

Research Paper: The Effects of Transactional Analysis on Couple Burnout in Obese Women With Type 2 Diabetes



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ABSTRACT

Introduction: Obesity and obesity-related diabetes became epidemics globally. Obesity and diabetes, as one of its associated illnesses, could change family reactions and interactions. Therefore, diabetes is considered a family matter that, like other chronic diseases, affects marital relationships.

Objectives: The present study investigated the effectiveness of transactional analysis on couple burnout in obese women with type 2 diabetes.

Materials and Methods: This was a quasi-experimental study with a pre-test/ post-test and follow-up as well as a control group design. The study population consisted of all married obese women with type 2 diabetes who were members of the Gonbad-e Kavous Diabetes Association in 2018. Of them, 40 persons were selected and randomly assigned to the experimental and control groups (20 patients per group). Then, the experimental group received transactional analysis intervention in 10 two-hour sessions, one session per week. The controls received no intervention during the research period. The research instrument was the Pines Couple Burnout Measure (CBM), which was completed by study participants in the Pre-test, Post-test, and follow-up phases. The obtained data were analyzed by repeated-measures Analysis of Variance (ANOVA) and Bonferroni posthoc test in SPSS.

Results: The repeated-measures ANOVA results indicated that transactional analysis could significantly decrease the couple burnout and its components, i.e. physical exhaustion, emotional exhaustion, and mental exhaustion in the experiment group participants in the Post-test and follow-up phases, compared to the controls ($P < 0.01$). The effect size of the treatment was 73% on couple fatigue, 67% on physical exhaustion, 74% on emotional exhaustion, and 60% on mental exhaustion.

Conclusion: According to the study results, psychologists and family counselors are recommended to implement transactional analysis as an appropriate intervention to reduce the marital problems of obese individuals with type 2 diabetes.

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1. Introduction

Diabetes is among the most prevalent chronic diseases worldwide. Economic growth, urban life development, lifestyle changes, weight loss, and weight gain affect diabetes development [1]. Approximately 90% of people with diabetes are affected by type 2 diabetes. It is estimated that the number of people affected by type 2 diabetes will increase to 246 million in 2021 and 592 million in 2035 globally [2]. Iran is also projected to have 9.2 million people with diabetes by 2030 [3]. Some causes of the disease include the patients' characteristics, such as unawareness about diabetes, beliefs, disapproval, and adherence to a diet. Besides, the psychosocial aspects of patients, which gradually lead to biopsychosocial complications are may also contribute to this condition [4, 5]. Modern diabetes treatment is based on 5 principles; education, proper use of medicine, physical activity, proper dietary program, and daily blood glucose control [6].

Obesity is a major risk factor for type 2 diabetes. Furthermore, numerous epidemiological studies have suggested that the prevalence of this disease is progressively increasing among overweight individuals [7]. Obesity is defined as excessive body mass and fat according to a person's height, which increases the risk of associated diseases. Obesity prevalence has been increasing in the world. Approximately 396 million adults, or 9.8% of this population, are overweight. This number is also estimated to reach 1120 million by 2030 [8]. The risk of death in people with diabetes and obesity together is 7 times higher than the healthy individuals. Therefore, diabetes and obesity are strongly correlated in epidemiological cognition, i.e. a serious threatening global health [9].

In a review of 17 prospective studies and 35 cross-sectional studies on 18-74-year-old adults investigated that body or waist mass index could independently predict type 2 diabetes [10]. Chronic diseases, such as diabetes could alter the family reactions and interactions. Diabetes should be considered as a family matter that affects all family members. These patients face more marital problems than healthy couples due to the generation of illness. Thus, the spouse has to alter their role and accept a new character. Such a relationship becomes a one-sided beneficial interaction with a double burden of responsibilities for the spouse due to the illness; therefore, it significantly impacts family life and relationship quality [11].

Unpleasant consequences of diabetes are mentioned as follows. 1. Physical exhaustion, including fatigue, boredom, weakness, chronic headaches, stomach ache, the loss of appetite, and overeating; 2. Emotional exhaustion, including resentment, fatigue, depression, loneliness, the lack of motivation, low self-esteem, and even suicidal thoughts; 3. Mental exhaustion, including low self-confidence, negative feelings about the spouse, frustration with the spouse, self-dissatisfaction, and prolonged lack of love, leading to marital burnout [11]. The Ekberg research studies data revealed that a chronic illness in one spouse could induce couple burnout in the other spouse due to the increasing burden of additional responsibilities associated with the disease, like day caring [12]. According to Kayser, marital burnout gradually declines the marital emotional attachments with a feeling of alienation, the lack of interest, indifference, and the replacement of negative emotions with positive ones [13].

The decrease in love and increase in hostile behaviors result from marital dissatisfaction that put the family structure at risk [14]. Pamuk and Durmus's research indicated a significant gender difference in marital dissatisfaction feelings, and that women are more likely to be dissatisfied than men [15]. Among the new therapies [16, 17], one of the effective therapeutic approaches used to treat couple burnout in obese patients with type 2 diabetes is the Transactional Analysis (TA) approach. TA is an analytical approach, which incorporates structures, such as ego states, transactions, life scenario, life positions, and time structures [18].

TA is among the most influential approaches in the field of marriage counselling. Besides, it is a psychotherapy system, i.e. used to treat various mental disorders, from daily living problems to profound personality disorders i.e. important in personality growth and change. This method is most effective in understanding people, interpersonal relationships, and communication matters. Thus, this approach might improve the marital intimacy and sexual satisfaction, i.e. formed in an intimate relationship with another person. Furthermore, TA could be provided as individual, group, couple, and family therapy. TA involves an easy and complete interactive theory about personality that provides insight into how to encounter with oneself and others [19].

The primary task of a TA therapist is to make clients skilled and guide them on analyzing their relationships and monitor the results. In Berne's view, stages of behavioral change include removing inappropriate behaviors, psychiatric discharging, describing, and clarifying

new communication and orientation practices. TA also emphasizes on social positive recognition (caring) and unconditional positive attention (I am good, you are good); these are considered as essential needs in human psychological transformation, changing through personal responsibility, decision-making, and intentional action. Moreover, these factors emerge in contract-based therapies with focus on liberty and empirical challenges [18].

The effectiveness of TA on improving psychiatric symptoms has been examined and supported by various studies; e.g. the relationship between social psychosocial functioning and life quality in patients with personality disorder [20], recovering depression and anxiety [21], reducing adolescent verbal aggression [22], and reducing the symptoms of generalized anxiety disorder [23]. Alkaser et al. investigated the effect of group TA training on reducing spouse centered-control behaviors in marital conflicts. The relevant results revealed a significant decrease in the experimental group, compared to the controls [24]. Mostafavi et al. also argued that TA has improved family disputes [25].

Additionally, Nayeri et al. reported that TA training could develop family intimacy [26]. Many type 2 diabetics face serious biopsychological problems. This is because it is a chronic disease and has a devastating effect on the physique and emotion of people. Therefore, it is necessary to more seriously consider the psychological consequences of this condition. As a result, we could use effective non-pharmacological therapies along with medications to prevent the progression of this disease to the patients' mental health dimension. Problems associated with diabetes are essential in marital life. However, few studies explored the effects of psychological therapies in this regard, especially TA, with its effects supported by many international and domestic studies. Accordingly, it is necessary to examine the effectiveness of this treatment of married obese women with diabetes. Therefore, this study aimed to investigate the effect of TA on couple burnout in obese married women with type 2 diabetes.

2. Materials and Methods

This was a quasi-experimental study with a pre-test/post-test, follow-up, and a control group design. The study population comprised all married obese women with type 2 diabetes who were members of the Gonbad Kavous Diabetes Association, in 2018. Of them, 40 individuals were selected and randomly assigned to the experimental and control groups (20 patients per group).

The study inclusion criteria included being diagnosed by type 2 diabetes for at least one year, Body Mass Index (BMI) of kg/m^2 , the age range of 35-60 years, educational level of at least primary school, the lack of physical limitations impeding individual care, and providing a consent form for study participation. The exclusion criteria included not consenting to take part in the study, a history of hospitalization in psychiatric hospitals, consuming psychiatric, psychedelic, or any sedatives medicine, alcohol and substance use, participation in similar training programs, participation in individual counseling sessions, and >3 sessions of absenteeism.

The study initiated after the necessary coordination with the management of the Diabetes Society of Gonbad-e Kavous. The researcher provided the call for registration and participation in the therapeutic sessions to the center. After registering the applicants within the designated timeframe, the researcher had an initial interview with each of them. Based on the study inclusion and exclusion criteria, 40 women were selected and randomly assigned to two experimental and control groups (20 per group). It should be noted that 3 subjects (2 subjects in the control group and 1 subject in the experimental group) were excluded from the study for various reasons, and statistical studies were performed on 37 women. Then, the experimental group received TA intervention in 10 two-hour sessions, one session per week (Table 1).

The control group received no intervention during the research period. The research instrument was the Pines Couple Burnout Measure (CBM), which was completed by the study participants in the Pre-test, Post-test, and follow-up stages. After the completion of the study, therapeutic sessions were provided to the control group participants to observe the ethical and professional research issues and to thank them for their cooperation in the research. The obtained data were analyzed by repeated-measures Analysis of Variance (ANOVA) and Bonferroni posthoc test in SPSS.

Pines Couple Burnout Measure (CBM)

In this study, we used the Pines CBM 21-item Questionnaire to measure the couple burnout. The questionnaire has three subscales; physical exhaustion (feeling tired, fatigued, & having sleep disorders), emotional exhaustion (feeling depressed, hopeless, trapped), and mental exhaustion (feeling worthless, frustrated, and angry with the spouse). Scoring was based on a 7-point Likert-type scale (ranging from 1=never to 7=always) [27]. On this scale, the highest band score is 147, and

Table 1. Summary of transactional analysis sessions

Sessions	Sessions Content
First	The therapist and the team members becoming familiar with each other; discussing the purpose of the sessions, the research overall structure, rules of the group, and examining the expectations of the treatment plan. The purpose of the sessions and their structures were explained to the group members. Moreover, the members individually introduced themselves and their purpose of attending these sessions. Then, they were briefed on TA.
Second	To get the participants acquainted with the first personality dimension of TA theory, "I am a child," and its different modes like being a normal child, a matching child (positive and negative), and a rebellious child, along with various examples. Assigning tasks for the study subjects.
Third	Reviewing the previous session assignments. Teaching the "parent dimension of the personality" and its variants, the supporting parent (the witness parent, the blaming parent, and the positive and negative aspects of each one was taught by providing examples). Proving the group members with examples of their parent's dimension role in their own life and discussing it. Assigning tasks for the study subjects.
For th	Reviewing the assignment of the previous session. Explaining the "adult dimension of the personality" by examples. The group members providing examples of using this aspect in their family life. Explaining the diagram of the mood states. Summarizing the contents of the session by the counselor and the members. Assigning tasks for the study subjects.
Fif th	Reviewing the assignment of the previous session. Explaining personality disorders, such as rejection, contamination, and mastery to the group members by drawing and examples. Answering their questions. Assigning tasks for the study subjects.
Six th	Reviewing the assignment of the previous session. Teaching the life statues include "I'm not good, you're not good", "I'm not good, you're good", "I'm good, you're not good", and "I'm good, you're good". Assigning tasks for the study subjects.
Seven th	Reviewing the assignment of the previous session. Teaching the types of the transactional model of communication were taught with examples; complementary, cross-sectional, and hidden. Assigning tasks for the study subjects.
Eigh th	Reviewing the assignment of the previous session. Teaching healthy relationships and how to gain it and the concept of caress and its types with some examples. Assigning tasks for the study subjects.
Nin th	Reviewing the assignment of the previous session. Explaining three parts of the brain (reptilian brain, limbic system, neocortex brain) and their effects on relationships (the group members provided examples of their family discords, and then tried to explore different ways to resolve them). Assigning tasks for the study subjects.
Ten th	Reviewing the learned concepts, collecting, summarizing, and answering the study participants' questions, evaluating the entire sessions, thanking and appreciating members for attending, Post-test implementation, and coordinating for the follow-up session for a month later.

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the lowest is 21, with higher scores indicating greater burnout. The questionnaires with scores ranged from 0.84 to 0.90 are considered as valid variables [27]. In the Adibrad study, the test-retest reliability coefficient of this scale was calculated as 0.89 for a month, 0.76 for two months, and 0.66 for three months. Its alpha coefficient was reported to be between 0.91 and 0.93 [28]. Furthermore, Ebadatpour et al. reported the reliability of the questionnaire equal to 0.81 using Cronbach's alpha coefficient [29].

3. Results

According to Table 2, the mean age of the experimental and control groups was 39.95 and 38.60 years, respectively. The mean marriage duration in the experimental and control groups was 10 and 9.45 years, respectively. The mean duration of the disease of the participants in the experimental and control groups was 3.05 and 3.45

years, respectively. Table 2 demonstrates data on marital and illness characteristics.

Table 3 summarizes the Mean±SD values of couple burnout and its components at Pre-test, Post-test, and follow-up stages in the experimental and control groups. According to this table, the mean scores of couple burnout for the experimental group (TA recipients) in the Pre-test was 78.25, in the Post-test was 46.20, and in the follow-up was 45.95. The mean value of this variable for the control group are also presented in Table 3. The scores of control group subjects in the couple burnout variable and its components did not significantly change at different testing stages. To determine whether the changes in the experimental group at the Post-test and follow-up stages were statistically significant, the repeated-measures ANOVA was used, considering if its assumptions were met, i.e. the normal distribution of data and homogeneity of variances. The Kolmogorov-

Table 2. Mean and standard deviation scores of age, marital and illness duration of the study subjects

Variable	Mean±SD	
	Experimental	Control
Age, y	39.95±5.15	38.60±4.05
Marital duration, y	10±5.18	9.45±4.27
Illness duration, y	3.05	3.45±1.19

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Table 3. Mean and standard deviation values of couple attachment and its components in Pre-test, Post-test, and follow-up stages

Variable	Component	Stage	Mean±SD	
			Control	Experimental
Couple Burnout	Physical exhaustion	Pre-test	25.70±3.09	25.80±3.36
		Post-test	15.80±2.44	27.75±3.02
		Follow-up	15.45±2.18	27.45±3.18
	Emotional exhaustion	Pre-test	27.35±2.39	27.45±2.25
		Post-test	16.15±2.43	27.90±2.38
		Follow-up	15.75±2.42	27.65±2.49
	Mental exhaustion	Pre-test	25.20±2.62	26±4.88
		Post-test	14.25±3.86	28±4.10
		Follow-up	14.75±3.76	27.70±4.18
	Total score	Pre-test	78.25±5.57	79.25±9.16
		Post-test	46.20±5.80	83.65±7.81
		Follow-up	45.95±6.05	82.80±7.99

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Smirnov test data suggested no significant difference between the two study groups in couple burnout and its components; accordingly, the data were normally distributed ($P<0.05$). Levene's test results revealed no significant difference between the two groups' variances ($P<0.05$).

Table 4 presents the results of repeated-measures ANOVA for examining inter- and intra-group effects. It presents the F value was significant for the couple burnout and its components over time ($P<0.01$). Therefore, there were significant differences among the scores of three stages of the Pre-test, Post-test, and follow-up in this variable and its components (Table 5). Moreover, the difference between the two groups was significant ($P<0.01$). The mean score of couple burnout and

its components in the experimental group were lower than those of the control group at the Post-test and follow-up stages. The effect size of the treatment was 73% on couple fatigue, 67% on physical exhaustion, 74% on emotional exhaustion, and 60% on mental exhaustion.

Table 5 indicates a significant difference between couple burnout and all its components in Pre-test and Post-test, as well as between Pre-test and follow-up stages ($P<0.01$). Considering the mean scores of this variable and its components in these three stages, the mean value of couple burnout and its components in the experimental group decreased in the Post-test and follow-up stages.

Table 4. Results of repeated-measures ANOVA of inter- and intra-group effects

Effects	Source	Variable	Sum of squares	df	Mean of squares	F	P	Effect size
Inter-groups	Time	Physical exhaustion	458.61	1.06	428.86	44.24	0.001	
		Emotional exhaustion	819.81	1.05	774.70	101.28	0.001	
		Mental exhaustion	522.35	1.26	414.45	27.70	0.001	
		Couple burnout	5307.35	1.10	4789.19	94.11	0.001	
	Error	Physical exhaustion	393.93	40.63	9.69			
		Emotional exhaustion	307.56	40.21	7.64			
		Mental exhaustion	716.43	47.89	14.95			
		Couple burnout	2143.06	42.11	5.88			
Intra-group	Group	Physical exhaustion	1958.00	1	1928.00	127.56	0.001	0.67
		Emotional exhaustion	1880.20	1	1880.20	204.96	0.001	0.74
		Mental exhaustion	2520.83	1	2520.83	89.15	0.001	0.60
		Couple burnout	18900.3	1	18900.3	191.30	0.001	0.73
	Error	Physical exhaustion	574.31	38	15.11			
		Emotional exhaustion	348.58	38	9.17			
		Mental exhaustion	1075.46	38	28.27			
		Couple burnout	3754.33	38	98.79			

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Table 5. Bonferroni test results for pairwise comparisons of the measurement steps in the dependent variables

Variables	I Stage	J Stage	Mean Difference (I-J)	Standard error	P
Physical exhaustion	Pre-test	Post-test	3.97	0.619	0.001
	Pre-test	Follow-up	4.30	0.620	0.001
	Post-test	Post-test	0.325	0.099	0.006
Emotional exhaustion	Pre-test	Follow-up	5.37	0.547	0.001
	Pre-test	Follow-up	5.70	0.550	0.001
	Post-test	Follow-up	0.325	0.075	0.001
Mental exhaustion	Pre-test	Post-test	4.47	0.818	0.001
	Pre-test	Follow-up	4.37	0.809	0.001
	Post-test	Follow-up	-0.100	0.300	0.001
Total score	Pre-test	Post-test	13.82	1.44	0.001
	Pre-test	Follow-up	14.37	1.42	0.001
	Post-test	Follow-up	0.550	0.317	0.271

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4. Discussion

The present study revealed that TA significantly reduced the total score of couple burnout and its components, physical exhaustion, emotional exhaustion,

and mental exhaustion in the experimental group, compared to the controls. The present study findings were in line with those of Tizdast and Jafari Senejani [30], Van Rijn et al., [31], Alkasir et al., [24], Mostafavi et al., [25], and Nayeri and associates [26]. Ostovar et

al. studied the impact of attending counter-behavior analysis consultation group meetings on couple burnout, adjustment, and intimacy. Their results indicated that the counter-behavior analysis approach increased marital intimacy and adjustment and reduced couple burnout [32]. Amini et al. documented that communication skills training across the counter behavioral analysis approaches significantly reduced marital conflict and its components [33]. Sodani et al. examined the effects of cross-behavior analysis training on enhancing the performance of maladaptive marital. The related findings revealed that counter-behavioral analysis training increased overall family function and its domains in the experimental group, compared to controls [34].

According to the obtained data, providing TA training to ill women could modify their relationship with their spouses. The training positively modifies the aggravating variables of couple burnout, such as conflicting demands, the excessive burdens of responsibilities, family commitments, as well as the lack of diversity and appreciation. Thus, in TA, individuals become more aware of their psychological states and patterns. Besides, after achieving self-knowledge, they could develop new patterns for themselves. It seems a sense of confidence increased in them for improvement. Contradictory demands are among the variables that exacerbate couple burnout. In TA, when people recognize the adult dimension of their personality, they probably can change their contradictory demands to sensible demands. Besides, when they recognize the parent dimension of their personality as their negative controller, they can be free of the pressures of family commitments to signify "musts" in meeting expectations.

Accordingly, understanding the "adult dimension of personality" and its application could prevent another cause of couple burnout, i.e. an inconsistency between the expectations and reality. This is because the "adult dimension of personality" acts as a computer to analyze data and conform them to the realities. According to Pines, another reason for couple burnout is a lack of diversity in life. Furthermore, TA introduces the concept of rejection, that one follows a constant routine process due to expelling one or more of their mental states. Recognizing this condition brings the lost dimensions of personality back to the mental structure of individuals. Thus, using all mental states, the diversity returns to marital relationships and saves the relationships from fatigue and monotony. The theoretical foundations of couple burnout suggested that disillusioned individuals have no hope to improve their relationships and have a negative attitude toward relationships, especially a

spouse. moreover, TA theory refers to foreground notions that affect relationships and thoughts since childhood, which carry messages, such as "you cannot," "do not think," and "do not be important." However, altering these messages could reduce frustration, negativity, and lead to improving the relationships [35].

Therapists consider that one way to resolve conflicts and disagreements between spouses is setting time to be alone together, as the schedule is among the most practical issues in transactional analysis. Therefore, the trained individuals could organize their time with their spouses more efficiently and contribute to resolving their conflicts. Creating complementary relationships is among the most essential functions of proper communication. Upset people may feel that although they try hard, they can never achieve their intended result, they get angry earlier than usual, and they have lost the ability to have fun and lack a sense of humor. In complementary relationships, due to using "ego" on time and the parallel lines of the relationship, the mentioned feelings could be appropriately used in communication. Educating such ability to individuals could reduce their couple burnout [36].

A study limitation should be considered in generalizing the results to other populations, as it was performed only on obese women with type 2 diabetes in two towns of Gonbad Kavous. The applied research instruments were another study limitation that must be concerned. In most behavioral science investigations, many interfered variables simultaneously intervene in the study and the intervention effectiveness concerning specific independent variables. Such variables are often difficult to identify, and their effects are tough to remove. Therefore, overlooking the impacts of these factors may lead to the reduced repeatability of achieved results. Conducting follow-up tests is necessary to evaluate the long-term effects of the interfered variables. Thus, the follow-up was performed to investigate the intervention's stability.

The obtained data supported that the TA intervention significantly reduced couple burnout and its components, i.e. physical exhaustion, emotional exhaustion, and psychological exhaustion. Therefore, TA is an appropriate intervention to reduce marital problems in obese female diabetics. Consequently, it is recommended that psychologists and family counselors use the therapeutic components of the TA approach to reduce couple burnout in obese diabetic patients.



Ethical Considerations

Compliance with ethical guidelines

In this study, necessary ethical considerations were noticed, such as explaining the research purposes, participation consent form provided by the study subjects, participation was voluntarily in the study, the study subjects had the right to discontinue study participation; harmless intervention, answering all questions, and the results were provided to the study participants if desired.

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Authors' contributions

All authors contributed in preparing this article.

Conflict of interest

The authors declared no conflicts of interest.

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