Original Article

Attachment Style and Its Relation to the Quality of Life and Readiness to Change Substance Use Behavior: A Causal-Comparative Study

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Abstract

Introduction: It is hypothesized that substance use disorder (SUD) has a correlation with attachment style and emotional regulation difficulties. The aim of the current study is to compare attachment style and quality of life (QOL) between patients with SUD and healthy subjects and to explore the role played by attachment style in predicting QOL and readiness to change (RTC) substance use behavior. Materials and Methods: this study is a causal-comparative study where 100 patients with SUD and 100 healthy subjects are selected using multi-stage sampling from August, 2018 to December, 2018 in Zahedan, Iran. The participants are evaluated using the socio-demographic information form, the 36-Item Short-Form Health Survey (SF-36), Adult Attachment Questionnaire (AAQ), and the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). Results: there are significant differences between the two groups with regards to mean and standard deviation of QOL and attachment style. There was a negative correlation between the avoidant insecure attachment style and the anxious/ambivalent insecure attachment style, while there was a positive correlation between QOL and RTC among patients with SUD. When controlling for age, gender, and educational level, attachment style was able to predict QOL and RTC among patients. Conclusion: given the role of attachment style in predicting QOL and RTC, these components are considered as potential therapeutic objectives for patients with SUD. Therefore, making use of non-pharmacological approaches may reduce tendency towards substance use, and increase RTC and QOL through improving the attachment style of the individual, thereby reducing his/her negative emotions.

Keywords: attachment style, quality of life, readiness to change, substance use disorder

Introduction

SUD can be considered as a public health crisis which intensifies various social problems including poverty, crime, and domestic violence.[1] A review of the literature shows that SUD is associated with a number of biological, psychological, social, and family-related factors.[2] Meanwhile, attachment is a factor which may play an important role in tendency to substance use along with the development of personality patterns.[3,4] In principle, attachment theory deals with how the self develops in relation to others.[5] That is, the attachment system can regulate parent-child distance and closeness, which may impact interpersonal relations in the future.[5] According to the "Ainsworth's Strange Situation", infants are usually categorized as best-fitted to one of three general patterns of behavioral organization: secure, insecure-avoidant, and insecure-ambivalent/resistant attachment styles.[6] The secure attachment style is developed when the infant finds the reference of its attachment as a receptive, accountable, and accessible person; otherwise, the infant develops the avoidant insecure attachment style. Finally, the anxious/ambivalent insecure attachment style emerges when the attachment reference of the infant has an unpredictable and unstable attitude towards him/her. The strategies used by kids with an insecure attachment style increase the risk of their psychological vulnerability since compared to children with a secure attachment style, they are more likely to experience undesirable emotional memories.[7] It appears that compared

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to people with a secure attachment style, those with an insecure attachment style do more substance use.[4] Moreover, recent studies have shown that "fearful avoidant attachment" is a disorganized attachment style related to SUD.[8,9] Edward Khantzian, the first theorist to present the self-medication hypothesis, explored the relationship between attachment style and SUD.[9] Based on this hypothesis, an individual gets addicted to various substances through a self-medication mechanism used for suppressing traumatic events and negative emotions.[4] According to Höfler and Kooyman, individuals may choose drugs over relationships as an attachment alternative. Based on this idea, Flores introduced addiction as an attachment disorder.[6] In line with this idea, Thorberg et al and Gidhagen et al showed the presence of a significant correlation between high-risk behaviors (e.g. substance use) and attachment style.[10,11]

Moreover, different studies show that the physical and psychological implications of SUD may lead to reduced QOL and reduced life satisfaction among substance users.[12] This is rooted in the impacts of negative psychological (e.g. anxiety, depression, and failure of family relations) and physical (e.g. pain and physical weakness) consequences of SUD on the corresponding aspects of quality of life.[13] Several studies have explored the impact of attachment style on QOL among SUD patients. For instance, Smith and Larson, and Vaarwerk and Gaal showed that compared to healthy subjects, patients with SUD had significantly lower QOL.[12,13] However, according to Cavaiola et al, none of the attachment styles managed to predict QOL in these patients.[1]

In addition, motivation and RTC are also important factors that impact the process of stopping or changing substance use behaviors.[14] Recent studies show that there are significant differences with regards to levels of intentions and motivation to change substance use behavior among those undergoing treatment for SUD.[15-17] The literature shows that individuals with avoidant and anxious/ambivalent attachment styles have more difficulty with emotional regulation and negative mood status, and they are less likely to get support from others.[18,19] These traits are usually common among individuals with SUD and attachment disorders.[4,20] Given the relation between attachment style and the recognition, expression, and regulation of emotion, and given the correlation between SUD and the regulation of emotion, we can present the hypothesis positing that attachment style plays a major role in relapse triggers of SUD through the effective regulation of negative moods.[1,19] While Cavaiola et al concluded that none of the attachment styles managed to predict QOL and RTC among SUD patients,[1] we need more studies to inform our judgment with regards to this hypothesis. Therefore, considering the major role motivation and RTC play in drug abstinence,[16] the current study was designed and carried out in order to clarify the role played by attachment style in predicting QOL and RTS among SUD patients.

Materials and Methods

Study Design and Participants

The current study utilizes a causal-comparative design where 200 participants (100 patients with SUD and 100 healthy subjects) aged between 18 and 50 years are selected using multi-stage sampling with a sampling error of 10 percent and the confidence level of 95% according to the De Vaus' Table.[21] To control Berkson's bias, we randomly selected four public and private health centers in Zahedan, Iran. 100 SUD patients referred to these centers were selected after the approval of the physician of the center. In order to select the healthy subjects, the multi-stage sampling was once again used to select four random public and private organizations in Zahedan; 100 healthy subjects without a current state or history of SUD were selected randomly. Lack of consent for participating in the study and failure to completely fill out the questionnaires were the exclusion criteria for the study. After the project was approved by the Ethics Committee of Zahedan University of Medical Sciences (IR.ZAUMS.REC.1397.207), the participants were asked to sign a written consent form according to Helsinki Principles. Then, the social-demographic information form, the Short-Form Health Survey (SF-36), and Adult Attachment Questionnaire (AAQ) were given to the participants in the two groups, and the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) was only given to patients with SUD.

Measures

- #### The Demographic Information Form

The socio-demographic information form developed by the researcher elicits information on age, gender, and educational level.

- #### The Short-Form Health Survey (SF-36)

The Short-Form Health Survey (SF-36) includes 36 questions on eight health-related subscales in physical and mental health domains (physical functioning, role-physical, bodily pain, social functioning, role-emotional, general health, vitality, and mental health).[22] Montazeri et al was the first researcher to evaluate the validity and reliability of this scale in Iran. The reliability coefficient for the 8 subscales ranges from 0.77 to 0.95. The overall results show that the Persian version of this questionnaire has high reliability and validity, making it suitable for evaluating QOL among the general population.[23]

- #### Adult Attachment Questionnaire (AAQ)

The Adult Attachment Questionnaire (AAQ) was created to assess attachment styles based on self-classification items of Hazan and Shaver (1987). The questionnaire includes 15 items evaluating secure, avoidant insecure, and anxious/ambivalent insecure attachment styles. The scoring for the scale is based on a five-point Liker spectrum. With regards to the Persian version of the scale, the internal consistency using Cronbach's Alpha coefficient was 0.70. Different studies show acceptable reliability and validity for

this questionnaire in different groups of the Iranian population.[24]

- ### Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)

Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) which was first introduced by Miller et al is a self-reporting scale, which includes 19 questions for measuring the eagerness of alcohol addicts to change their behavior. This instrument is also utilized for assessing other patients with substance use disorders. The questionnaire consists of 3 subscales, including recognition, ambivalence, and taking steps. The items are scored based on a 5-point Likert spectrum (1-strongly opposed to 5- strongly agree). The total score for the scale ranges from 19 to 95. Various subscales of the questionnaire show high reliability and validity (from 0.83 to 0.93).[25] Parvizifard et al show that the validity and reliability of the questionnaire are acceptable in Iran (Cronbach's alpha= 0.91).[26]

Statistical Analysis

In order to analyze the collected data, descriptive statistics such as mean and standard deviation were utilized. Moreover, in order to compare the data for the two groups, the chi-square test and independent t-test were used, while Cramer's V test, Spearman's rank correlation coefficient and Pearson's correlation coefficient were used for evaluating the correlation between variables. Hierarchical Multiple Regression was used to assess the role of attachment style in predicting QOL and RTC, where demographic variables were entered into the analysis as the first stage. Di Clemente et al [27] and Tan et al [28] emphasize the role of gender, age, and educational level in predicting QOL and RTC. By controlling the effects of demographic variables, predicting variables such as avoidant insecure attachment style, secure attachment style, and anxious/ambivalent insecure attachment style were entered into the analysis at the second, third, and fourth stage, respectively. The collected data were analyzed using SPSS25, where the significance level was set to < 0.05.

Results

The socio-demographic characteristics for the participants, presented in Table 1, show no significant difference between the two groups with regards to age ($t = -0.64, df = 198, p > 0.05$), gender ($X^2 = 3.54, df = 1, p > 0.05$), and educational level ($X^2 = 2.77, df = 2, p > 0.05$). The overall mean scores of QOL and attachment styles for the two groups showed significant differences ($p < 0.001$). The pie chart count for the attachment styles of both groups is shown in Figure 1.

Based on Table 2, there is a significant correlation between QOL and gender ($Cramer's\ V = 0.976, p < 0.05$), age ($r = -0.239, p < 0.05$), avoidant insecure attachment style ($r = -0.758, p < 0.01$), secure attachment style ($r = 0.773, p < 0.01$), and anxious/ambivalent insecure attachment style ($r = -0.582, p < 0.01$). Moreover, there is a significant correlation between RTC and age ($r = -0.341, p < 0.01$), avoidant insecure attachment style ($r = -0.719, p < 0.01$), secure attachment style ($r = 0.729, p < 0.01$), and anxious/ambivalent attachment style ($r = -0.520, p < 0.01$). Hierarchical multiple regression was utilized to assess the role of attachment styles in predicting QOL and RTC. The results of the regression analysis in Table 3 indicate the significant contribution of gender ($\beta = -0.301, p < 0.01$) to QOL in the first step ($R^2 = 0.128$); while in the second step, the avoidant insecure attachment style shows a significant contribution to QOL ($\beta = -0.714, p < 0.001; \Delta R^2 = 0.469, p < 0.001$). The secure attachment style ($\beta = 0.445, p < 0.001$) significantly increased the variance ($\Delta R^2 = 0.080, p < 0.001$) in the third step. The final stage shows the significant predicting effect of the anxious/ambivalent insecure attachment style ($\beta = -0.328, p < 0.001, \Delta R^2 = 0.084, p < 0.001$). The final equation is significant ($F(5, 94) = 59.732, p < 0.001, R^2 = 0.761$). Moreover, the regression analysis, presented in Table 4, shows the significant contribution of age ($\beta = -0.232, p < 0.05$) to RTC in the first step ($R^2 = 0.054$). Avoidant insecure attachment style shows a significant contribution to RTC at the second stage ($\beta = -0.701, p < 0.001, \Delta R^2 = 0.482, p < 0.001$). The secure attachment style ($\beta = 0.415, p < 0.001$) significantly increased the variance ($\Delta R^2 = 0.076, p < 0.001$) at the third stage. The final stage shows the significant predicting effect of the anxious/ambivalent insecure attachment style ($\beta = -0.249, p < 0.001, \Delta R^2 = 0.049, p < 0.001$). The final equation is significant ($F(4, 95) = 47.269, p < 0.001, R^2 = 0.661$).

Discussion

The results of the current study show that compared to the healthy subjects, mean and standard deviation of QOL for SUD patients were lower. These results are in line with the findings of Smith and Larson, and Vaarwerk and Gaal.[12,13] It can be said that SUD is related to a number of physical, psychological, and social implications, which may lead to decreased QOL and life satisfaction.[13] The study also shows the significant contributions of attachment styles for both groups, which is consistent with the findings of McNally et al [29] Based on Bowlby's theory, the early experiences of a child are internalized into the "internal working model" system. These patterns shape the future of the individual's social communication as well as the behavioral patterns for the experience, self-expression, dealing with emotional distress, confronting tensions, and resolving life problems. Unlike the secure attachment style, which is related to positive consequences including life satisfaction, intimacy, proper regulation of negative emotions, and effective problem-solving, the avoidant insecure attachment style is associated with lower levels of commitment and self-care, and the anxious/ambivalent attachment style is associated with anxiety, experiencing intense stress, and decreased life satisfaction.[5,6] Insecure attachment styles decrease the individuals' capacity for social adjustment and self-

confidence. These children will be confused when facing life tensions and will suffer from lack of skills necessary for their adult life. One of the main assumptions of Bowlby's theory is that physical or psychological tensions in an adult automatically activate his/her childhood attachment system. Given the type of attachment style of the individual, when the attachment system is activated, the individual will try to find security.[30] Maunder and Hunter show that patients with avoidant and anxious attachment styles show signs of increased stress compared to those with secure attachment style.[31] This can explain the high likelihood of high-risk behaviors including SUD in people with insecure attachment styles as a self-medication.[9,32]

In addition, the results show that secure attachment style, avoidant insecure attachment style, and anxious/ambivalent insecure attachment style can predict RTC and QOL in SUD patients, which is not in line with the results of Cavaiola et al,[1] who evaluated 159 SUD patients, but didn't report any predictive role for attachment styles. It appears that insecure attachment styles are related to negative emotions, poor coping skills, immature defense mechanisms, negative cognitive styles, intrapsychic and interpersonal conflicts, and lack of motivation and social support from the family, which may lead to increased likelihood of SUD and intensified high-risk behavioral patterns.[33] Ultimately, this cycle may lead to increased risk of clinical syndromes and personality disorders in SUD patients. On the other hand, the secure attachment style can help the individual deal with negative emotions and problems by improving close relations, expressing emotions, reducing anxiety, and high flexibility.

Limitations

A small sample size and the selection of participants from a small geographical area are some of the limitations of the current study. Moreover, another limitation is the fact that adults may report different attachment styles or different security levels in response to certain life events based on their individual difference model. Instead of the Adult Attachment Questionnaire (AAQ), utilizing the Family and Peer Attachment Interview (FPAI) can overcome this limitation by paying attention to family, peer, romantic relationships, and four attachment styles (secure, fearful, preoccupied, and dismissing) described by Bartholomew, and focusing on current and past relationships. Due to uncooperative patients and shortage of interviewers, using the Family and Peer Attachment Interview (FPAI) was not possible.[34]

Conclusion

The current study has a number of important implications for understanding and treating individuals undergoing outpatient treatment. If patients are readier to change, positive expectancies for treatment will be easier to generate. Individuals who have a lower number of perceived outcomes will have more difficulties getting ready to change and they will be less optimistic about treatment. It is obvious that health care providers must help patients with lower readiness become aware of the problem as well as the need to change, instead of solely providing the tools or strategies for change. Paying attention to the stress and the environmental life of the individual is integral for increasing the readiness of the individuals for change. The results show that the secure attachment style can improve the individual's QOL and RTC even if the individual is a SUD patient. Given the role of attachment styles in predicting QOL and RTC among SUD patients, these factors can be considered as potential therapeutic objectives in group therapy.[35] Utilizing non-pharmacological treatment methods including interpersonal psychotherapy,[36] attachment-based psychotherapy,[6] dialectical behavior therapy,[37] long-term psychodynamic psychotherapy,[38] and schema therapy [39] can decrease the tendency towards SUD, and increase RTC and QOL by improving the attachment styles of the individual, reducing negative emotions. Future studies can evaluate the effects of non-pharmacological approaches on QOL, RTC, and substance use behavior, with a focus on attachment styles.

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Table 1: Comparing Socio-Demographic Characteristics and the Overall Mean Score for Quality of Life and Attachment Styles of Participants in the Two Groups of Patients with Substance Use Disorder (Group A) and Healthy Subjects (Group B) Based on Descriptive Statistics, Chi-Square Test and Independent t-Test.

Variables		Group A	Group B	χ^2 (df)
		N (%)		
Gender	Male	88 (88)	78 (78)	**3.54 (1)**
	Female	12 (12)	22 (22)	
Educational level	Illiterate	10 (10)	4 (4)	**2.77 (2)**
	Below high school degree	35 (35)	38 (38)	
	high school degree and higher	55 (55)	58 (58)	
		M ± SD		**t (df)**
Age		35.85 ± 7.85	36.56 ± 7.69	**-0.64 (198)**
QOL		49.08 ± 17.08	68.44 ± 11.16	**-9.48 (170.48)*****
AIAS		16.48 ± 3.54	13.54 ± 2.52	**6.75 (178.98)*****
SAS		13.82 ± 4.09	19.53 ± 3.26	**-10.90 (188.77)*****
AAIAS		16.57 ± 3.66	13.31 ± 2.28	**7.54 (165.80)*****

*****p < .001 is significant.**

AIAS, avoidant insecure attachment style; SAS, secure attachment style; AAIAS, anxious/ambivalent insecure attachment style; QOL, quality of life.

Table 2: The Correlation between Quality of Life, Readiness to Change, and the Variables of the Study.

Variables	Cramer's V	Spearman's rank correlation coefficient (r)	Pearson's correlation coefficient (r)			
	Gender	Educational level	Age	AIAS	SAS	AAIAS
QOL	0.976*	0.082	-0.239*	-0.758**	0.773**	-0.582**
RTC	0.637	0.029	-0.341**	-0.719**	0.729**	-0.520**

*p < 0.05 is significant; **p < 0.01 is significant

AIAS, avoidant insecure attachment style; SAS, secure attachment style; AAIAS, anxious/ambivalent insecure attachment style; QOL, quality of life; RTC, readiness to change.

Table 3: The Role of Attachment Styles in Predicting Quality of Life in Patients with Substance Use Disorder Using Hierarchical Regression Analysis.

Variables		Model 1			Model 2			Model 3			Model 4		
		B (β)	SEB	t	B (β)	SEB	t	B (β)	SEB	t	B (β)	SEB	t
Stage I: covariates	Age	-0.371 (-0.179)	0.196	-1.889	-0.192 (-0.093)	0.135	-1.421	-0.108 (-0.052)	0.123	-0.879	0.048 (0.023)	0.110	0.438

	Gender	-15.724 (-0.301)**	4.967	-3.166	-6.420 (-0.123)	3.505	-1.832	-1.588 (-0.030)	3.310	-0.480	-3.512 (-0.067)	2.884	-1.218
Stage II: predictor	AIAS				-3.441 (-0.714)***	0.325	-10.577	-1.991 (-0.413)***	0.419	-4.750	-1.492 (-0.310)***	0.373	-4.002
Stage III: predictor	SAS							1.860 (0.445)***	0.384	4.840	1.723 (0.412)***	0.333	5.167
Stage IV: predictor	AAIAS										-1.527 (-0.328)***	0.266	-5.733
R^2		0.128			0.597			0.677			0.761		
Adj. R^2		0.110			0.585			0.663			0.748		
ΔR^2		0.128			0.469			0.080			0.084		
ΔF (df)		7.110 (2, 97)**			111.876 (1, 96)***			23.422 (1, 95)***			32.871 (1, 94)***		
F (df)		7.110 (2, 97)**			47.450 (3, 96)***			49.755 (4, 95)***			59.732 (5, 94)***		

***p < .05 is significant; **p < .01 is significant; ***p < .001 is significant.**

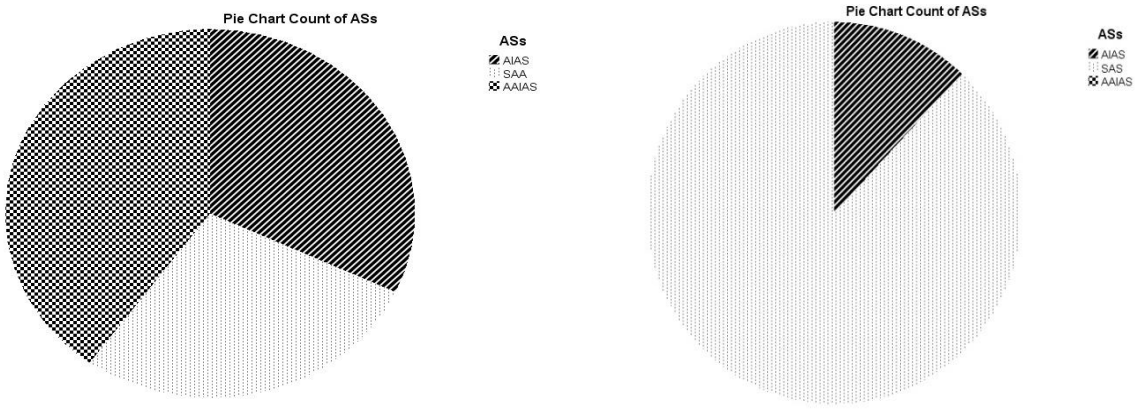
EL: educational level; AIAS, avoidant insecure attachment style; SAS, secure attachment style; AAIAS, anxious/ambivalent insecure attachment style.

Table 4: The Role of Attachment Styles in Predicting Readiness to Change Substance Use Behavior in Patients with Substance Use Disorder Using Hierarchical Regression Analysis.

Variables		Model 1			Model 2			Model 3			Model 4		
		B (β)	SEB	t	B (β)	SEB	t	B (β)	SEB	t	B (β)	SEB	t
Stage I: covariates	Age	-0.489 (-0.232)*	0.207	-2.362	-0.292 (-0.139)	0.147	-1.986	-0.210 (-0.099)	0.137	-1.534	-0.087 (-0.041)	0.133	-0.657
Stage II: predictor	AIAS				-3.441 (-0.701)***	0.343	-10.037	-1.957 (-0.398)***	0.465	-4.207	-1.562 (-0.318)**	0.450	-3.472
Stage III: predictor	SAS							1.765 (0.415)***	0.407	4.335	1.712 (0.402)***	0.383	4.469
Stage IV: predictor	AAIAS										-1.182 (-0.249)***	0.319	-3.702
R^2		0.054			0.536			0.612			0.661		
Adj. R^2		0.044			0.526			0.600			0.647		
ΔR^2		0.054			0.482			0.076			0.049		
ΔF (df)		5.581 (1, 98)*			100.733 (1, 97)***			18.795 (1, 96)***			13.708 (1, 95)***		
F (df)		5.581 (1, 98)*			55.997 (3, 97)***			50.445 (3, 96)***			47.269 (4, 95)***		

***p < .05 is significant; **p < .01 is significant; ***p < .001 is significant.**

EL: educational level; AIAS, avoidant insecure attachment style; SAS, secure attachment style; AAIAS, anxious/ambivalent insecure attachment style.



Group A Group B

Figure 1: The Pie Chart Count of Attachment Styles
ASs, attachment styles; AIAS, avoidant insecure attachment style; SAS, secure attachment style; AAIAS, anxious/ambivalent insecure attachment style.