Effectiveness of intensive short-term dynamic psychotherapy on depression and sleep disorders in women afflicted by migraine: a multi base line single-subject study

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ABSTRACT

Migraine and its effects on depression and sleep disorders are among the most crucial subjects in psychology. In this regard, exploring and examining different psychological methods and their effectiveness on migraine and related indirect damages seem momentous. Current study is conducted to measure the effectiveness of intensive short-term dynamic psychotherapy on the abovementioned subject. This method is done by a multi base line single-subject study on a statistical population which consists of female patients who have migraine and referred to Sabzevar Vasei Hospital during a one-year period from 2023 to 2024. A sample of two women were examined in separate therapy sessions using Beck anxiety questionnaire and revised McGill pain questionnaire. Within and between situation analysis were used in SPSS27 and Excel to interpret the results. Results show that intensive short-term dynamic psychotherapy has a significant effect on depression (went up 52.86% for intervention to base and 59.11% for follow-up to base) and sleep disorders (went up 62.79% for intervention to base and 80.73% for follow-up to base). Results were examined by Cohen's d revealed that the effectiveness of intensive short-term dynamic psychotherapy is high in intervention and average in follow-up stages for depression. Also, high for both stages regarding sleep disorders. Furthermore, within and between analyses revealed a meaningful difference between base and intervention stages for both samples (PND=100). Measurements and examinations showed the durability of this psychological method thorough follow-up stage.

Keywords: short-term intensive dynamic psychotherapy, Depression, Sleep disorders, Migraine

1. *INTRODUCTION*

Psychological factors including thoughts, beliefs, emotions and behaviors are directly influential on body and its related diseases. In another word, the connection between body and mind is not an unfamiliar issue which has been explored and studied by numerous scientists such as Plato, Hippocrates, and Avicenna. Changing lifestyles and increasing life's pressures are among the reasons that play a vital role in psychological factors (1). During last decades, new disorders are appeared under the title of Psychosomatics which are influenced by psychological and emotional factors (2,3). These disorders include a broad spectrum of diseases. Heart disorders, gastrointestinal diseases, migraine and etc. are some cases in point which are directly related to physical symptoms and psychological factors have a close connection to these physical symptoms (4).
Migraine is one of the psychosomatics diseases which appears on one side of the head as a throbbing recrudescent headache and remains for 4-72 hours (5) alongside some other symptoms such as nausea, vomiting and photophobic (6). According of migraine prevalence almost 11.6% of people world wide (7) and 14% of Iranian people (8) are diagnosed with migraine which is one the top 5 debilitating agents (9). Migraine is the main disability reason among patients with headache disorders and physical and mental functional factors

disorders (10). Women are more exposed to migraine compare with men with a ratio of 3 to 1 (11). It is more likely that 25-55 years old people and those who just started working to be afflicted by migraine. Moreover, the chance of being affected by migraine diminishes as age increases (12).

Numerous psychological agents are involved in migraine in which anxiety and depression are among the most prevalent co-occurring psychiatry disorders with migraine (13), with a prevalence of 2-5 times that of the general population, and these co-occurring disorders occur in women almost twice as often as in men with migraine (14).

Depression is one of the most common psychiatric disorders in different populations and a type of mood disorder (15), and is known as one of the factors that has a high simultaneity with people's physical and mental circumstances (16). Depression means experiencing low mood and feeling sad for weeks, months or even years; And sometimes, for no apparent reason, the mood is low, which indicates a serious condition that affects the physical and mental health of the affected people (17). Depression or major depressive disorder is a mood disorder and has some certain symptoms such as low emotion, lack of interest and pleasure, lack of motivation, low self-esteem, lack of sleep, and changes in appetite (18). This disorder is diagnosed in 11-57% of migraine patients (19) which shows a lack of response to treatments, deterioration of migraine prognosis, and increasing disability in migraine (20). Depression prevalence in women is 20% more than of men (21). In general, Patients with depression are more likely to develop migraine than healthy people with a ratio of 2 to 3 times (22). Depression may accompany migraine episodes (23).

Sleep disorders can be considered as one of the main symptoms of disorders such as depression and anxiety, and on the other hand, anxiety, depression and stress may initiate migraine attacks (24). Sleep disorders, including insomnia and fragmented sleep can aggravate symptoms caused by migraine and symptoms of depression, anxiety, suicidal thoughts, irritability, fatigue, cognitive deficits, and pain (26), as well as increasing disability and decreasing life quality in people who are involved with it (27). Many former studies show a low-quality sleep prevalence in migraine people (28). Sleep disorders therapy can diminish the symptoms arising from migraine (25). Frequency of migraine attacks is directly related to sleep quality. The more attacks the lower sleep quality (29). Insomnia, which is the most frequent sleep disorder in these patients, is defined as a problem in falling asleep (more than 30 minutes) for at least 3 days a week, and for more than 3 months. Approximately 68-80% of chronic migraine patients show these symptoms as a daily basis. insomnia can increase headaches up to 40% (30).

Considering irritating and annoying migraine symptoms and multiple physiological and psychological complications are caused by this disease, there are various pharmacotherapy and psychotherapy approaches including cognitive-behavioral, neurofeedback, mindfulness and positive psychology (31-34) are exerted to decrease physical and mental problems in patients, however Intensive Short-Term Dynamic Psychotherapy (ISTDP) has received less attention for these patients. Considering this gap, in current study the effectiveness of ISTDP on anxiety, depression, pain severity, and sleep disorders in migraine people is investigated. ISTDP approach was first introduces by Habib Davanloo in 1970s to cure anxiety, mood, physical symptoms, and personality disorders. This approach is concentrated on avoidant attachment emotions and defenses that the patient focuses on to avoid the emotions that are mobilized in the therapeutic relationship (35). This therapy method helps patients to confront emotions or conflicts are cause by primary losses and damages of life. A stressful incident in current time activates these emotions or conflicts. As a result, anxiety and defenders are mobilized. This process leads to some disorders including somatization, avoidant, depression, self-defeat patterns, and interpersonal problems (36).

Former studies on ISTDP approach shows positive efficacy on generalized anxiety, mood disorders and patients with chronic pain (37-39). In other studies, the effectiveness of cognitive-behavioral therapy and mindfulness-based therapy in reducing the pain of migraine patients was investigated, and the results indicated that cognitive-behavioral therapy is preferred over mindfulness-based therapy (40).

Former investigations show that there is no coherent study that considers both depression and sleep disorders in migraine patients. Also, above-mentioned studies are a clear evident that ISTDP therapy was not used on this group of patients. In this study the effectiveness of ISTDP on depression and sleep disorders is investigated.

2. *Methodology*

In terms of purpose current study is practical and in terms of data collection single case experimental design with a multiple baseline through different people was used. Statistical population consists of female patients who have migraine and referred to Sabzevar Vasei Hospital during a one-year period from 2023 to 2024 and

formerly were diagnosed with migraine by psychologists. Patients entrance qualification includes patients' willingness to participate in the study, diagnosed with migraine, 25-45 years of age, holding at least a diploma degree, not receiving other psychological therapy methods before, getting a score of at least 16 in Beck's anxiety questionnaire, 21 in Beck's depression questionnaire, 110 in McGill's pain questionnaire, and 6 in Pittsburgh's sleep quality questionnaire, and finally absence of contraindications for entering this treatment. Quitting qualification also includes patients' not willingness to continue the therapy, other disease incidence like suicidal thoughts and probable suicide which needs an instant intervention, and being diagnosed with a severe physical disease. The written informed consent of the participants, emphasis on confidentiality and not harming the participants are among the ethical standards that are considered in this research. This study holds Neyshaboor Azad University's ethical standard license with the code of IR.IAU.NEYSHABUR.REC.1403.019.

At the beginning subjects entered to the base phase and passed 3 sessions of baseline phase on a weekly basis. They entered to the intervention phase next. At this stage, each subject underwent 14 individual treatment sessions, one session per week, for a total of 14 weeks, and each session lasted 60 to 90 minutes. After the completion of the intervention phase, the subjects entered the follow-up phase respectively. Two follow-up sessions were conducted two weeks and one month after the end of the intervention sessions. Beck anxiety and McGill pain questionnaires were administered to each subject 3 times in the baseline phase, 5 times, in the intervention phase in 3rd, 6th, 9th, 12th, and final sessions, and 2 times in the follow-up phase. All the evaluations in all 3 stages of baseline, intervention and follow-up were done by the first researcher who has passed required stages. Table 1 shows the ISTDP protocol in summary.

Table 1. ISTDP protocol

Session No.	Session subject	Descriptions
1	Asking about the patient's problem	The first therapy session, according to Dovanlo's method, is a trial treatment. At this stage, the patient's problems and his initial ability to respond to the treatment are evaluated. The nature of the patient's problem is discussed and an explanation is asked of a specific and exact example of his problem. In the questioning process the patient is asked to clarify his/her speech by providing personal, objective and specific explanations. In fact, the patient's emotional tolerance capacity is actually evaluated at this stage.
2	Pressure	After the requests of the therapist to patient to be objective and clear about the answers, the second stage of dynamic sequence begins gradually. At this stage, the main defense systems are activated gradually in the patient by frequent requests which are expressed by the therapist to subjects to explain specific and objective answers and anxiety-provoking issues. The therapist asks the patient for specific and objective answers. The patient is asked to give an example of the events that caused him the problems. Try to navigate the interview to anxiety-provoking issues.
3	Challenge with defenses	After asking and proper pressures for specific answers and experienced feelings, defense mechanisms are activated and the therapist enters the stage of analyzing and checking defenses through pressure on the subject. Since the purpose of this method is to create the ability to experience feelings at the highest level, all defenses are challenged against the specific emotions experience to be neutralized. The goal of the therapist in third stage is to clarify the nature of the defenses and to challenge the defenses by questioning the client's defensive actions and speech.
4	Transference resistance	The challenge leads to activation of complex transference emotions resistance. At this stage, the therapist tries to break the transference-related defense systems by using clarification and challenge. In this

		process, the internal tension between the resistance and the therapeutic contract reaches its maximum and it continues to the point that the therapeutic contract overcomes the resistance and the possibility of breaking into the patient's unconscious pathological material is provided. In fact, at this stage, all the patient's defenses and resistances are activated against transference emotions and the patient tries to escape from this experience. Therefore, the first three stages of the ISTDP protocol are focused and repeated on the transference feelings. The pressure and challenge continue unstoppably so that the patient can experience his/her current feelings towards the therapist.
5	Break into the unconscious	At this stage, defenses and resistances increase in proportion to the increase in anxiety regarding the arousal of emotions and past forbidden impulses. The persistence of the therapist to achieve transference feelings and overcome resistance is effective at this stage, and he/she should not reduce the challenges and defenses and the therapeutic contract. Because this will reduce the conflicts that this method seeks to intensify. when the patient can express his/her feeling to the therapist, he/she is asked to describe his/her inner experience of that feeling. All three components of an emotion must be experienced for full penetration and real touching of emotions. Transference emotions are usually complex. Anger is the first layer of transitional emotions, followed by guilt and grief. But instead of anger, the first penetration may be a feeling of sadness and regret.
6	Transference systematic analysis	The result of the inner psychological crisis is a major reduction in tension and a significant change in the patient, followed by the predominance of the therapeutic contract. Transference feelings lead to the opening of the patient's repressed memories and feelings either spontaneously or by therapist question. As a result, it becomes possible to explore areas out of the transference. At this stage, transfer analysis consists of communicating and analyzing the similarities between reference communication pattern in transference and his/her other relationships in current and past life. At this stage, the therapist analyzes the transference using the triangle of conflict and the person triangle.
7	Unconscious dynamic research	In the seventh stage, due to the dominance of therapeutic agreement, traumatic events causing anxiety and unconscious feelings of anger, sadness and guilt are revealed and experienced that the therapist helps the patient to gain insight into them. After the systematic analysis of the transference and triangle of conflict and the person, the therapist explores the patient's current and past relationships. The therapist uses the triangle of conflict and the person to analyze the materials that are exposed. Exploring the patient's family life and past is essential at this stage. After collecting sufficient evidence from the client's past, the therapist makes his questions more dynamic, and in this regard, the conflict structure and the core of the patient's disorder are clarified. Facing painful feelings may provoke some resistance, but a little push and challenge cab easily break the resistance. The therapist tries to reveal the patient’s most painful feelings and enable him/her to experience them directly.

In this research some tools are used as below:

Beck’s depression questionnaire, second edition (BDI-II): this questionnaire is revised and updated version of the original questionnaire that embraces cognitive, emotional, physiological and other dimensions. Many former studies are conducted on this questionnaire to study and confirm reliability and validity, factor analysis, and jumping off point (41-44). This questionnaire is a self-reporting tool which is consists of 21 four-choice

questions. The choices are graded from 0 to 3 and higher grade shows higher level of depression. Maximum final mark in this questionnaire is 63. A score of 14-19 is indicative of mild depression, 20-28 average depression, and 29-63 severe depression (45).
Han et. al. (2008) showed a value of 0.88 (P<0.001) for Cronbach's alpha and a value of 0.60 (P<0.001) for retest reliability. Arnova et. al. (2001) considered 0.94 for Cronbach's alpha. Jefferson et. al. (2001) calculated a value of 0.94 for Cronbach's alpha (46). Taheri Tanjani et. al. (2013) evaluated and confirmed the reliability and validity of this questionnaire.

Pittsburg's sleep quality questionnaire (PSQI): This questionnaire is used to measure the quality and sleep patterns of adults. The 7 areas examined by this questionnaire include: subjective quality of sleep (a person's general description of the quality of sleep), delay in falling asleep, length of sleep, useful sleep, sleep disorders, daily dysfunction and use of sleeping pills during the last month (48). Grading is based on a Likert scale from 0 to 3, where 0 means very appropriate and 3 means inappropriate. In this way, a score of 0 to 4 means good sleep quality and above 5 means poor sleep quality. The reliability of this questionnaire was reported by Cronbach's alpha, 0.83 (49). Kakooee et. al. (2010) confirmed the validity of this questionnaire (50).

Intra-situational analysis (median, mean, stability compartment, range, relative and absolute level changes) and inter-situational analysis (trend change, level change, percentage of non-overlapping data (PND), percentage of overlapped data (POD)) and recovery percentage calculation based on Baseline Mean Reduction method was used for data analysis. SPSS software (27th version) was used for numerical calculations. A PND above 70% indicates a high effectiveness of the intervention, a value between 50 and 70% indicates an average effect of the intervention and below 50% indicates the ineffectiveness of the intervention (51).

Regarding recovery percentage, values above 50% indicate a high effect of the intervention, and values between 25% and 49% and values less than 25% indicate a moderate effect and ineffectiveness of the intervention, respectively (51-52). The values higher than 1.96 for RCI also show that the results are not random and the improvement is the result of therapeutic intervention (53).

3. *Findings*

The first patient was a 27-year-old woman, holding a bachelor degree and single, and the second patient was a 31-year-old woman, holding a bachelor degree and married. The chart of depression changes of both patients is shown in Figure 1.

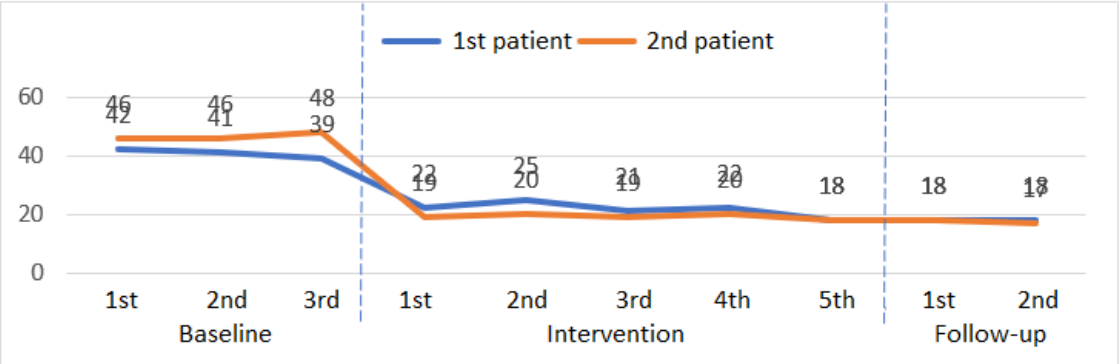

Fig. 1. Changes in subjects' depression variables
Intra and inter situational analyzes, recovery percentage, and RCI for anxiety variable are represented in Tables 2, 3 and 4.

Table 2. Intra-situational analyzes of the subjects for the depression variable

Situation	Base		Intervention		Follow-up	
sequence	1st patient	2nd patient	1st patient	2nd patient	1st patient	2nd patient

Mean	40.6	46.6	21.6	19.2	18	17.5
Median	41	46	20	19	18	17-5
Std	0.69	0.68	0.59	0.66	0.52	0.74
Range	2	2	2	2	3	1
Stability chamber	32.8-49.2	36.8-55.2	17.6-26.4	15.2-22.8	14.4-21.6	14-21
Stability chamber range	Stable	Stable	Stable	Stable	Stable	Stable
Relative scale changes	-2.5	+2	-2	0	0	-1
Absolute scale changes	-3	+2	-4	-1	0	-1

Table 3. Inter-situational analyzes of the subjects for the depression variable

Situation compare	**Base and intervention**		**Intervention and follow-up**	
	1st patient	2nd patient	1st patient	2nd patient
Mean scale's change	-19.06	-27.46	-3.6	-1.7
Median scale's change	-19	-27	-4	-.15
Relative scale's change	-17	-29	-2	-1
Absolute scale's change	-17	-29	0	0
Cohen's d	1.07	1.33	0.32	0.03
RCI	-79.41	-114.42	-17.14	-7.39
PND	100%		100%	
POD	0%		0%	

Negative numbers show decreasing grades

Table 4. patients' recovery percentage for depression variable

Situational comparing	**Intervention to base**		**Follow-up to base**	
	1st patient	2nd patient	1st patient	2nd patient
Recovery percentage	46.88%	58.85%	55.73%	62.50%
Total recovery percentage	52.86%		59.11%	

According to the intra-situational analyzes for both patients, the average in the intervention phase has decreased significantly compared to the baseline phase, and this decrease has continued in the follow-up phase as well. Also, the results of the relative and absolute change for the patients indicated the improvement of depression in both patients. The low value of the standard deviation in all three stages of base, intervention and follow-up for both patients is a sign that the data are close to the average and there are high homogeneity and stability in these stages. In cross-situational analyses, according to Cohen's d values, the effectiveness of ISTDP on depression of the first patient is high in the intervention phase and medium in the follow-up phase, and high in the intervention phase and low in the follow-up phase for the second subject. Also, the RCI values show that the recovery is not random and is caused by the therapeutic intervention. The results of PND for both subjects are 100, which, considering that values above 70% indicate a high effect of the intervention, shows that ISTDP has been effective on the depression on both patients. The results of Table 4 also show that this treatment has

been effective on the depression of people with migraine. Since values above 50% indicate a high effect of the treatment, in the first patient, the treatment had a medium to high effect in the intervention phase and a high effect in the follow-up phase, and second subject saw a high effect treatment in both the intervention and follow-up phases.

In the following, for a more detailed analysis of each patient, the stability graph, trend line, and stability of the trend line are illustrated in figures 2 to 5 for visual analysis of the depression variable.

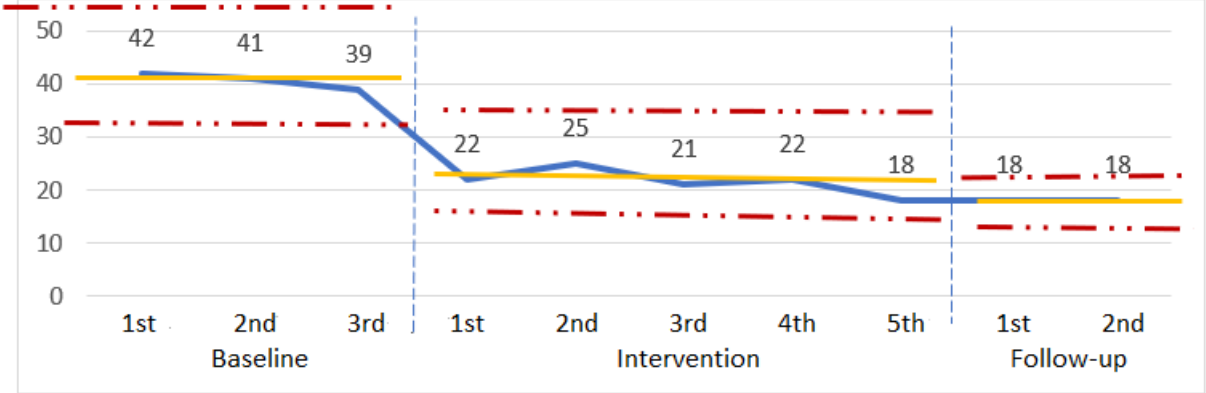

Figure 2. Depression variable stability compartment for the first patient

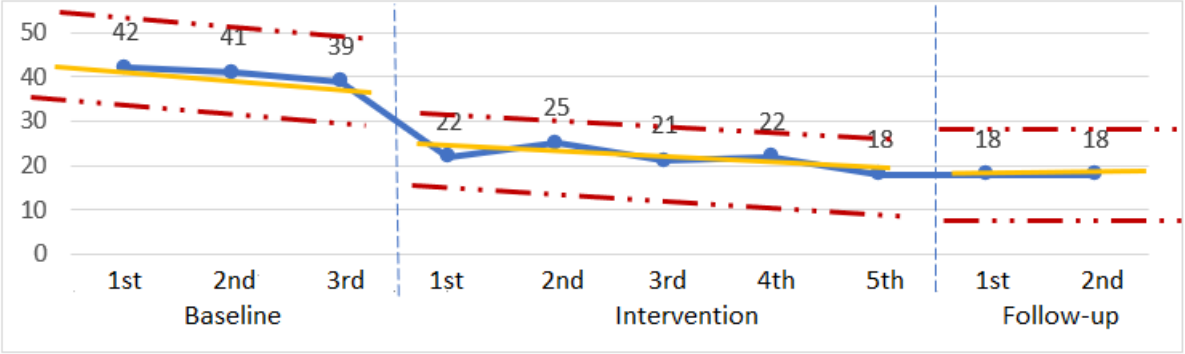

Figure 3. Trend line of depression variable for the first patient

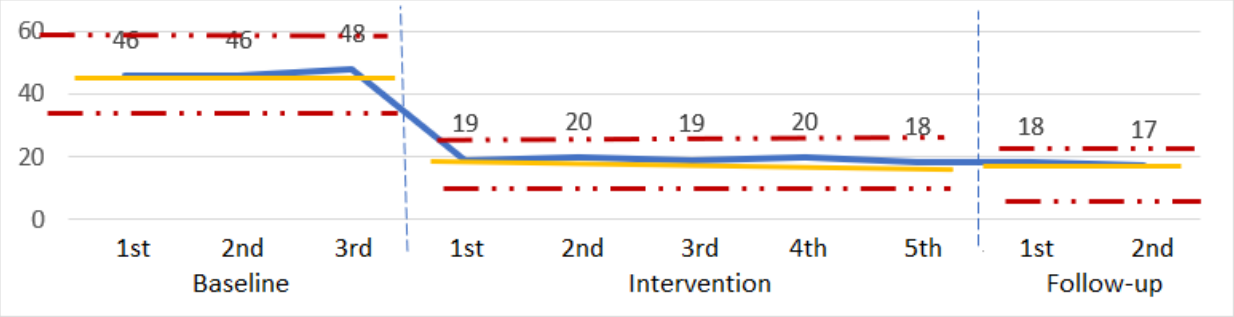

Figure 4. Depression variable stability compartment for the second patient

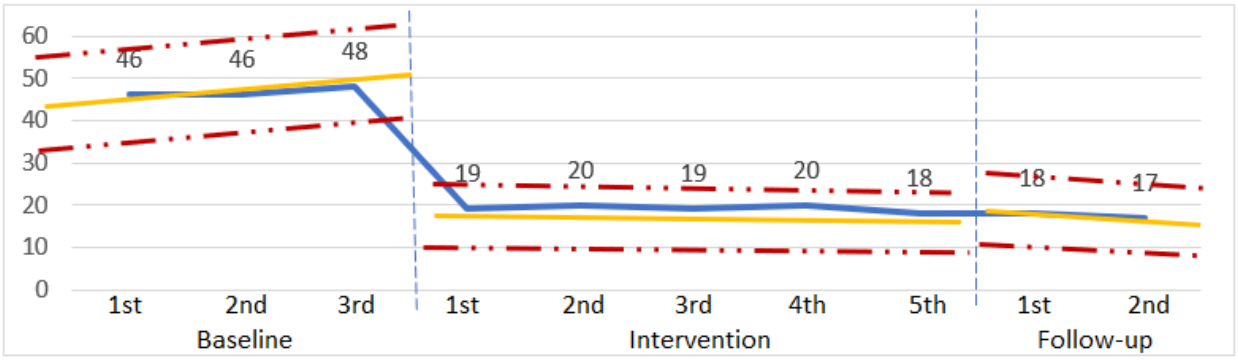

Figure 5. Trend line of depression variable for the second patient

having stability in the baseline data is very crucial, so that the baseline sessions should continue until a proper relative baseline phase stability in the data. The stability plots for both patients show that the data were stable at baseline phase. Also, the trend line graphs show that the depression trend in both the intervention phase and in the follow-up phase for the first subject was decreasing, and for the second subject, the depression trend was decreasing in both the intervention and follow-up phases.
The change chart of sleep disorders for both subjects is shown in Figure 6.

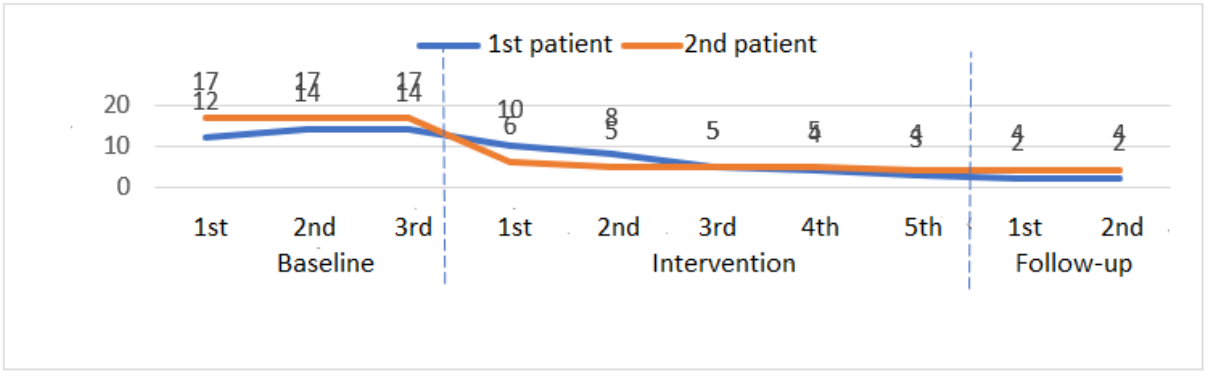

Figure 6. Variable changes of subjects' sleep disorders

Intra-situational and inter-situational analyzes, recovery percentage, and RCI for anxiety variable are presented in Tables 5, 6, and 7.

Table 5. Patients' intra-situational analyzes for the sleep disorder variable

Situation sequence	Base		Intervention		Follow-up	
	1st patient	2nd patient	1st patient	2nd patient	1st patient	2nd patient
Mean	13.3	17	6	5	2	4
Median	14	17	5	5	2	4
Std	0.53	0.51	0.71	0.57	0.50	0.52
Range	2	9	7	28	0	2
Stability chamber	11.2-16.8	13.6-20.4	4-6	4-6	1.6-4.8	3.2-4.8
Stability chamber range	Stable	Stable	Variable	Stable	Stable	Stable
Relative scale changes	+1	0	-4.5	-0.5	0	0

Absolute scale changes	+2	0	-7	-2	0	0

Table 6. Patients' inter-situational analyzes for the sleep disorder variable

Situation compare	**Base and intervention**		**Intervention and follow-up**	
	1st patient	2nd patient	1st patient	2nd patient
Mean scale's change	-7.3	-12	-4	-1
Median scale's change	-9	-12	-3	-1
Relative scale's change	-6	-12	-1.5	-0.5
Absolute scale's change	-4	-11	-1	0
Cohen's d	1.08	2.28	1.27	0.5
RCI	-23.64	-40	-9.76	-3.125
PND	100%		100%	
POD	0%		0%	

Negative numbers show decreasing grades

Table 7. patients' recovery percentage for sleep disorder variable

Situational comparing	**Intervention to base**		**Follow-up to base**	
	1st patient	2nd patient	1st patient	2nd patient
Recovery percentage	55%	70.59%	85%	76.47%
Total recovery percentage	62.79%		80.73%	

According to the results of intra-situational analyzes in Table 5, for both patients, the average in the intervention phase compared to the baseline phase has decreased significantly, and this decrease has continued in the follow-up phase as well. Also, the results of the relative and absolute level change for the subjects indicated the improvement of anxiety in both subjects. The low value of the standard deviation in all three stages of basic, intervention and follow-up for both patients is a sign that the data are close to the average and high homogeneity and stability in these stages. Cross-situational analyzes also show that according to Cohen's d values, the effectiveness of ISTDP on sleep disorders in the first patient is high in both the intervention and follow-up stages, and for the second patient is high in intervention stage and moderate in the follow-up stage. Also, the RCI values show that the recovery is not random and is caused by the therapeutic intervention. The results of PND for both patients are 100, which, considering that values above 70% indicate the high impact of the intervention, shows ISTDP has been effective on the patients' sleep disorders. The results of Table 7 also show that this treatment has been effective on the sleep disorders of people with migraine. Since values above 50% indicate a high effect of the treatment in both patients, the treatment had a high effect in both the intervention and follow-up stages.

In the following, for a more detailed analysis of each subject, the graph of the stability chamber, the trend line, and the stability of the trend line are depicted in figures 7 to 10 in order to visually analyze the anxiety variable.

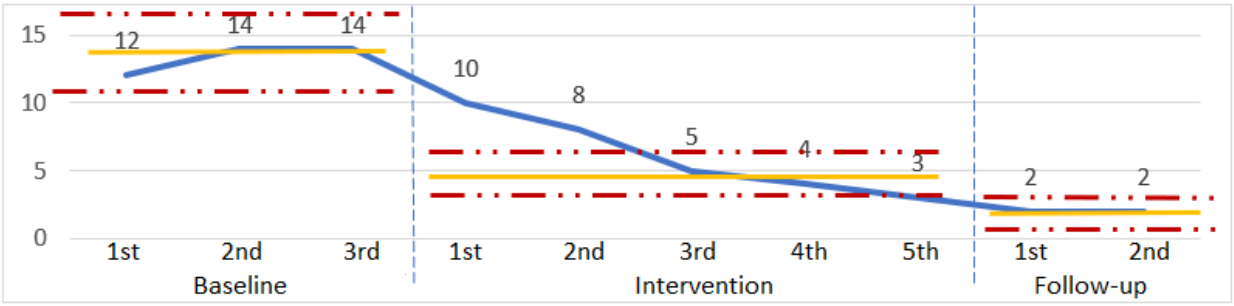

Figure 7. Sleep disorder variable stability compartment for the first patient

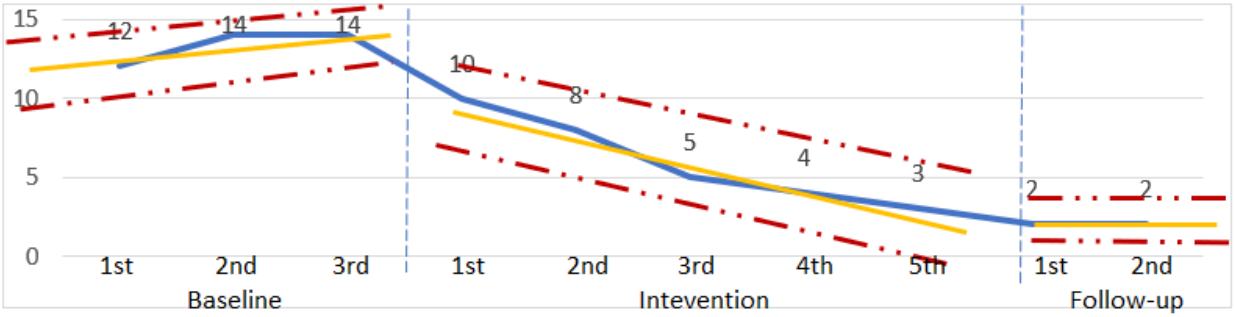

Figure 8. Trend line of sleep disorder variable for the first patient

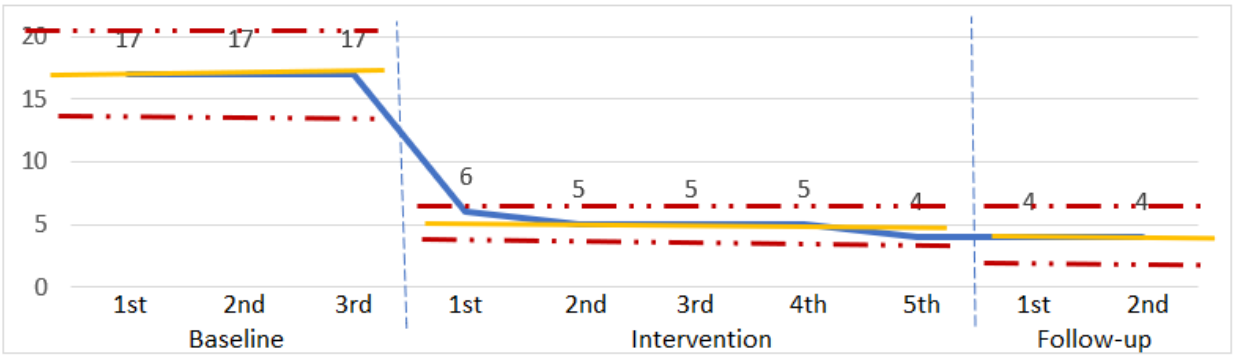

Figure 9. Depression variable stability compartment for the second patient

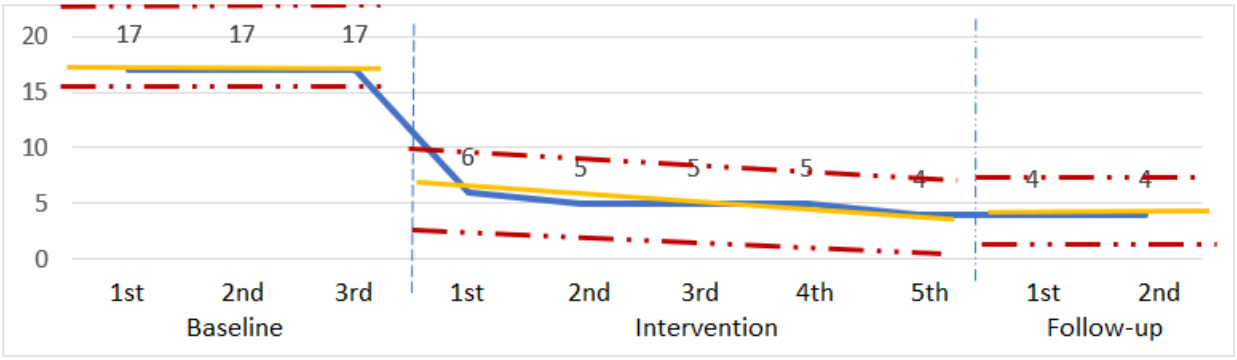

Figure 10. Trend line of sleep disorder variable for the second patient

The stability plots for both patients show that the data were stable at baseline. Also, the trend line graphs show that the trend of sleep disorders for both subjects decreased in the intervention phase and was stable in the follow-up phase.

4. *Discussion*

The present study was conducted with the aim of investigating the effectiveness of ISTDP on depression and sleep disorders in patients with migraine. The results obtained showed that ISTDP was effective on depression and sleep disorders in patients with migraine and reduced depression and sleep disorders in these patients. The results of this research are compatible with the studies of Kahn (2020), Town et al. (2020), Caldiroli et al. (2020) and Ajilchi et al. (2020) for the variable of depression [54-57]. No published study was found that investigated the effectiveness of ISTDP on sleep disorders, so it was not possible to compare the findings of the present study with the findings of other studies.

The effectiveness of ISTDP on depression can be explained as self-directed anger and its conflicting dimensions are the things that dynamic psychotherapy theories have paid attention to in the etiology and persistence of depression symptoms. Therefore, Dovanlo's emphasis for improving the symptoms and treating depression has been the experience of anger in the transference relationship between the patient and the therapist. According to this therapeutic approach, the use of uncompromising defenses is one of the characteristics of depressed people, and due to the excessive use of these defenses by these patients, they do not realize the use of these defenses and their impact on their lives. Therefore, short-term intensive psychodynamic therapy with pressure for the patient's full emotional experience and challenge with defenses that prevent emotional experience and defenses that are formed in the transference relationship provoke transference feelings, especially anger. In this treatment, the therapist uses the conflict triangle to de-suppress blocked emotions. Therefore, it removes the barriers of emotional experience that caused the formation of depression symptoms so that the patient learns how to accept his feelings and prevent the recurrence of depression by managing and regulating them. Deeply experiencing emotions and reducing the use of maladaptive defenses allows the patient to gain a deep understanding of himself and his abilities (58). Therefore, with the emotional experience and the insight that the patient finds about the connection between inhibited emotions and the symptoms of the disease, he abandons the use of regressive and self-defeating defenses when consciously confronting the things that he previously avoided, and as a result, the ego finds its independence and The patient is able to live at the highest level of their abilities, as a result of which the symptoms are reduced and improvement in depression is achieved.

In the intervention on two patients in this research, the therapist challenged the defenses that prevented the experience of repressed feelings and emotions (main defenses) and also the defenses that prevented the emotional closeness to the therapist (tactical defenses), causing anger in the patients. Then, using the conflict triangle and the person triangle, the therapist showed the patient how these defenses prevent him from experiencing emotions and thus affect his life and relationships. In this way, the patient realized the connection between these defenses and their use and his depression symptoms. During the sessions and by repeating this process, the use of incompatible defenses by the patients decreased, as a result, the symptoms for these two patients decreased and improved.

In explaining the effectiveness of short-term intensive dynamic psychotherapy on sleep disorders, it can be stated that sleep problems are very common in patients with chronic pain and 88% of these patients complain of sleep disorders [59]. The relationship between sleep problems and pain has been investigated in various studies that have expressed the bidirectional relationship between sleep disorders and pain [60]. The reciprocal relationship between persistent sleep disturbances and persistent pain intensity suggests that treatment of each of these problems may contribute to the treatment of the other [59]. Therefore, it can help improve sleep disorders by reducing pain.

As mentioned in the previous explanation, people like migraineurs who suffer from psychosomatic diseases discharge anxiety in the physical channel and parasympathetic system and use repressive defenses such as denial and somatization. In these people, it is common to deny and ignore anxiety, and ISTDP therapy with a moment-to-moment anxiety identification help these patients in managing and reducing it. On the other hand, in this method, the therapist helps the patient to see the defense mechanisms that he uses to reduce anxiety and not to face forbidden feelings, and to destroy them gradually, and to be able to use more adaptive and mature defense mechanisms. By repeating this process, the patient learns to put aside the incompatible defenses, the capacity of anxiety tolerance increases, and he can face his feelings to experience them and as a result physical symptoms and pain will decrease and sleep disorders will improve in these patients.

In the present study, the therapist was able to help the patients to bypass their defenses and face their feelings and experience them with the help of ISTDP.

5. *Conclusion*

In general, the findings of the present study show that short-term intensive dynamic psychotherapy is highly effective on both depression variables and sleep disorders of migraine people in both the intervention and follow-up stages. Therefore, based on these results, it can be suggested that clinical psychologists use this treatment to reduce anxiety and pain intensity in migraine patients.

This research has faced limitations. The results of this research are limited to women with the age range of 25 to 45 years, so caution should be exercised in generalizing the results to other age groups as well as men. Also, a longer follow-up period would allow the possibility of investigating the effectiveness of the intervention. In the present study, due to the lack of time, the minimum follow-up period was considered for the patients. Considering these limitations, it is suggested that more and more diverse samples with a wider age range be used in future studies to increase the generalizability of the results. Also, research with longer follow-up periods should be conducted to provide more complete results about the stability of the intervention effect. On the other hand, it is suggested that the effectiveness of short intensive psychodynamic therapy and their coexisting disorders in other headaches such as cluster and tension headache and other psychosomatic diseases should also be investigated.

6. *Appreciation*

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