Original Article

Difficulties in Emotion Regulation, Psychological Well-Being, and Hypersexuality in Patients With Substance Use Disorder in Iran

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Abstract

Background: Hypersexual disorder is described as multiple unsuccessful attempts to control or diminish the amount of time spent on engaging in sexual fantasies, urges, and behaviors in response to dysphoric mood states or stressful life events.

Objectives: This study aimed at evaluating difficulties in the regulation of emotion, psychological well-being, and socio-economic status in explaining the dimensions of hypersexuality in patients with substance use disorder.

Methods: The data presented here was obtained from a total of 285 individuals with substance use disorders, who were selected via a multi-cluster sampling method from residential treatment centers of drug abuse in the city of Tabriz, Iran, during years 2015 to 2016. Instruments used for collecting the required data were Hypersexual Behavior Inventory (HBI), Difficulties in Emotion Regulation Scale (DERS) as well as the Ryff Scale of Psychological Well-Being (RSPWB).

Results: Findings showed there were significant relationships between hyper sexuality and difficulties in emotion regulation (r = 0.44, P < 0.01) and also between hyper sexuality and psychological well-being (r = -0.44, P < 0.01). The suggested model consists of suitable fitness with the data, and factors of difficulty in regulation of emotion, psychological well-being, and socio-economic status could effectively explain the dimensions of hypersexuality in individuals with substance use disorder (GFI = 0.91, AGFI = 0.87, CFI = 0.96, and RMSEA = 0.063).

Conclusions: Results of this study provided sufficient evidence to support this model to explain the behavior of hypersexuality in individuals with substance use disorder and clinical practice could be based on this evidence. Specific treatment programs for people with addiction should be designed to prevent problems associated with relapse.

Keywords: Emotional Regulation, Hyper Sexuality, Psychological Well-Being, Socioeconomic Status, Substance Abuse Disorder

1. Background

Addicted individuals are considered vulnerable in today's societies. Their lifestyle leads to many psychological problems and emotional difficulties that inevitably affect how they live. As well as the psychological problems and emotional difficulties, the adverse influence of addiction on health and well-being can have a major impact on the overall level of social and economic factors (1). Addicted individuals frequently display negative emotions, such as aggression, anxiety, worry, and sadness. They could perform regulatory with compensatory actions to avoid various problems, concerns, and negative emotions (2). The concept of hypersexual behavior is deemed a developing area of study, and has received the greatest attention from mental health professionals and relevant researchers during the recent decades (3).

Hypersexual behavior, which is also known as sexual addiction, sexual compulsivity or sexual impulsivity, is a condition comprised of sexual fantasies, urges, and behaviors, which can hardly be controlled and may cause problems in the lives of individuals (4). Kafka defined hypersexual disorder as a sexual impulse disorder, which exhibits a marked increase in the regularity and greatness of sexual day-dreaming, arousals, and desires that correspond to expressive behavior in relation to an impulsivity component (5). It is greatly prevalent in males, and is generally known to begin when the individual enters the stage of adolescence and early adulthood. It also acquires an enduring course (6). Its rate of prevalence among the general population is estimated as between 3% and 6% (7), while higher rates are observed among specific populations, such as sexual offenders and people with Human Immunodeficiency (HIV) (8). Hypersexual Disorder (HD) has not been recognized as a discrete mental disorder in DSM-5, yet clinicians have emphasized the useful functions of dealing with this disorder and have carried out precise evaluations leading

to its complete description in relation to aspects of its management.

Some of the features of HD and Substance Use Disorders (SUDs) are known to overlap. These are characterized by recurrent patterns, which include the seeking of short-term rewards (i.e. orgasm by HD or achieving the "high" by SUDs) in spite of the possible adverse effects (e.g. harming the self and others physically or emotionally), and frustrated efforts to contain and limit the behavior (5). Numerous studies describe hypersexual behaviors as uncontrollable sexual behaviors that are typical of addiction, and hypothesize that sexual relationships are abused with the aim of reaching emotional stability, and that the behavior could progress towards the tolerance stage, which is the same pattern that occurs in case of drug addiction (9, 10).

Difficulties in regulating emotions are fundamental features of many psychiatric disorders and have been recognized as important determining factors in research related to drug abuse (2). Previous literature has indicated the potential use of sex as a maladaptive approach, which can alleviate stressful mood conditions or hamper stress (11). Moreover, individuals with hypersexual disorder exhibit several ineffective efforts to manage or reduce the time an individual spends on obsessions with sexual urges, fantasies, and behaviors as the answer to difficult mood conditions or stressful events that occur in life (5).

By considering the close relationship between emotional regulation and the well-being of individuals, (12), it could be understood that psychological well-being is another factor, to which a portion of problems concerning hypersexual behavior can be inter-related. Psychological well-being is a part of sexual health, as it is affected by environmental change and the mechanism of emotional regulation in individuals (13). In fact, a wave of research has focused on the dynamic patterns of emotional experience and stable forms of psychological well-being and psychopathology, which have explained the interactions between these factors (14). On the other hand, environmental factors besides personal factors affect the mental health of individuals. In particular, the role of Socioeconomic Status (SES) on various psychological disorders and high-risk behavior is quite obvious (15) and a bilateral correlation is found between SES and mental disorders: Having mental disorder entails a lower income and the opportunity for employment, which raises the risk of poverty and consequently adds to the likeliness of further mental disorder (15).

There are similar neurobiological and psychological mechanisms involved in HD and SUDs (16), and there is a high prevalence of hypersexual behavior among individuals with drug abuse disorders (6). By considering the fundamental role of emotional problems and psychological well-being in the onset and continuance of various disorders and psychopathology, this research tried to evaluate difficulties in emotional regulation, psychological well-being, and SES of drug addicts with hypersexual behaviors. This research aimed at exploring the extent to which difficulties in emotional regulation, psychological well-being and SES describe the dimensions of hypersexual behavior. Finally, a model was presented to explain this disorder.

2. Objectives

The current study aimed at evaluating the role of difficulties in the regulation of emotion, psychological well-being, and socio-economic status in the dimensions of hypersexuality in patients with substance use disorders.

3. Materials and Methods

3.1. Participants

The statistical population under the study of this research comprised of all individuals with SUDs in mid-term residential treatment centers of rehabilitation in the city of Tabriz, during years 2015 to 2016. A total of 285 individuals from these rehabilitation centers were selected as samples via the method of simple-random-cluster sampling. In the first step, after obtaining a complete list of all rehabilitation centers in the province, 6 centers were selected randomly. The criteria to enter this research was a suitable general condition after passing the period of detoxification for entering the test, having literacy (being able to read and write) and not having psychiatric disorders, such as psychosis. Also, other disorders that accompanied SUDs were controlled through clinical-discrimination interviews by a general physician of the rehabilitation center and a psychologist. Therefore, sample individuals, who did not meet the aforementioned requirements were excluded from the study. The method of performing the research was to explain the objectives of the research to the individuals, who were selected as samples, and to gain their consent for participation in the study. Descriptions about the process and method of performing the tests were given, and the participants filled the questionnaires of the research, individually.

3.2. Measures

3.2.1. Hypersexual Behavior Inventory

The hypersexual behavior inventory was developed by Reid et al. in 2011 to accurately measure the behavior of people involved in HD (17). This scale consists of 19 self-report items of hypersexual behavior in three dimensions (control, consequences, and coping). Statements are rated

by the respondent on a Likert scale ranging from 1 (never) to 5 (very often). Items are summed to yield a total HBI score, with scores of 53 and above estimated to indicate that the respondent has significant problems with hypersexuality. The validation analysis scale is calculated using Cronbach's alpha coefficient, and a high internal validity was achieved for the overall scale (0.90) and subscales (control α = 0.94, coping α = 0.90, and consequences α = 0.87). The original inventory of hypersexual behavior in the Iranian population was translated to English by two professors of English language and was then back translated to Persian. The back-translation was then checked by the authors. In this study, Cronbach's alpha coefficient for the 3 subscales of control, consequences, coping and total score, were respectively 0.82, 0.80, 0.86, and 0.90, and the confirmatory factor analysis had appropriate fitness (GFI = 0.91, AGFI = 0.88, CFI = 0.98, RMSEA = 0.057).

3.2.2. Difficulties in the Emotion Regulation Scale

The Difficulties in the Emotion Regulation Scale (DERS) by Gratz and Roemer was built in 2004 to evaluate emotional dysregulation. This scale consists of 36 items, with the items scoring done using a Likert scale. Higher scores indicate more difficulties in emotional regulation and it is made of 6 subscales of "rejection of emotional responses, difficulty with impulse control, and difficulty in engaging in goal directed behavior, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity". Encountering problems upon any of the mentioned fields denote difficulties in emotion regulation. The results imply that the DERS maintains an internal consistency that is relatively high, and that it is a feasible test-retest method, which requires sufficient construct and prognostic validation [18]. The factor structure of psychometric characteristics of scale has been conducted on an Iranian population by Khanzadeh et al. when testing students residing in Shiraz; Cronbach's alpha coefficients of subscales ranged between 0.86 and 0.88 and the reliability coefficient test of the test-retest fluctuated between 0.79 and 0.91 after a week [19].

3.2.3. Ryff Scale of Psychological Well-Being

This scale was designed by Ryff (1980), and the original form consisted of 120 questions, yet in later studies, shorter forms of 48 and 54 questions as well as an 18-question short form was provided. In this research, the 18-item form was used. This questionnaire measures psychological well-being and has 6 subscales of self-acceptance, positive relation with others, purposeful life, personal growth, and dominance on the environment with 3 statements in each subscale. This questionnaire is provided for adults and each participant should rate his acceptance on a 6-point rating (1 = completely opposed to 6 = completely accepted). Reliability and validity of each statement have been reported in various studies [20]. In Iran, Khanjani et al. studied the function of factor structure besides psychometric properties of the short form pertaining to Psychological Well-Being Scale of Ryff when considering internal consistency of students' factors among the scale, by applying Cronbach's alpha, which ranged between 0.51 and 0.76, in addition to examining the factor structure, where factor analysis was used. The results showed that there are 6 factors present in Psychological Well-Being, which fit appropriately with the data [21].

3.2.4. The Socio-Economic Questionnaire

This questionnaire was a researcher made measure, according to the existing research literature. The socio-economic status is evaluated based on three questions. The economic situation is coded in five class statuses (from very bad to very good) and the education of parents (from illiterate to doctorate) is described in five categories. In this questionnaire, one question was about the economic situation and two questions were raised in relation to the education of the parents.

3.3. Data Analysis

Performing all statistical analyses was done using the SPSS software version 22 and LISREL version 8.80, with descriptive statistics, Pearson correlation and the structural equation modeling used for the analysis.

4. Results

Participants were either educated up to primary school (25.3%), elementary school (36.1%), secondary school (29.1%), college degree (4.6%), BSc. or BA degree (3.9%), MSc. or MA degree (0.4%), or PhD degree (0.7%). The marital statuses of participants were as follows, 47% single, 42.1% married, and 10.9% separated. Based on the substance used, there were 8 substances, including opium (17.5%), cannabis (4.2%), heroin (24.9%), methadone (6.3%), psychotropic substances and stimulants (5.6%), methamphetamine (21.4%), cocaine (2.5%), and multiple drugs (17.5%). Also, the economic status of the participants' families was categorized to 5 groups, including the economic status of very bad (15.8%), bad (22.1%), average (44.6%), good (14%), and very good (3.5%). The range of the participants' age was between 20 and 68, averaging 35.24, with a standard deviation of 8.03 years.

Mean values and standard deviations corresponding to the variables under study are shown in Table 1.

Table 1. Mean and Standard Deviation Scores the Participants in the Research Variables Under Study

Variables	N = 285		Variables	N = 285	
	M	SD		M	SD
Rejection of emotional responses	20.00	5.36	Environmental mastery	11.78	3.62
Difficulties engaging in goal-directed behavior	16.95	4.25	Personal growth	11.16	3.47
Difficulty with impulse control	19.38	5.37	Positive relations with others	12.29	4.02
Lack of emotional awareness	18.41	4.58	Purpose in life	11.59	3.64
Limited access to emotion regulation strategies	24.75	6.14	Total (RSPWB)	70.59	13.76
Lack of emotional clarity	15.04	4.45	Control	20.93	8.23
Total (DERS)	114.55	21.58	Consequences	9.52	4.43
Self-acceptance	10.74	3.77	Coping	17.16	7.34
Autonomy	13.00	3.36	Total (HBI)	47.62	18.40

Abbreviations: DERS, Difficulties in Emotion Regulation Scale; RSPWB, Psychological Well-Being; HBI, Hypersexual Behavior Inventory

Correlation matrix difficulty in regulating emotions and psychological well-being with dimensions of hypersexual Behavior are presented in Table 2.

All self-report measures were observed to be statistically significant and were known to correlate with each other internally. This was consistent with the proposed model linking difficulties in emotional regulation and psychological well-being to hypersexual behavior. Addicts with greater Difficulties in Emotion Regulation (DERS) reported greater levels of current hypersexual behavior, including coping (r = 0.38, P < 0.01), consequences (r = 0.41, P < 0.01), and control (r = 0.42, P < 0.01). Whereas addicts with lower psychological well-being were more likely to engage in hypersexual behaviors (r = -0.44, P < 0.01).

For maximum likelihood, the estimation to evaluate the model of indicators Chi-square (χ^2), the ratio of the degrees of freedom chi-square ($\chi^{2/df}$), Root Mean Square Error of Approximation (RMSEA), adjusted goodness of fit index (AGFI), goodness of fit index (GFI), comparative fit index (CFI), and the Root Mean Square Residual (RMR) were used (Table 3). If χ^2 is not significant a very good fit of the model is indicated; while if the sample size increases and a fixed quantity of degrees of freedom exists, the χ^2 value increases likewise. However, the reduction in sample size causes the χ^2 value to be decreased as well. This makes the model test show levels of probability that in this case are not significant, while there is still an inconsistency among the sample and the covariance matrix pertaining to the model-implied, which is deemed substantial. As a result, there should not be much emphasis on the impact of the χ^2 statistic. A good model fit is one with the $\chi^{2/df}$ ratio that stays in its smallest possible value. There are no absolute standards, and thus when a ratio stands between 2 and 3, it

is a sign of a data-model fit, which is "good" or "acceptable" (22). If the indicators of GFI, AGFI, and GFI are larger than 0.90, the fit is very good. The RMSEA and RMR of less than 0.05 indicate that the fit is very good and very appropriate, and less than 0.08 implies a favorable fit (23).

4.1. Structural Model

The structural model exhibited data with a good fit: χ^2(127, N = 285) = 268.30, P < 0.001; GFI = 0.92; CFI = 0.96, and RMSEA = 0.063 (90% CI = 0.05 - 0.07). The results indicated that the effect of psychological well-being and socioeconomic status on hypersexual behavior was partially mediated by subscales of difficulties in emotion regulation (IMPULSE, GOALS, STRATEGIES, CLARITY, NON-ACCEPTANCE, and AWARENESS) (Figure 1).

The standardized direct effect of psychological well-being on hypersexual behavior was -0.40 and standardized direct effect of socioeconomic status on hypersexual behavior was 0.17. Psychological well-being and socioeconomic status had significant direct effects on difficulties in emotion regulation (-0.69, P = 0.001; 0.14, and P = 0.01). Finally, difficulties in emotion regulation applied a straight effect on the hypersexual behavior, which was statistically significant (0.26, P = 0.00).

5. Discussion

The current research explored the research history of HD and the role of emotional problems and psychological well-being in the onset and sustenance of HD and substance abuse, thereby modeling various dimensions of hypersexual disorder by considering difficulties in emotional regulation, psychological well-being, and SES of people

Table 2. Correlations of Difficulties in Emotion Regulation and Psychological Well-Being With Dimensions of Hypersexual Behavior

Variables	Coping	Consequences	Control	Total (HBI)
Rejection of emotional responses	0.27[a]	0.29[a]	0.30[a]	0.31[a]
Difficulties engaging in goal-directed Behavior	0.29[a]	0.32[a]	0.34[a]	0.34[a]
Difficulty with impulse control	0.35[a]	0.36[a]	0.38[a]	0.40[a]
Lack of emotional awareness	0.09	0.14[b]	0.11	0.12[b]
Limited access to emotion regulation strategies	0.36[a]	0.34[a]	0.35[a]	0.38[a]
Lack of emotional clarity	0.24[a]	0.27[a]	0.28[a]	0.29[a]
Total score (DERS)	0.38[a]	0.41[a]	0.42[a]	0.44[a]
Self-acceptance	-0.22[a]	-0.31[a]	-0.26[a]	0.28[a]
Autonomy	-0.02	-0.01	-0.02	-0.02
Environmental mastery	-0.30[a]	-0.38[a]	-0.31[a]	-0.35[a]
Personal growth	-0.34[a]	-0.36[a]	-0.30[a]	-0.36[a]
Positive relations with others	-0.32[a]	-0.41[a]	-0.33[a]	-0.38[a]
Purpose in life	-0.28[a]	-0.28[a]	-0.25[a]	-0.29[a]
Total score (RSPWB)	-0.39[a]	-0.47[a]	-0.39[a]	-0.44[a]

Abbreviations: DERS, Difficulties in Emotion Regulation Scale; RSPWB, Psychological Well-Being; HBI, Hypersexual Behavior Inventory.
[a] $P < 0.01$
[b] $P < 0.05$

Table 3. Fit Statistics for Measurement Models

Standardized RMR	RMR	RMSEA	CFI	AGFI	GFI	$\chi^{2/df}$	χ^2	Indicators of Model Fitting
0.060	1.10	0.063	0.96	0.87	0.91	2.07	268.30	Values of Index

with SUDs. The presented model has a suitable fitness with empirical data, and has been able to explain the role of difficulties in emotional regulation and psychological well-being in hypersexual disorder. The pathway to difficulties in emotional regulation has higher significance in relation to dimensions of hypersexual behavior. This is parallel to the history of research on hypersexual behavior, which hypothesizes that hypersexual behavior is a responsive behavior in compensation and is an effort to reduce symptoms of uncomfortable states in association with difficulties of affected regulation [e.g., see (24)].

Reid et al. studied patients seeking help for hypersexual behavior and reported that emotional unsteadiness, weakness against stress, and alexithymia are substantially seen in association with hypersexual behavior, and that certain aspects of alexithymia, the inability to identify and describe emotions, had a stronger correlation with the hypersexual disorder (11). Furthermore, evaluation of mindfulness, emotional dysregulation, impulsivity, and stress proneness in people with HD, as compared to normal people, revealed that people with HD have higher scores in problems with emotional regulation, compared to the

group of normal people (24).

Generally, recent research has focused on emotional problems by explaining various aspects of HD, and have reported it as a determining factor in HD, which is in agreement with the results of the current research (25, 26). Furthermore, a research by Tull et al. studied patients with SUDs residing in rehabilitation centers, who had participated in unsafe sexual behaviors during the past year (27). They found a significant correlation between an individual's difficulties in emotion regulation and their number of sexual partners, who offer drugs or money to receive sex. Specifically, the absence of clearness in the individual's emotion appeared as an exceptional predictive element of risky sexual behaviors (27).

Various researches have shown the different dimensions of emotion in pathological sexual behaviors. In particular, it has been reported that high levels of negative feelings could increase the individual's engagement in risky sexual behaviors (28, 29).

Results of the structural pattern relating to variables of psychological well-being show a negative correlation with hypersexual behavior, and people with SUDs, who ex-

Figure 1. Estimates of the Standardized Parameter Belonging to the Ultimate Structural Model of the Emotion Regulation Difficulties, Psychological Well-Being and Socio-Economic Status in Explaining Dimensions of Hypersexual Behavior
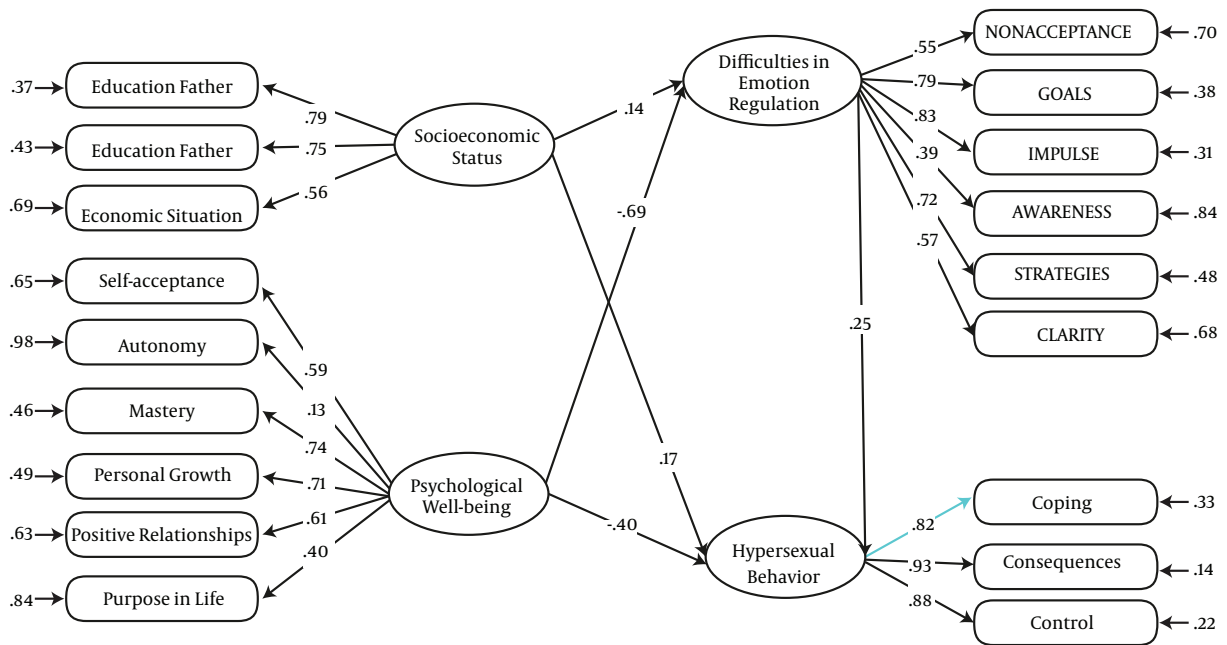
Chi-square = 268.30, df = 127, P-value = 0.00001, RMSEA = 0.063

hibited low qualities of psychological well-being, reported higher prevalence of hypersexual behaviors. This finding is consistent with the research of Doornwaard et al., who showed that lower psychological well-being and excessive sexual interest was an important factor in the spreading of an obsession when using internet material that is sexually open among male adolescents (30). In this study and also in other studies (31) it was shown that people with low psychological well-being participated in online sexual activities as a response to depression or anxious feelings and stressful situations.

It seems that people, who cannot coordinate their sexual behaviors within a normal spectrum, and in accordance with the accepted norms of the society, are likely to be socially secluded and report various psychopathological problems and issues related to well-being. For instance, a review analysis of four decades of research showed that homosexuals exhibit higher prevalence of psychological disorders, drug abuse, suicidal ideations, and self-harm (32). Also, pathway to socio-economic status has significance in relation to dimensions of hypersexual behavior. These results are consistent with previous studies, which have shown that lower socio-economic status is associated with greater risky sexual behaviors (33) and substance use among adults (34). A lower socio-economic sta-

tus could situate individuals at a more threatening risk of inferior health condition because of their infrequent access to health initiatives, poor conditions of life, and unwise knowledge regarding the adverse aftermaths of behaviors that place their health at risk, alongside stronger occurrences of stress that happen psychologically (35).

5.1. Conclusion

Results of this research are in line with the theoretical and empirical history of the discourse under study. It provides sufficient evidence for confirming this model regarding the interaction between problems of emotion regulation, psychological well-being, and low SES in explaining hypersexual behavior in people with SUDs. In clinical practice, by relying on such evidence, necessary measures can be taken to provide effective treatments to cure these people. With respect to the fact that the experimental group in this research comprised of people with SUDs, housed in short- and mid-term residential treatment centers of rehabilitation, diligent care must be taken in generalizing the results to other groups of people with HD. It is suggested for longitudinal studies to be used with larger sample groups (and also in more diverse groups) to evaluate this disorder more comprehensively, besides controlling precisely the biological factors, psychological, and so-

cial aspects involved therein, which will render more complete information regarding this disorder.

Acknowledgments

Footnotes

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