Exploring Self-Control, Self-Efficacy and Resilience among Individuals with Substance Use Disorder

Areeba Younas, *Department of Psychology, Riphah International University, Faisalabad, Pakistan*

Keywords	Abstract
Self-Control, Self-Efficacy, Resilience, Substance Use Disorder, Opioid Addiction.	*This study aimed to examine the role of resilience in the connections between self-control and self-efficacy in individuals struggling with opioid addiction, particularly heroin. The research took place in Faisalabad, Pakistan, over an eight-month period from July 01, 2021, to February 28, 2022, involving 200 patients with substance use disorder who were specifically addicted to heroin. Diagnostic questionnaires based on the Diagnostic and Statistical Manual of Mental Disorders (5th Edition) were utilized to collect demographic data and assess the level of addiction. Measurement tools like the Brief Self-Control Scale (BSCS-13), General Self-Efficacy Scale (GSE-10), and Connor-Davidson Resilience Scale (CD-RISC-10) were also employed. Both descriptive and inferential statistics were used in the data analysis. The results demonstrated a significant positive correlation between self-control, resilience, and self-efficacy in these individuals. Resilience was found to act as a full mediator between self-control and self-efficacy. The association between self-control and self-esteem, as well as between self-control and self-efficacy, was also shown to be partially mediated by resilience. As a result, the study emphasizes how resilience and self-control play a significant role in affecting patients with substance use disorders' sense of self-efficacy, particularly those who are dealing with heroin addiction. It suggests that enhancing self-control and resilience could be beneficial in improving self-efficacy in individuals dealing with heroin addiction.*

INTRODUCTION

Drug addiction disorder is a pervasive and complex issue in society that can significantly impact individuals' sense of self-efficacy and self-control. Research has mainly concentrated on college students and other groups, leaving a lack of comprehensive understanding concerning the precise workings of self-efficacy and self-management in individuals dealing with substance use disorders (Tran et al., 2019). According to the Office of Mental Health and Substance Abuse Control, approximately 8.2% of the U.S. population aged 12 and above fulfilled the criteria for substance addiction or abuse within the previous year. At-risk drug use was even more prevalent, with an estimated 9.4% reporting illicit drug use within the previous month and a substantial 22.9% reporting frequent use during that period. Substance abuse leads to detrimental effects, such as drug-related injuries, violence, and various clinical and psychiatric disorders linked to excessive alcohol consumption, the use of tranquilizers, and other forms of drug dependencies (Yang et al., 2019).

Alcohol, tobacco, opiates, and illicit drugs collectively contribute to 1.3 million deaths in the United States, as reported by the National Academies of Sciences, Engineering, and Medicine (2021). An estimated 50,000 deaths in the United States in 2019 were caused by the use of opioid-related drugs (Scorsone, 2019). Opioid abuse and addiction, including both prescription drugs and illicit substances such as opiates and synthetic opioids like fentanyl, pose a significant national problem with detrimental impacts on physical, economic, and social well-being. The annual "financial burden" of opioid addiction in the United States is estimated by the Centers for Disease Control and Prevention (CDC) to be $7.85 billion. This figure includes healthcare expenses, lost productivity, treatment programs, and legal proceedings (Florence et al., 2016). A study conducted by Gene et al. (2017) revealed that a lack of self-control positively affects children's well-being and reduces drug use. Additionally, a 2013 report from the United Nations Office on Drugs and Crime (UNODC) revealed that the current state of affairs is likely more severe than in years past.

According to a survey, the number of drug users in Pakistan increased from 6.7 million to 8.9 million last year. This indicates that around 6% of the country's population engaged in the abuse of controlled narcotics and prescription drugs. Cannabis was the drug that was used the most, followed by pain relievers. The age group of 25 to 39 years was the most common among drug users. Although college is typically regarded as a great experience, it is also connected with certain challenges. Students' lives experience major shifts when they move to college. For instance, research has shown that dating in college is associated with depression, substance use (including heroin), and stress (El Ansari et al., 2015). College students are more likely to engage in risky behaviors than their peers who are not enrolled in school (Labrie et al., 2003; Mohler-Kuo et al., 2003; Van Ree et al., 1999). Identifying risk factors is a common area of research concerning substance addiction among college students (Ranjbaran et al., 2018). Men are typically more likely than women to use alcohol, tobacco, marijuana, cocaine, methamphetamine, and painkillers. However, no significant gender differences have been observed in the use of pain relievers and prescription Ritalin (Jebraeili et al., 2019).

Some of the studies show an association between increased self-efficacy and improved health (Lockwood, 2002). Several studies have found strong associations between beliefs in self-efficacy (also called reduced self-efficacy) and the outcome of alcohol use disorders, such as opiates, after various disorders (Mackinnon et al., 2002). Therefore, it is important to consider different outcomes (e.g., self-control, drinking initiation time, repetitive drinking, consumption) and different terms for assessing outcomes. Additionally, a more rigorous meditation test is needed (Mackinnon et al., 2002).

The hypothesis of abstinence among postgraduate college students suggests that injecting drug use not only harms individuals and poses risks to their lives but also affects healthcare policies and regulations. It is imperative to look into the underlying factors that lead to this type of behavior given the considerable personal and societal costs associated with substance misuse. A comprehensive understanding of the effects of different levels of self-efficacy is essential, particularly in determining whether higher self-efficacy consistently yields stronger outcomes. Other factors, such as resilience, may also play a significant role in heroin and drug use. Previous research initially associated resilience with individuals of high intellect, but subsequent studies have revealed its presence in diverse individuals at different developmental stages, irrespective

of their intelligence level. The relationship between these two characteristics among patients with substance use disorders has received less study, despite some focus on the individual degrees of self-control and self-efficacy in such patients. This study aims to investigate the mediating role of resilience in the relationships between self-control and self-efficacy among patients with opioid addiction. Additionally, the study seeks to gain insight into the knowledge about self-efficacy and perceived behavioral control related to heroin and substance usage patterns among individuals addicted to heroin.

Hypotheses

H_1: There is a significant positive relationship between self-efficacy, self-control, and resilience among individuals with substance use disorder.

H_2: Gender differences exist in levels of self-control, self-efficacy, and resilience among individuals with substance use disorder.

H_3: There are significant differences in levels of self-control, self-efficacy, and resilience based on income groups, educational levels, and rural vs. urban areas among individuals with substance use disorder.

METHOD

This correlational study was conducted in the metropolitan city of Faisalabad, Pakistan. The participants were selected from various rehabilitation centers, hospitals, and drug treatment centers, totaling 200 individuals with substance use disorders involving all types of drugs, including depressants and opioids. The age range of the participants was between 20 to 60 years, with diverse socioeconomic backgrounds and a minimum education level of matriculation. All participants were diagnosed patients of substance use. The researchers obtained formal permission from the drug treatment and rehabilitation centers from where the data was collected. Subsequently, the participants were approached through the respected staff, who provided detailed explanations about the research purpose. The recruitment process was carried out through the staff of specific drug treatment centers.

For this study, three instruments were used: the Brief Self-Control Scale (BSCS), the General Self-Efficacy Scale (GSES), and the Connor-Davidson Resilience Scale (CD-RISC-10). The Brief Self-Control Scale (BSCS) is a shorter version of the Self-Control Scale, consisting of 13 items presented in a Likert Scale format, with responses ranging from 1 (not at all) to 5 (very much). The sum of the raw scores from each item provides the final score for self-control assessment. The General Self-Efficacy Scale (GSES) is a 10-item psychometric scale originally developed in German by Matthias Jerusalem and Ralf Schwarzer in 1981 (Schwarzer & Jerusalem, 1995). It is typically self-administered as part of a larger questionnaire. The 10 items are randomly combined into sets, maintaining similar proportions across the questionnaire. The participants respond to the items on a 4-point scale, and the total composite score, ranging from 10 to 40 points, is calculated by summing the responses without recoding. The Connor-Davidson Resilience Scale, developed collaboratively by Kathryn M. Connor and Jonathan R.T. Davidson, consists of 10 selected items from the original 25 items (Connor & Davidson, 2003). The scores on this scale range from 0 to 40, representing the total score obtained by the respondent, reflecting their level of resilience.

RESULTS

Following the screening criteria outlined in the DSM-V for Substance Use Disorder (SUD), a total of 200 patients, including both males and females, with SUD were included in this study. In order to analyze the data, SPSS version 23.0 was used. The demographic variables' frequencies and percentages were calculated using descriptive statistics. Furthermore, Cronbach's alpha was used for reliability analysis to assess the consistency and dependability of the scales used in the study. To examine the relationships between different variables, bivariate correlation analysis was also used. Furthermore, a t-test was employed to compare the samples based on gender.

Table 1: Demographic Questionnaire of Gender with Substance Use Disorder

Age 20-60 Years		f	%
Gender	Male	163	81.5
	Female	37	18.5
Education	Matric	5	2.5
	Intermediate	36	18.0
	Bachelor's	92	46.0
	Masters	67	33.5
Socio-Economic Status	High	38	16.0
	Middle	82	41.0
	Low	80	40.0
Area	Rural	80	40.0
	Urban	120	60.0

Table no. 1 shows that the mean age of the male participants was 42.31 years and the standard deviation was 8.95. All the required demographic variables which were included in the inclusion and exclusion are described in table 1. Demographic characteristics of participants showed that patients having matriculation education level were 2.5%, intermediate 18.0%, bachelor's 46.0% and master's 33.5%. By socioeconomics, in this study, participants belonging to lower socioeconomics were 40.0%, middle 41.0%, and high 19.0%. The study's findings revealed that among patients with Substance Use Disorder (SUD), drug addiction was a significant predictor of self-control, self-efficacy, and resilience, particularly among male participants compared to females. The statistical analysis indicated a highly significant *p*-value of (*p*-.000) for these relationships. The results of this study show that this opioid developed in male patients with Substance Use Disorder.

Table 2: Correlation Analysis of Self-Control, Self-Efficacy and Resilience among Patients with Substance Use Disorder

Variables	1	2	3
Self-Control	.600**		
Self-Efficacy		.555**	

							.693**
Resilience							

Table no. 2 presents the correlation between all variables examined in the study. The correlation table demonstrates significant positive associations among self-control, self-efficacy, and resilience. The findings suggest a significant and positive correlation between substance use disorder and self-control, self-efficacy, and resilience.

Table 3: Comparison between Gender (Male and Female) on Self-Efficacy, Self-Control and Resilience among Patients with Substance Use Disorder

Male	n=100		Female	n=100				95% CI
Variables	**M**	**SD**	**M**	**SD**	**t**	**p**	**LL**	**UL**
Self-Control	43.0061	8.64991	39.2432	4.42760	2.334	.021	.58393	6.94186
Self-Efficacy	30.4908	3.43613	27.7027	4.42760	4.210	.000	1.48216	4.09403
Resilience	34.2393	4.59446	30.8649	4.93380	3.978	.000	1.70165	5.04715

The results presented in Table no. 3 demonstrate a statistically significant difference in self-control, self-efficacy, and resilience between female and male individuals with substance use disorder. The findings suggest that men reveal lower levels of self-control, self-efficacy, and resilience compared to women.

Table 4: Comparison between Education of Respondents on Self-Efficacy, Self-Control and Resilience among Patients with Substance Use Disorder

						95% CI	
	Variables	**M**	**SD**	**t**	**P**	**LL**	**UL**
Matric	Self-Control	37.6000	5.224	16.091	.000	31.1124	44.087
	Self-Efficacy	32.0000	1.000	71.554	.000	30.758	33.241
	Resilience	37.2000	1.643	50.623	.000	35.159	39.240
Intermediate	Self-Control	37.7222	10.038	22.546	.000	34.325	41.118
	Self-Efficacy	27.4444	5.315	30.979	.000	25.646	29.242
	Resilience	31.9444	5.534	34.634	.000	30.072	33.816
Bachelor's	Self-Control	42.3152	9.115	44.524	.000	40.427	44.203
	Self-Efficacy	29.9457	3.414	84.129	.000	29.945	29.238
	Resilience	33.3152	4.925	64.874	.000	32.295	34.335
Master's	Self-Control	45.1194	7.121	51.861	.000	43.382	46.856
	Self-Efficacy	31.2239	2.592	98.578	.000	30.591	31.856
	Resilience	34.6567	84.129	69.389	.000	33.6595	35.653

Table no. 4 displays the test results regarding the association between respondents' levels of education and their levels of self-control, self-efficacy, and resilience in relation to substance misuse. The statistical analysis reveals that respondents with matric education exhibit higher levels of self-control compared to other respondents, with a mean score of 37.60 ($p=.000$). Similarly, the table indicates that respondents with matric education also demonstrate greater self-efficacy towards substance abuse, with a mean score of 32.00 ($p=.000$). Additionally, the findings show that respondents with matric education display higher levels of resilience towards substance abuse, with a mean score of 37.200 ($p=.000$), when compared to other respondents.

Table 5: Comparison between Residence on Self-Efficacy, Self-Control and Resilience among Patients with Substance Use Disorder

	Variables	M	SD	t	*P*	LL	UL
Rural	Self-Control	42.8500	8.53007	44.931	.000	40.9517	44.7483
	Self-Efficacy	30.1000	3.55642	75.701	.000	29.3086	30.8914
	Resilience	33.6125	4.51017	66.658	.000	32.6088	34.6162
Urban	Self-Control	41.9500	9.23807	49.744	.000	40.2801	43.6199
	Self-Efficacy	29.8917	3.94457	83.012	.000	29.1787	30.6047
	Resilience	33.6167	5.04798	72.950	.000	32.7042	34.5291

Table 5 displays the test results examining the self-control, self-efficacy, and resilience of urban and rural respondents in relation to substance abuse. According to the statistical analysis, urban respondents have higher levels of self-control and self-efficacy than respondents from rural areas. Urban and rural respondents' levels of resilience, however, are not significantly different.

Table 6: Correlation among Demographic and Study Variables among Patients with Substance Use Disorder

	Age	Gender	Edu	Socio economic	Residence	Self-control	Self-efficacy	Resilience
Age	1							
Gender	-.178*	1						
Education	.464**	-.164*	**1**					
Socioeconomic	-.031	-.292**	-.030	**1**				
Residence	.121	.126	.005	-.459**	**1**			
Self-Control	.087	-.164*	.289**	.127	-.049	**1**		
Self-Efficacy	.157*	-.287**	.263**	-.005	-.027	.600**	**1**	
Resilience	.007	-.272**	.126	.040	.000	.555**	.693**	**1**

All demographic and study variables significantly correlate with one another, as shown in the above table no. 6.

DISCUSSION

Self-control, self-efficacy, and resilience among individuals who have substance use disorders are assessed differently depending on gender. Specifically, males outperform females in terms of self-control, self-efficacy, and resilience when it comes to dealing with substance use disorders. This finding is consistent with previous studies conducted by Connell et al. (2010), Moss et al. (2014), and Swahn and Bossarte (2007).

Additionally, based on education level, the findings show a statistically significant difference in self-control and self-efficacy. Individuals with matric or intermediate education levels exhibit higher self-control, while self-efficacy and resilience are higher among those with matric education compared to intermediate education. The findings of Merianos et al. (2013), Stein et al. (1987), and Terry-McElrath et al. (2011) align with similar results. They also observed that males tend to exhibit better self-control, self-efficacy, and resilience in the context of substance

use disorders. Additionally, Gene et al. (2017) concluded that poor self-control positively influences children's well-being and reduces drug consumption.

According to the Mathers et al. (2006) study's findings, there are no significant differences between individuals with drug use disorders in urban and rural settings in terms of self-control, self-efficacy, or resilience. Minor differences are observed between the two areas. Similar findings were reported in studies conducted by Weichold et al. (2014) and Yaung et al. (2019).

CONCLUSION

The study's conclusion highlights that opioid addiction is associated with certain factors related to self-control, self-efficacy, and resilience in individuals with substance use disorder. Some of these factors, a few of which are explained above, include low self-esteem, discrimination in order to social opportunities, and anger and embarrassment due to the general attitude of society. Furthermore, some other reasons are also important, like perceiving addicts as criminals, rejection and discriminating behaviors by society and employment issues, and guilt and shame. These are some important reasons leading to substance use disorder.

Limitations and Recommendations

Several limitations of this study have been identified. Firstly, the study primarily focused on male and female participants, despite the significant number of females engaging in substance misuse in contemporary times. Secondly, the age range of the participants was restricted to individuals between 20 and 60 years old. This narrow age range may not fully represent the broader population affected by substance misuse. Lastly, the data collection was limited to Faisalabad, and extending the study to encompass other major cities in Pakistan would offer a more comprehensive understanding of the situation.

It is crucial for the healthcare system, law enforcement agencies combating drug abuse, the pharmaceutical industry, and policymakers to collaborate closely. One important step would be to establish an addiction center within a university, dedicated to both research and treatment. To address the pressing issue of opioid use disorder, there is an urgent need for institutions to have access to medications such as buprenorphine naloxone and injectable naltrexone. Additionally, it is crucial to allocate resources and researchers to study hypothetical scenarios that can help explain substance use among college students.

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