treatment planning (Phase 1), preparation (Phase 2), assessment (Phase 3), desensitization and reprocessing (Phase 4), installation (Phase 5), body scan (Phase 6), closure (Phase 7), and reevaluation (Phase 8), so the researcher divided the patients into four groups every group

consists of eight patients, Each weekly session lasted approximately 90 min, and subjects attended a minimum of three to a maximum of 8 sessions, depending on their self-report improvement during the reprocessing and resolution of the traumatic experience.

#### **The Phases of EMDR session**

##### **- Client history and treatment planning (Phase 1)**

1. The researcher getting a full history and conducting appropriate assessment.
2. The researcher and client work together to identify targets for treatment. Targets include past memories, current triggers and future goals.

##### **-Preparation (Phase 2)**

1. The researcher offers an explanation for the treatment, and introduces the client to the procedures, practicing the eye movement.
2. The researcher ensures that the client has adequate resources for affect management, leading the client through the Safe/Calm Place exercise.

##### **-Assessment (Phase 3)**

1. The researcher activates the memory that is being targeted in the session, by identifying and assessing each of the memory components: image, cognition, affect and body sensation.

##### **-Desensitization and reprocessing (Phase 4),**

1. Patients rate their subjective level of distress.
2. Ask patient to think about the traumatic memory and related negative beliefs, emotions, or somatic sensations.
3. The researcher, using a hand wand or finger, asks the patient to self-reference the memory and to visually track the rapid back and forth movement made in front of the patient's face.
4. The finger movements proceed from right to left in sets of 12–24 strokes, at a speed of approximately 12–14 strokes per second.

##### **-Installation (Phase 5)**

1. Patient is asked to block out the negative image and to think of positive thoughts while repeating the eye movements.
2. After each set, the patient again rates his/her subjective level of distress, reporting any changes in the image, memory, feeling, or somatic sensations.
3. Sets continue until the subjective level of distress decreases, approaching normal, usually within 12–24 sets.
4. Patient imagines a scene or event and associates it with comforting thoughts, again while following the therapist's finger movements

##### **-Body scans (Phase 6)**

1. Patient is asked to observe their physical response while thinking of the incident and the positive cognition, and identify any residual somatic distress. If the client reports any disturbance, standardized procedures are used to process it.

##### **-Closure (Phase 7)**

1. The researcher using closure phase to end the session. If the targeted memory was not fully processed in the session, specific instructions and techniques are used to provide containment and ensure safety until the next session.

##### **-Reevaluation (Phase 8)**

1. The researcher evaluates the client's current psychological state, whether treatment effects have maintained, what memories may have emerged since the last session, and works with the client to identify targets for the current session.

#### **Statistical analysis:**

Data were collected, tabulated, statistically analyzed using an IBM personal computer with Statistical Package of Social Science (SPSS) version 20 where the following statistics were applied.

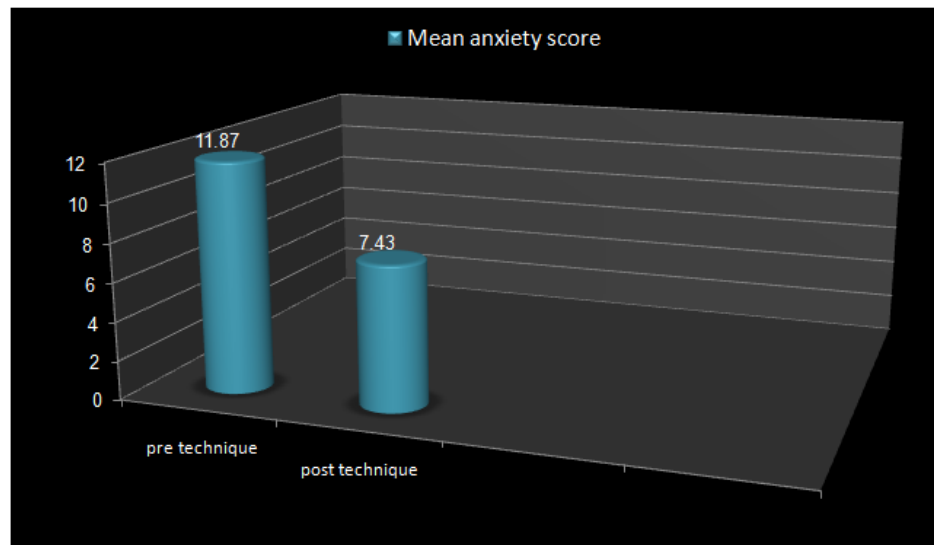
- a- **Descriptive statistics:** in which quantitative data were presented in the form of mean ( ), standard deviation (SD), range, and qualitative data were presented in the form numbers and percentages.
- b- **Analytical statistics:** used to measure association between studied factors and the targeted disease. The used tests of significance included:
- c- **Pearson correlation (r):** is a test used to measure the association between two quantitative variables.
- d- **Spearman correlation (r):** is a test used to measure the association between qualitative and quantitative data.

## II. Results

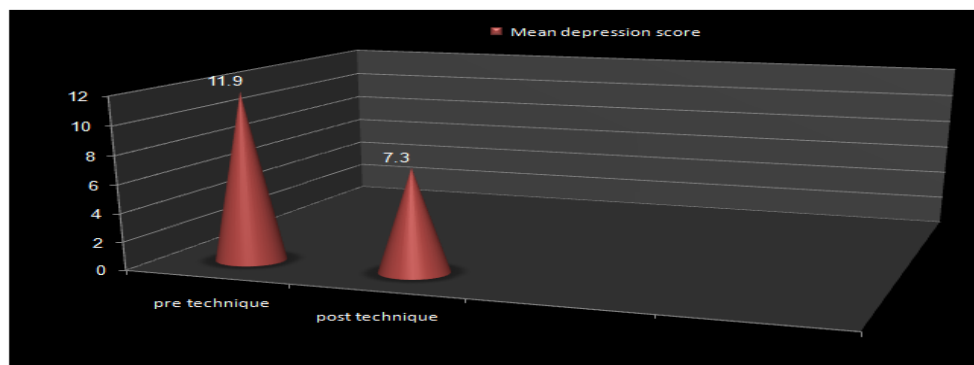
Regarding to basic data among studied group, as shown in **(table 1)**, it was found that, the studied patients were in age group (18-68) years and the mean age is 36.31years, 43.8% had intermediate education, 62.5% were male, the highest frequency (53.1%) was single, 53.1% of them were unemployed, according to income, 62.5% had not enough income. the result in **(figure1)** illustrated that, there was a highly statistically significant difference found in total mean anxiety score among the studied patients with depressions pre and post application of EMDR( $p<0.05$ ). according to depression score, as shown in **(figure 2)**, it was found that there was a highly statistically significant difference found in total mean depression score among the studied patients with depressions pre and post application of EMDR( $p<0.05$ ). concerning to sleep score **(figure 3)** revealed that, there was a highly statistically significant difference pre and post application of EMDR( $p<0.05$ ). the result in **(table 2)** illustrated that, there was statically significant positive correlation between anxiety and depression pre and post application of EMDR.i.e. when anxiety increase depression will increase ( $p<0.05$ ). there was statically significant positive correlation between anxiety and sleep pre application of EMDR only, while there was no statically significant correlation between sleep and depression pre and post application of EMDR.as shown in **(table 3)**, it was found that, there was negative correlation between age, anxiety, depression and sleep but not significant ( $p<0.05$ ). **table4** illustrated that, there was a statistically significant difference between all socio-demographic characteristic and total anxiety score except with educational level. **Table5**, illustrated that, there was a statistically significant difference between all socio-demographic characteristic and total depression score except with educational level and occupation. **Table6**, illustrated that, there was no a statistically significant difference between all socio-demographic characteristic and total sleep score.

**Table (1):** Basic data of the studied patients with depression (n=32).

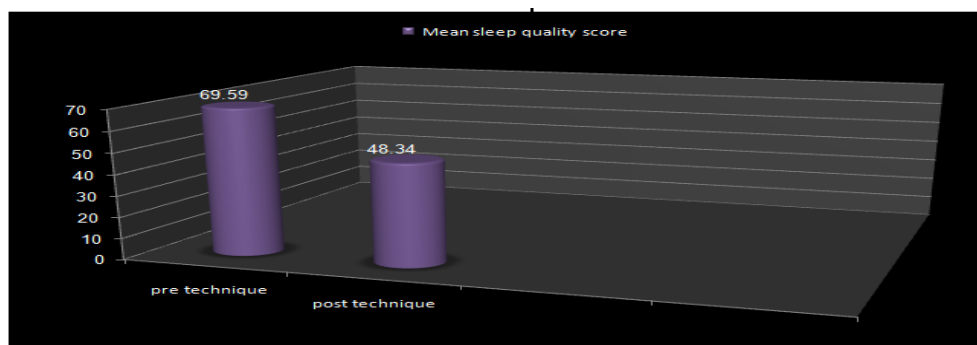
| Variables                 | The studied patients with depression (n=32) |      |
|---------------------------|---|------|
|                           | n   | %    |
| <b>Sex:</b>               |   |      |
| Males                     | 20  | 62.5 |
| Females                   | 12  | 37.5 |
| <b>Age (years):</b>       |   |      |
| Range                     | 18-68                                       |      |
| Mean±SD                   | 36.31±14.87                                 |      |
| <b>Job:</b>               |   |      |
| Employees                 | 15  | 46.9 |
| Not working               | 17  | 53.1 |
| <b>Marital status:</b>    |   |      |
| Single                    | 17  | 53.1 |
| Married                   | 13  | 40.6 |
| Divorced                  | 2   | 6.2  |
| <b>Educational level:</b> |   |      |
| Illiterate                | 3   | 9.4  |
| Primary                   | 7   | 21.9 |
| Intermediate edu.         | 14  | 43.8 |
| High edu.                 | 8   | 25   |
| <b>Income:</b>            |   |      |
| Enough                    | 12  | 37.5 |
| Not enough                | 20  | 62.5 |



**Figure (1):** Total mean anxiety score among the studied patients with depressions pre and post application of EMDR technique(n=32).



**Figure (2):** Total meansdepression score among the studied patients with depressions pre and post application of EMDRtechnique(n=32).



**Figure (3):** Total meanssleep score among the studied patients with depressions pre and post application of EMDRtechnique(n=32).

**Table (2)** Pearson correlation between depression, anxiety and sleep

| Items               | Pre   |       | post  |       |
|---------------------|-------|-------|-------|-------|
|                     | R     | Sig.  | R     | Sig   |
| Anxiety –depression | 0.428 | 0.014 | 0.594 | 0.00  |
| Anxiety-sleep       | 0.523 | 0.002 | 0.310 | 0.084 |
| Depression- sleep   | 0.134 | 0.464 | 0.099 | 0.591 |

**Table (3)** Pearson correlation between depression, anxiety, sleep and age

| Items           | Pre    |       | post   |       |
|-----------------|--------|-------|--------|-------|
|                 | R      | Sig.  | R      | Sig   |
| Anxiety -age    | -0.111 | 0.646 | -0.320 | 0.074 |
| sleep -age      | -0.285 | 0.114 | -0.205 | 0.261 |
| Depression- age | -0.167 | 0.335 | -0.318 | 0.076 |

**Table (4):** Spearman Correlation between total anxietyscore and socio demographic characteristics of studied group (N=32)

|                   | Anxiety    |         |
|-------------------|------------|---------|
|                   | Test value | P value |
| Gender            | 0.600      | 0.000   |
| Marital status    | -0.396     | 0.025   |
| Educational level | 0.200      | 0.272   |
| Occupation        | 0.519      | 0.002   |
| Income            | -0.449     | 0.010   |

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

**\*.** Correlation is significant at the 0.05 level (2-tailed).

**Table (5):** Spearman Correlation between total depression score and socio demographic characteristics of studied group (N=32)

|                   | depression |         |
|-------------------|------------|---------|
|                   | Test value | P value |
| Gender            | 0.636      | 0.000   |
| Marital status    | -0.380     | 0.032   |
| Educational level | 0.150      | 0.412   |
| Occupation        | 0.300      | 0.096   |
| Income            | -0.331     | 0.064   |

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

**\*.** Correlation is significant at the 0.05 level (2-tailed)

**Table (6):** Spearman Correlation between total sleep score and socio demographic characteristics of studied group (N=32)

|                   | Sleep      |         |
|-------------------|------------|---------|
|                   | Test value | P value |
| Gender            | 0.305      | 0.089   |
| Marital status    | -0.136     | 0.459   |
| Educational level | 0.023      | 0.901   |
| Occupation        | -0.317     | 0.077   |
| Income            | 0.000      | 1.000   |

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

**\*.** Correlation is significant at the 0.05 level (2-tailed).

### III. Discussion

Depression is a chronic mental disorder that causes changes in mood, thoughts, behavior and physical health. It's a common but serious disease that can take away a person's ability to enjoy life and cause decline in capacity to undertake even the simplest daily tasks. Other than its chronic nature, symptoms associated with this mental disorder are often recurring and life threatening [17]. EMDR therapy is an empirically validated form of Psychotherapy [18], recommended by the World Health Organization to treat trauma [19]. EMDR therapy is based on the AIP model. One of the key assumptions of the AIP model is that dysfunctionally stored (disturbing) memories are the cause of a number of mental pathologies, including PTSD and other trauma-based disorders and also some forms of depression[10],therefore, theoriginal purpose of this study was to evaluate effect of eye movement desensitization and reprocessing (emdr) technique psychological status and sleep quality among depressed patients.

The present study revealed that depression level of depressed patients had reduced through eye movement desensitization and reprocessing (emdr) technique;this result in the same line with[12], who revealed that The EMDR is an efficient method for treating and reducing depression in patients with MI. In other hand

this result was congruent with [1] who found that EMDR plus treatment as usual were more effective than just treatment as usual in reducing SCL-90-R depression subscale. Also our findings are consistent with those of other studies on depression, which have demonstrated that EMDR group therapy significantly reduced the symptoms of depression, compared with control groups [20]. In addition the study conducted by [21] this study confirmed that EMDR therapy significantly reduces the symptoms of PTSD, depression, anxiety, and subjective distress in PTSD patients.

This study mentioned that anxiety level of depressed patients had reduced through eye movement desensitization and reprocessing technique; this result in the same line with [1], who reported that EMDR therapy significantly reduced anxiety in PTSD patients. Also our findings are consistent with those of [22], who revealed that EMDR therapy significantly reduced anxiety in women with PTSD, with a moderate effect size (Cohen's  $d=0.66$ ). In addition our findings are consistent with those of [23], who indicated that EMDR therapy significantly reduced the symptoms of anxiety in patients, compared with those experienced by control patients awaiting treatment. EMDR therapy relieves anxiety by reprocessing information when PTSD patients undergo a subsequent traumatic event.

The result of the present study founded that the depression and anxiety level decreased after using eye movement desensitization and reprocessing technique. i.e. psychological status improved among depressed patients after application of eye movement desensitization and reprocessing technique, this result in agree with the results of the study of [24], who showed that EMDR method causes significant improvement in hospital anxiety and depression variables, PTSD symptoms.

According to the analysis conducted by [25] patients showed an increase in sleep efficiency and reduced time of waking after sleep onset at discharge. The results of present study on the same line with the above result where found that sleep level of depressed patients had reduced through eye movement desensitization and reprocessing technique. Also, this result supported by [26] who also found that EMDR resulted in reduction of depression, anxiety, fatigue, impact of the event, and stress symptoms scores, and an improvement of quality of life, of sleep quality, and general well-being.

The present result illustrated that, there was statically significant positive correlation between anxiety and depression pre and post intervention. i.e. when anxiety increased depression will increase. This result in agree with [27] who revealed that high correlation between anxiety and depressive symptoms. Also there was statically significant positive correlation between anxiety and sleep pre intervention. This result was supported by [28], showed, poor sleep quality has been found to be associated with increased anxiety.

The majority of individuals with depression experience sleep disturbances. Depression is also over-represented among populations with a variety of sleep disorders. Although sleep disturbances are typical features of depression, such symptoms sometimes appear prior to an episode of depression [29]. The result of the present study contradicted to the above statement where there was no statically significant correlation between sleep and depression pre and post intervention. this may be due to decrease sample size in this study.

This study showed that there were significant correlation between sex and depression, this result was congruent with [30], who found that the odds ratio of depression for men compared with women is about 0.60. Concerning occupation, the present study showed that there was no significant relation between occupation and depression. This result in agree with [12], where Results of this study showed that there was no significant statistical difference between demographic features such as; gender, education level, marital status and occupation. On the contrary [31] reported that Elementary occupations consistently showed 'higher' depression.

For education as a factor in depression, the result of the present study showed that education difference had no significant effect. This may be due to the lowest sample size. This result agreed with the finding of [12], who founded that there was no statistically significant relation between depression and education. This result is contradicted with [35] who illustrated that low educational levels were significantly associated with depression.

The prevalence of depression varies with the marital status. The highest rates of depression are seen in divorced and separated respondents, respectively, while. The lowest rate for both types of depression is seen among married people. [32] This result agreed with the finding of the present study who reported that there was highly statistically significant relation between depression and marital status this may be due to lack of communication, difficult financial status, higher expectation from their partner and sexual incompatibility.

Concerning gender and marital status, as a factor in anxiety, the result of the present study showed that significant difference. This result agreed with the finding of. [33] Which, revealed that the prevalence of anxiety disorders was highest in people who were widowed, separated or divorced and lowest in those who were married. This result congruent with [34], who reported that females experience higher levels of anxiety.

#### **IV. Conclusion**

Depressed patients presented high levels of depression, anxiety and low sleep quality before application of EMDR, whereas, after application of EMDR all variables were improved.

## V. Recommendation

Based on the results of current study we recommend application of eye movement desensitization and reprocessing technique to alleviate anxiety, depression and improve sleep quality among depressed patients.

## Reference

- [1]. Michael Hase, Ute MirianBalmaceda, Adrian Hase, Maria Lehnung, VisalTumani, Christian Huchzermeier, and Arne Hofmann 6Received: 26 November 2014; Revised: 28 February 2015; Accepted: 22 March 2015 Brain and Behavior, 2015; 5(6), e00342, doi: 10.1002/brb3.342
- [2]. World Health Organization (2012) Depression: A Global public health concern. Department of Mental Health and Substance Abuse, Retrieved from [http://www.who.int/mental\\_health/management/depression/flyer\\_depression\\_2012.pdf?ua=1](http://www.who.int/mental_health/management/depression/flyer_depression_2012.pdf?ua=1)
- [3]. Debjitbhowmik, K.P. Sampath Kumar, ShwetaSrivastava, ShravanPaswan, AmitSankarDutta Depression - Symptoms, Causes, Medications and Therapies Vol. 1 No. 3 2012 [www.thepharmajournal.com](http://www.thepharmajournal.com) page 37-51
- [4]. Stuart GW. And Sundeen SJ.(1995). Self esteem. In: principal and practice of psychiatric nursing. 5th edition. A times Mirror Company Mosby. New York. PP. 381.
- [5]. Prim Care Companion (2008) .Treating Depression and Anxiety in Primary CareJ Clin Psychiatry. 2008; 10(2): 145–152.
- [6]. David Nutt, DM, FRCP, FRCPsych, FMedSci; Sue Wilson, PhD; Louise Paterson, PhD. Sleep disorders as core symptoms of depression Dialogues ClinNeurosci. 2008;10:329-336.
- [7]. Lee CW, Cuijpers P. A meta-analysis of the contribution of eye movements in processing emotional memories.JBehavTherExp Psychiatry. 2013 Jun;44(2):231-9. doi: 10.1016/j.jbtep.2012.11.001. Epub 2012 Nov 20. Review.PMID:23266601
- [8]. [8]NooriAkhtar-Danesh and JanetLandeen.Relation between depression and socio demographic factors.Int.J.Ment. Health Syst. 2007; (1) 4.
- [9]. El-Wasify, Mahmoud A.; El-Boraie, Osama A.; El-Atrony, Mohammed H.; Abdel-Fatah, Abdel-Hady G, et al.The Prevalence and Correlates of Common Mental Disorders in Dakahlia Governorate (Egypt).Egypt. J. Neuro. Psych.Neurosurg. 2011; 48: 4: 375 -381.
- [10]. Shapiro F1, MaxfieldL.Eye Movement Desensitization and Reprocessing (EMDR): information processing in the treatment of trauma. J Clin Psychol. 2002 Aug;58(8):933-46.
- [11]. Behnammoghadam M, Moradi M, Zeighami R, Javadi HR. The effect of eye movement desensitization and reprocessing on anxiety in patients with myocardial infarction.Iranian Journal ofPsychiatric Nursing. 2013;1(1):1-9. .
- [12]. BehnamMoghadam M, BehnamMoghadam A, Salehian T. Efficacy of Eye Movement Desensitization and Reprocessing (EMDR) on depression in patients with Myocardial Infarction (MI) in a 12-month follow up. Iran J Crit Care Nurs. 2015;8(1):221-226.
- [13]. Harvey AG; Stinson K; Whitaker KL; Moskovitz D; Virk H. The subjective meaning of sleep quality: a comparison of individuals with and without insomnia. SLEEP 2008;31(3):383-393
- [14]. Zigmund AS, Snaith RP. The Hospital Anxiety And Depression Scale. ActaPsychiatr Scand. 1983;67:361–70. [PubMed] [Google Scholar]
- [15]. Yi, H., Shin, K., & Shin, C. (2006). Development of the sleep quality scale. Journal of Sleep Research, 15(3), 309–316.
- [16]. Shapiro F (2001) Eye movement desensitization and reprocessing: Basic principles, protocols, and procedures, 2nd ed. New York: The Guilford Press
- [17]. NetsanetFekadu, WorkinehShibeshi and EphremEngidawork.Major Depressive Disorder: Pathophysiology and Clinical Management. Fekadu et al. J Depress Anxiety 2017, 6:1 DOI: 10.4172/2167-1044.1000255 Journal of Depression and Anxiety ISSN: 2167-1044
- [18]. Shapiro F. (2014). The role of eye movement desensitization and reprocessing (EMDR) therapy in medicine: addressing the psychological and physical symptoms stemming from adverse life experiences. Permanente J. 18, 71–77. 10.7812/TPP/13-098 [PMC free article] [PubMed].
- [19]. World Health Organisation (2013). WHO Releases Guidance on Mental Health Care After Trauma.
- [20]. Karatzias T, Power K, Brown K, McGoldrick T, Begum M, et al. (2011) A controlled comparison of the effectiveness and efficiency of two psychological therapies for posttraumatic stress disorder: eye movement desensitization and reprocessing vs. emotional freedom techniques. J NervMent Dis 199: 372–378. [PubMed]
- [21]. Ying-Ren Chen, Kuo-Wei Hung, Jui-Chen Tsai, Hsin Chu, , Min-Huey Chung, Su-Ru Chen, Yuan-Mei Liao, Keng-Liang Ou, Yue-Cune Chang, and Kuei-Ru Chou .Efficacy of Eye-Movement Desensitization and Reprocessing for Patients with Posttraumatic-Stress Disorder: A Meta-Analysis of Randomized Controlled Trials. PLoS One. 2014; 9(8): e103676. Published online 2014 Aug 7. doi: 10.1371/journal.pone.0103676
- [22]. scheck mm, schaefferja, gillette c (1998) brief psychological intervention with traumatized young women: the efficacy of eye movement desensitization and reprocessing. j trauma stress 11: 25–44. [pubmed]
- [23]. abbasnejadmmk, zamyada (2007) efficacy of eye movement desensitization and reprocessing in reducing anxiety and unpleasant feelings due to earthquake experience. psychol res 9: 104–117.
- [24]. Schneider G, Nabavi D, Heuft G. Eye movement desensitization and reprocessing in the treatment of posttraumatic stress disorder in a patient with co morbid epilepsy. Epilepsy Behav. 1995; 7(4): 715-18.
- [25]. raboni et al.: ptsd treatment by emdrmarareginaraboni, sergiotufik, and deborahsucheckitreatment of ptsd by eye movement desensitization reprocessing (emdr) improves sleep quality, quality of life, and perception of stress ann. n.y. acad. sci. 1071: 508–513 (2006). c 2006 new york academy of sciences. doi: 10.1196/annals.1364.05
- [26]. Mara R. Raboni1, Fabiana F. D. Alonso2, Sergio Tufik3 and Deborah Suchecki1\*Improvement of mood and sleep alterations in posttraumatic stress disorder patients by eye movement desensitization and reprocessing Front.Behav.Neurosci., 10 June 2014 | <https://doi.org/10.3389/fnbeh.2014.00209>
- [27]. Sanne, B.,Mykletun, A.,Dahl, A.A., Moen, B. E., Tell, G. S.Occupational Differences in Levels of Anxiety and Depression: The Hordal and Health Study. 2003; 45:6: 628-638.
- [28]. aysegulsen teker,1 nimetemel luleci2 sleep quality and anxiety level in employees north clinistanb2018;5(1):31-36 doi: 10.14744/nci.2017.58855
- [29]. peter l. franzen, phd\* daniel j. buysse, md sleep disturbances and depression: risk relationships for subsequent depression and therapeutic implications dialogues clinneurosci. 2008 dec; 10(4): 473–481.
- [30]. NooriAkhtar-Danesh andJanetLandeen. Relation between depression and socio demographic factors.Int.J.Ment. Health Syst. 2007; (1) 4.
- [31]. Sanne, B.,Mykletun, A.,Dahl, A.A., Moen, B. E., Tell, G. S.Occupational Differences in Levels of Anxiety and Depression: The Hordal and Health Study. 2003; 45:6: 628-638.

- [32]. Bjelland ,I.I, Krokstad, S, Mykletun A, Dahl A.A, Tell, G.S, Tambs, K. Does a higher educational level protect against anxiety and depression? The HUNT study. 2008; 66(6):1334- 45.
- [33]. The Mental Health of Australians. Anxiety Disorders in Australia.The Mental Health of Australians.2007; 2 (23).
- [34]. McIntyre, N., &Roggenbuck, J. Nature/person transactions during an outdoor adventure experience: A multi-phasic analysis. J. Leis. Res. 2006; 30(4): 401-22.

Mona Abd EL Reheem El Nager" Effect of Eye movement desensitization and reprocessing (EMDR) technique on psychological status and sleep quality among depressed patients". IOSR Journal of Nursing and Health Science (IOSR-JNHS), vol. 8, no.03 , 2019, pp. 05-14.