



Changing Smoking Behavior in Patients with Borderline Personality Disorder: Psychological Therapy Outcomes Based on Stages of Behavior Change

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A B S T R A C T

Psychology is trying to find the best possible treatment for any personality type. People who have borderline personality disorder are people who need to pay attention to behavioral and cognitive problems. Accordingly, in this research, the messages related to the treatment of behavior change in changing smoking behavior in patients with borderline personality disorder. This research is one of the quasi-experimental research projects that have been conducted throughout Iran. The data were collected from those who referred to the counseling centers for the treatment of smoking. The BPI borderline personality questionnaire is used for the visitors and the MATS questionnaire is used to evaluate the smoking attitude. The research samples were divided into two control and experimental groups by matching method. 6-step group intervention of behavior change was implemented in the experimental group and the control group continued their treatment according to the usual counseling center. In total, the data showed that the 6-stage change of behavior was more effective in changing the attitude and quitting smoking of people with borderline personality disorder than the usual treatment of counseling centers. Therefore, it can be concluded that behavior change is able to change behavior in people with borderline personality due to long and structured treatment.

Keywords: Behavior Change, Smoking Behavior Change, Borderline Personality Disorder, Psychological Therapy, Stages of Behavior Change.

INTRODUCTION

Borderline personality disorder is a complex and serious mental disorder characterized by rapid and intense mood changes, impulsivity, self-harming behaviors, fear of abandonment, feeling of emptiness, unstable relationships, and fluctuating self-image (Bohus et al., 2021; Gunderson, Herpertz, Skodol, Torgersen, & Zanarini, 2018; Leichsenring, Leibing, Kruse, New, & Leweke, 2011; Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004; Oldham, 2006; Perrotta, 2020; Zittel Conklin & Westen, 2005). Borderline patients often report repeated early, multiple, and chronic conflicts and potentially

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To cite this article: Shekarian Yazd, F. Bahrainian, S. A., Rezaei, M. (2024). Changing Smoking Behavior in Patients with Borderline Personality Disorder: Psychological Therapy Outcomes Based on Stages of Behavior Change. *Iranian Journal of Positive Psychology*, 10 (1), 5-10.

damaging experiences such as recurrent physical or sexual abuse or emotional and physical neglect ([Goodman & Yehuda, 2002](#); [Johnson, Lumley, Cheavens, & McKernan, 2020](#); [Ogata et al., 1990](#); [Tate et al., 2022](#); [Ten Have et al., 2016](#)); therefore, prolonged exposure to negative emotions may increase the likelihood of substance abuse. In fact, there is a bidirectional relationship between borderline personality disorder and unhealthy substance use, including smoking, and this overlap is rarely coincidental; as one of the diagnostic criteria for borderline personality disorder may include substance abuse, which is indicative of impulsivity. Nevertheless, a strong association between substance abuse and borderline personality disorder has been reported ([Black, 2022](#); [Elliott & Smith, 2020](#); [Tyrer, Reed, & Crawford, 2015](#)).

Therefore, it is necessary for this group of patients to undergo cognitive-behavioral therapies in order to experience a healthy life; ultimately ensuring the individual and society remain protected from mental and physical harm.

In this regard, numerous studies have been conducted on the relationship between smoking and various neurocognitive, cognitive-emotional, social, and behavioral dimensions, among which motivational aspects are among the most important aspects of the phenomenon of smoking ([Cooperman, Lu, Richter, Bernstein, & Williams, 2016](#); [Lujic, Reuter, & Netter, 2005](#); [Ten Have et al., 2016](#); [Tyrer et al., 2015](#)). Additionally, several different cognitive-behavioral treatment protocols have been designed in the field of addiction ([Carroll, 1998](#); [Day, Leech, & Goldschmidt, 2011](#); [Magill et al., 2020](#); [McHugh, Hearon, & Otto, 2010](#); [Waldron & Kaminer, 2004](#)).

One of the most common and successful treatments for addiction-related disorders in various cognitive-behavioral therapies is Cognitive-Behavioral Therapy (CBT) ([Marlatt & Witkiewitz, 2005](#)). The trans-theoretical approach based on the research of Prochaska, DiClemente, and Norcross (1993), and Prochaska, Norcross, and DiClemente (2013), is based on Bandura's cognitive-social theory. According to this theory, change processes are classified into two groups; the first group consists of experiential processes that focus on internal cognitive processes and how a person perceives their situation.

These processes are most suitable for the initial stages of change. The second group consists of behavioral processes that focus on behavior and action and are more important for later stages of change.

The development of effective behavioral solutions to cope with chronic health conditions, mental health problems, financial issues, and harmful behaviors has had an impact. Many of the problems observed in today's society can be directly or indirectly linked to human behavior. Disability and chronic conditions such as obesity, cancer, substance abuse, and cardiovascular diseases are among them ([DiClemente, Nidecker, & Bellack, 2008](#); [Disease & Cluster, 2002](#); [Hilburger, 1995](#)). However, transitioning from existing unhealthy behaviors to new and positive behaviors is never easy. Therefore, the research premise was based on the belief that stages of behavior change is a continuous and institutionalized method that can effectively promote physical and mental health development in individuals with borderline personality disorder who are seeking to quit smoking by maintaining and institutionalizing proper behavior.

METHODOLOGY

A quasi-experimental method was used to conduct the research. The research participants included samples that were selected purposefully using sampling methods. Based on this, individuals who were smokers visiting counseling centers in different cities in Iran underwent a personality disorder test. If they met the criteria for mild borderline personality traits, they were selected for clinical interviews and distribution of relevant tests. Both smokers and non-smokers were selected and divided into two groups: individual therapy and group therapy based on the

stages of change. The control group received individual treatment for smoking cessation at counseling centers, while the experimental group received group intervention based on the stages of change. The Borderline Personality Inventory (BPI) and the Multidimensional Attitudes Toward Smoking (MATS) questionnaires were used to collect and evaluate data on borderline personality traits and smoking behaviors.

The BPI questionnaire was designed to assess borderline personality traits in clinical and non-clinical samples. It contains 53 questions based on Kernberg's definition of borderline personality and DSM-IV diagnostic criteria. The Iranian version removed two questions from the original questionnaire. The MATS questionnaire aims to evaluate individuals' attitudes toward smoking and was created in 2000. It uses a five-point Likert scale and has demonstrated validity, reliability, and scoring methods.

Once the smoking participants visiting counseling centers were evaluated for borderline personality traits using the BPI questionnaire, and with the participants' consent and ethical research principles, they were assigned to either individual counseling (standard treatment) or group counseling (change-based treatment) over a period of six months. The group receiving change-based treatment was continuously exposed to behavior change interventions based on the Prochaska et al. (1993) model. The stages of changing behavior were as follows.

Stage One | Contemplation: In this stage, the individual is aware that they need to quit smoking but does not find the necessary motivation to do so. They may be thinking about the last time they tried to quit smoking and failed. Only when the individual understands the benefits of making a change can they move on to the next stage.

Stage Two | Contemplation: During this stage, individuals become more aware of the potential benefits of making a change. To progress through this stage, which is considered the most challenging in theoretical bases, the therapist focuses on reducing conflicts and ambivalence about behavior change and facilitating the possibility of change in the best possible way. The key point to move from this stage to the next stage is the transformation of an abstract idea into a belief. In fact, the therapist tries to convince the patient to shift from the idea that quitting smoking is good and beneficial for health to the belief that "smoking is a harmful act for the body and mind and must be quit."

Stage Three | Preparation: In this stage, the therapist guides the patient in planning. This stage may involve initiating small changes to quit smoking. For example, the patient is taught to identify the times and situations that trigger smoking and consider alternatives such as chewing gum.

Stage Four | Action: In this stage, the patient is taught how to give enough time between each new step taken towards behavior change and to pause their efforts after a while. They are encouraged to reward themselves even for small progress to avoid feeling discouraged. Patients are reminded that in this stage, their family and friends may see their willingness for change, but the truth is that they have started the change process long before. It is emphasized to them that if they know someone who suddenly changed their habits, that person probably had been thinking about change for a long time. Initially, individuals complete stages 1 to 3, but no one may notice they are undergoing them. As a result, visible changes will be observed from this stage.

Stage Five | Maintenance: After spending some time in the action stage, the patient enters the maintenance stage, which involves consciously avoiding old behaviors and maintaining new ones. In this stage, therapists educate patients to seek ways to resist temptation, replace old habits with positive actions, and reward themselves when successfully preventing relapse.

Stage Six | Relapse or Termination: In any behavior change, relapse is a common occurrence and a part of the process. In this stage, patients are taught to identify the barriers to success in behavior change when feeling a sense of failure and learn how to address them. Efforts

are made to prevent setbacks from destroying their self-confidence. If they revert to their old behavior, they are advised to reflect on what caused the relapse and how to prevent it from happening. Patients are encouraged to evaluate their resources and methods for behavior change in this stage, increase their chances of success through proper planning. In essence, this stage entails a full commitment to the new habit and ensuring that the individual never returns to the previous state. Someone who used to smoke in the past may still find it challenging to resist smoking even after a year has passed. It may take years for individuals to truly reach the termination stage. The likelihood of these individuals relapsing to smoking is as high as those who have never smoked.

After completing the stages of behavioral change, the participants were re-evaluated in terms of smoking behavior and willingness to smoke. Participants were encouraged to express their willingness and behavior regarding smoking without bias and based on the realities in their minds and behaviors. Research data, which were normally distributed, were analyzed using analysis of covariance.

RESULTS

A total of 4268 individuals were initially evaluated in this study, and then 468 individuals were involved in the intervention research process. Descriptive information of the research variables, including borderline personality status and attitude towards smoking among the participants, is presented in the table below.

Table 1. Mean and standard deviation of the research variables in the pre-test

	Control group		Experimental group	
	Mean	Std. Deviation	Mean	Std. Deviation
Borderline Personality Disorder	18.2	0.858	18.6	0.861
Smoking Behavior Change	73.74	6.617	71.89	6.327

According to the above table, the average borderline personality in the pre-test control group is 18.2, and the mean borderline personality in the pre-test experimental group is 18.6. Also, the mean attitude towards smoking in the pre-test control group is 73.74 and in the experimental group is 71.89.

Table 2. Mean and standard deviation of the research variables in the post-test

	Control group		Experimental group	
	Mean	Std. Deviation	Mean	Std. Deviation
Borderline Personality Disorder	31.6	0.537	28.4	0.657
Smoking Behavior Change	59.62	5.266	28.19	4.269

In the post-test borderline personality, the mean for the control group is 31.6 and the mean for the experimental group is 28.4. In the post-test, the attitude towards smoking in the control group is 59.62 and in the experimental group is 28.19.

Table 3. Covariance analysis results for comparing smoking attitude scores in the post-test experimental and control groups

Effect	Test	Value	F	Sig.	Eta
Group	Pillai's trace	1.435	22.01	0.001	0.717
	Wilks' lambda	0.066	24.116	0.001	0.743
	Hotelling trace	6.567	26.269	0.001	0.767
	Roy's largest root	5.069	43.931	0.001	0.835

Based on the comparison of research interventions, there is a significant difference between group-based stage-based change interventions and individual interventions in the usual

counseling centers. The significant levels regarding attitude towards smoking are equal to 0.001, implying that the error in comparing the effectiveness of the intervention in the research variable is less than 5%. Accordingly, the primary assumption of the research about the effectiveness of behavior change intervention based on significant changes in smoking behaviors in patients with borderline personality disorder has been meaningful.

Table 4. The results of ANCOVA analysis to compare attitudes towards smoking grades in the post-test of the experimental and control groups

Sources	Sum of Squares	df	Mean squares	F	Sig.	Eta
Group	21934.867	1	10967.33	19.518	0.001	0.591
Error	15171.8	764	561.919			
Total	673670	766				

According to the observations matching the above table, it indicates that based on the values of $F=19.518$ and $p=0.001$, there is a difference in the post-test grades of attitudes towards smoking in the behavioral change-based treatment group and the usual individual intervention counseling centers.

CONCLUSION

The findings of conducting the 6-stage theoretical model (stages of change in smoking behaviors) show that this approach is effective for patients with mild borderline personality disorder symptoms or those in recovery, when done in a group format. It seems that when psychotherapists try to implement actions for these patients, they likely engage them and motivate clients to leave behind their resistance to leave behind their discordance. Therapeutic relationships align with behavioral change stages. It is worth noting that most of our patients are female, and for generalizability to all patients (male and female), we may need clinical trials for both genders.

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