



The Impact of Drug Dependence on Scrupulosity among Young Adult Drug Dependents

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ABSTRACT

The increasing prevalence of drug dependence among young adults has increased considerable public health issues, with emerging studies indicating a complicated relationship between drug use and psychological manifestations such as scrupulosity. This study examined the impact of drug dependence on scrupulosity among young adult drug dependents. The primary objective was to assess the impact of drug dependence on scrupulosity, as well as to explore the predictive role of drug dependence on scrupulosity. A cross-sectional survey design was employed, utilizing purposive sampling to collect data from 270 drug dependents aged 18 to 28 years from rehabilitation centers and clinics in Islamabad and Rawalpindi. Data were gathered using the Severity of Dependence Scale (Gossop et al., 1995), and Pennsylvania Inventory of Scrupulosity (Abramowitz et al., 2002). Statistical analyses, including correlational analysis, regression and ANOVA were conducted. Findings suggested that a positive significant correlation exist between the drug dependence and scrupulosity ($r = 0.13, p < 0.001$), indicating that as drug dependence increased, scrupulosity tended to increase slightly. The severity of dependence on drugs strongly predicted a person's scrupulosity scores ($\beta = 0.43, p < 0.05$). Given the limited research on this relationship in Pakistan, this study focuses on a crucial gap in the existing literature and emphasizes the need for further investigation of the relationship between drug dependence and scrupulosity in this specific population.



Introduction

Drug addiction is a growing health concern worldwide, particularly among young adults who are more prone to experimentation and addiction, along with significant harmful consequences on their physical health, psychological wellbeing and social harmony (World Health Organization [WHO],

2021). Further, drug dependence tends to have multiple negative consequences affecting not only individuals but the whole communities and nations. Due to multiple factors such as peer pressure, environmental influences and emotional instability, young adults are at a higher risk of drug abuse (Trafficking, 2021). According to the 2019 World Drug Abuse Report (WDAR), nearly 3.5 million of the world population suffers from drug abuse disorders and treatment of drug abuse disorders globally is alarmingly very low, with only 1 out of 7 people (14.2%) getting some kind of treatment (Hurst, 2019).

As drug dependence shows a compulsive behavior of drug use that impedes with everyday functioning, it is very important to understand the psychological aspects that may lead to such behaviors. One such aspect is scrupulosity, a lesser-known yet clinically significant form of obsessive-compulsive disorder (OCD), affecting approximately about 0.05%-0.33% of people in the general population (Greenberg & Huppert, 2010). It is characterized by excessive religious and moral obsessions and compulsions, complicates this relationship (Abramowitz & Jacoby, 2014). Scrupulous individuals often displays increased guilt, ritualistic behavior, distorted religious beliefs about purity and uncertain about their religious experiences and practices (Ciarrocchi, 1995). Scrupulosity is often studied in religious and clinical contexts, however, recently studies have emphasized that scrupulosity may correlate with drug use behaviors, possibly as a coping mechanism to deal with religious anxiety or as a source of emotional suffering that increases dependency (Buchholz et al., 2019).

Empirical evidence suggests scrupulosity often co-exists with SUD and that there may be a bi-directional relationship between drug use and obsessive-compulsive symptoms. Young adults with drug dependency often experience increased anxiety, depression, and distress, which can intensify intrusive thoughts (Chasson et al., 2020). Furthermore, individuals with increased levels of scrupulosity may turn to drugs as a means of coping mechanism to reduce their anxiety. For instance, a study by Akosile et al, (2025) individuals with higher moral and religious conflicts has significantly higher chances of developing drug dependency than those without psychiatric disorders (Akosile et al., 2025).

To gain a deeper understanding of the relationship between drug dependence and scrupulosity, a study carried out on 70 patients diagnosed with OCD in Italy to examine the cannabis use patterns and their mental outcomes. The findings of the study suggested that 42.8% of patients stated lifetime cannabis use, and 14.3% were current consumers. Further, about 10% of patients reported betterment in OCD symptoms, including moral and religious anxiety, however, 23.3% patients underwent intensified anxiety (Benatti et al., 2023).

Similarly, Virtanen et al. (2022) carried out an extensive longitudinal study in Sweden that investigated the relationship between OCD traits and the onset of drug dependency. The findings of the study suggested that individuals suffering from OCD have 3.7 % increased chances of developing misuse and dependency on drugs as compared to those without OCD symptoms. The study emphasized the role of obsessions and compulsive behaviors that make individuals more susceptible to use drugs as a form of self-medication to cope with the distress which is caused by their intrusive thoughts (Virtanen et al., 2022).

Another study was conducted to examine the association between scrupulosity with psychiatric comorbidities such as substance use disorder, depression, bipolar disorder, and psychosis. The results of the study revealed that there is a strong correlation between OCD and substance use disorder, depression, bipolar disorder, and psychosis, with depression showing the highest co-occurrence rates. Further, the meta-analysis revealed that individuals with OCD were more than

tenfold likely to develop drug dependency as compared to the general population (Rowe et al., 2022).

Despite the potential for a significant relationship between drug dependence and scrupulosity, no large-scale studies have specifically explored this association among young adult drug users. Research by Stein et al. (2025) indicates that addressing mental health issues like scrupulosity in the treatment of substance use disorders can improve outcomes. By examining the association between severity of drug dependence and scrupulosity can provide critical information for specific prevention and intervention strategies (Stein et al., 2025).

Hence, the literature review suggests that it's evident that drug dependence and scrupulosity commonly co-exist, although the frequency approximations fluctuate by drug and sample and that this association is supported by both common hereditary and environmental factors; yet, contradictions continues relating to whether specific drugs increases or temporarily reduce scrupulosity symptoms. Further, numerous important gaps persist inside the existing literature. As majority of research work have emphasized on overall Obsessive-Compulsive symptoms rather than on OCD sub-types such as scrupulosity. Moreover, prior research has rarely on young adults, a population who is more susceptible to both drug addiction and intensifying scrupulosity symptoms. There is also a lack of quantitative researches investigating how the severity of drug dependence unambiguously impacts scrupulosity, leaving this correlation inadequately understood.

The current study intends to tackle these observed gaps by particularly studying the impact of drug dependence on scrupulosity among young adult drug dependents through a quantitative method. By directing attention towards this rarely studied aspect of OCD sub-type, Scrupulosity within a vulnerable age category, this study aims to provide findings regarding in what way different levels of drug dependence may impact scrupulous obsessions. Further, there are very limited studies globally as well as Pakistan, that analyzed the relationship of drug dependency and scrupulosity. As every individual exhibits fluctuating levels of scrupulous tendencies, understanding this association is significant, as it may help in pinpointing and addressing underlying mental health issues particularly among young drug users.

Method

The current study aims to investigate the impact of drug dependence on scrupulosity among young adult drug dependents. Relevant information was collected using a cross-sectional survey

Objectives

1. To examine the relationship between the severity of drug dependency and scrupulosity among young adult drug dependents.
2. To examine the impact of drug dependence on the level of scrupulosity among young adult drug dependents.

Hypotheses

1. There is a significant positive association between the severity of drug dependency and scrupulosity among young adult drug dependents.
2. Drug dependence has a significant impact on the level of scrupulosity among young adult drug dependents

Study design and measurement of variables

The current study focused at examining association between drug dependence and scrupulosity among young adult drug users. To understand this, data was collected through quantitative method

using standardized questionnaires. However, as participants belong to different ages and demographic characteristics, hence current study utilized cross sectional research design and sample was approached through Survey method for data collection.

Sample

In this study, a cross-sectional research design was employed. The study consisted of 270 drug dependents (N=270), aged between 18-28, from different rehabilitation centers and universities of Rawalpindi and Islamabad. Purposive sampling strategy was used as it specifically selects individuals who meet the criteria of being drug users. The participants comprised 230 male and 40 female drug dependents.

Inclusion Criteria

The study included adults aged between 18 and 28 who have been consuming some form of drug, including a range of drugs such as crystal methamphetamine (ICE), opium, cocaine, alcohol and illicit drugs. The focus was particularly on individuals residing in the twin cities of Rawalpindi and Islamabad, Pakistan.

Exclusion Criteria

The study excludes individuals who abstain from use of any type of drug, as well as those with severe cognitive deficiencies or language barriers that may prevent their ability to participate in the study effectively.

Instruments

The current study employed the following instruments:

Severity of Dependence Scale: (SDS; Gossop et al., 1995) was used to measure the degree of dependence on drugs among participants. This 5-item self-report tool measures the degree of dependence on different drugs over the last twelve months. Each item is rated on a 4-point scale ranging from 0 (never or not at all) to 3 (always or very much), with a total score ranging from 0 to 15. Higher scores suggest a greater level of dependence on drugs. The instrument has indicated strong psychometric properties, as shown by Cronbach's alpha of 0.83 and validity of 0.85 (Gossop et al., 1995; Martin et al., 2006).

Penn Inventory of Scrupulosity: (PIOS; Abramowitz et al., 2002) was employed to assess scrupulosity-related distress among participants. This 19-item self-report scale evaluates religious and moral obsessions, including apprehensions about sin, guilt, and interpreted moral failure. Participants rate each item on a 5-point Likert scale ranging from 0 (never) to 4 (almost always), producing a total score ranging from 0 and 76. Higher scores indicate a higher level of scrupulosity. The instrument has demonstrated strong psychometric properties, as shown by Cronbach's alpha of 0.94 and validity of 0.71 (Abramowitz et al., 2002).

After getting the permission from participants to participate, they provided information on a demographic sheet and took the main measures, SDS and PIOS. The demographic sheet consisted of questions regarding age, gender, education, religion, marital status, total monthly income, type of drug use, psychiatric and any other physical illness. After obtaining the data the responses from participants were then evaluated through statistical procedures in SPSS 27.

Procedure

Before starting the research, permission was acquired from the corresponding authors of the questionnaires to ensure their appropriate use in the research. Data was collected from diverse settings such as clinics and rehabilitation centers in Islamabad and Rawalpindi, Pakistan, specifically selecting participants who fulfill the inclusion criteria. Participants were fully informed about the purposes and objectives of the study, as well as the importance of their participation. The study complied with strict ethical guidelines to make sure participant safety and research integrity. Permissions were acquired from the authors of the questionnaires and the related authorities, including Heads of Departments of clinics and rehabilitation centers.

First, participants were informed about the nature of the research, the time required for their participation, the voluntary form of their participation, and then informed consent was obtained from them. Further, they were guaranteed that all information provided by them would remain confidential and would be used only for the purpose of academic and research. Moreover, participants were given the authority to withdraw from the study at any stage if they felt distressed. Data collection included distributing structured questionnaires, and the responses from participants were then evaluated through statistical procedures in SPSS 27.

Results

The study data of the 270 participants was investigated using descriptive statistics, Pearson correlation, regression analysis and ANOVA. Descriptive statistics were used to summarize the demographic and key characteristics of the sample. Frequency analysis was carried out to evaluate the severity of drug dependence and level of scrupulosity. Furthermore, ANOVA were utilized to compare mean scores and to identify significant differences related to scrupulosity and its impact on severity of drug dependence along with the significance level of $p < 0.05$.

Considering the primary objectives of the study, this section presents the results. Data analysis was conducted using both descriptive and inferential statistical methods.

Table 1: Mean, Standard Deviation, Range and Cronbach alpha reliability of Severity of Dependence Scale, and Penn Inventory of Scrupulosity (N=270)

Variables	N	M	SD	Range	α
SDS	270	5.50	3.38	15	.71
PIOS	270	43.6	10.9	57	.88

Note: SDS= Severity of Dependence Scale; PIOS= Penn Inventory of Scrupulosity; N = Total Number of Participants; M = Mean; SD = Standard Deviation; α = Cronbach alpha.

Table 1, represents the mean, standard deviation and normality result of the data. This result shows that the data is mildly deviated from its mean. Range has also been checked which is 15, and 57 respectively. Reliability of each measure was also checked using Cronbach alpha. The alpha reliability of Severity of dependence scale is .71 which indicates moderate reliability. Further, the alpha reliability of Penn inventory of scrupulosity is .88 suggesting high reliability.

The Table 2 shows the frequency and percentages of demographic variables. For each demographic variable frequency and percentage has been checked. 270 participants participated in the study among which 240 were male with 85.2 percentage and 40 female drug users with 14.8 percentage. The age was divided in three different categories during analysis. One category included 18-21 years of drug users ($f = 152$, $\% = 56.3$), second age category included 22-24 years of drug users ($f = 79$, $\% = 29.3$), third age category included 25-28 years of drug users ($f = 39$, $\% =$

14.4). Majority of participants identified as Muslim (f = 263, % = 97.4), while a few participants identified as Christian (f = 7, % = 2.6). The most commonly used drug among participants were nicotine products (e.g., cigarettes, vapes).

Table 2: Socio-demographics variables of study participants (N=270)

Variables	N	%
Gender		
Male	230	85.2
Female	40	14.8
Age		
18-21	152	56.3
22-24	79	29.3
25-28	39	14.4
Religion		
Islam	263	97.4
Christianity	7	2.6
Marital status		
Married	27	10
Unmarried	243	90
Socioeconomic status		
Lower	67	24.8
Middle	126	46.7
Upper	77	28.5
Education Level		
Higher Secondary	27	10
Undergraduate	192	72.2
Postgraduate	51	28.9
Type of Drug use		
Crystal methamphetamine (ICE)	181	67
Opium	41	15.2
Cocaine	8	3
Alcohol	19	7
Heroin	10	3.7
lysergic acid diethylamide (LSD)	6	2.2
Hashish	5	1.9
Previous treatment for drug		
Yes	28	10.4
No	242	89.6
Any Psychiatrist illness		
Yes	28	10.4
No	242	89.6
Any Physical illness		
Yes	31	11.5
No	239	88.5

Note: %= Percentage

Table 3: Correlation matrix of drug dependence and scrupulosity (N = 270).

Variables	N	M	SD	1	2	3	4
1.SDS	270	5.50	3.38	-			
2.PIOS	270	43.6	10.9	.13*	-		
3.FOS	270	16.8	4.67	.11*	.90**	-	
4.FOG	270	26.7	6.69	.13*	.95**	.74**	-

Note: SDS= Severity of Dependence Scale; PIOS= Penn Inventory of Scrupulosity; FOS= Fear of Sin; FOG= Fear of GOD; N = Total Number of Participants; M = mean; SD = standard deviation (Significance level; p = < .05)

Table 3, shows the Pearson correlation among severity of drug dependence and scrupulosity. The results indicate that there is a positive correlation between severity of drug dependence and scrupulosity (PIOS), ($r = .13, p < .001$) which was statistically significant, indicating that individuals with drug dependency tend to encounter intense levels of scrupulosity-related distress. This pattern is further supported by the positive correlations between severity of dependence scale and the subscales of scrupulosity, Fear of God (FOG: $r = .13, p < .001$), and Fear of Sin (FOS: $r = .11, p < .001$).

Table 4: Regression coefficient of drug dependence on scrupulosity (N=270)

Variables	B	S.E	t	p	CL 95% [UL, LL]
Constant	41.2	1.2	32.7	<.001	(43.7, 38.7)
SDS	.43	.19	2.22	.027	(.81, .05)

Note: B = unstandardized beta; S.E = standard error; p = Significance level; CI = confidence interval; UL = upper limit; LL = lower limit

Table 4, shows the linear regression among drug dependence and scrupulosity. The results in this table show that severity of drug dependence is positively predicting the scrupulosity. The severity of drug dependence variable as a predictor is showing 1.8% variance in scrupulosity. The overall findings suggest that 1.8% of the variance in scrupulosity was by drug dependence.

Table 5: Comparison of Age groups on Severity of dependence scale and Penn inventory of scrupulosity (N = 270)

Variables	18-21 (N=152)		22-24 (N=79)		25-28 (N=39)		F (2,267)	η^2	Post Hoc
	M	SD	M	SD	M	SD			
SDS	5.40	3.13	5.64	3.70	5.58	3.71	.15	.001	1≈2≈3
PIOS	44.9	10	39.9	12	43.6	10.9	.02	.025	2<1≈3

Note: M = Mean; SD = Standard deviation; p = Significance level i.e. <0.05; SDS= Severity of Dependence Scale; PIOS= Penn Inventory of Scrupulosity

In table 5, shows mean, standard deviation and F value for Severity of dependence scale and Penn inventory of scrupulosity across age groups. The results showed no significance mean differences across age groups on Severity of dependence scale with (SDS: $F(2,267) = .15, p > 0.05$). However, a significant difference emerged in Penn inventory of scrupulosity with ($F(2,267) = 3.49, p < 0.05$), suggesting that early adults (18-21) engage more in drug use as compared to other age groups. The effect size for Penn inventory of scrupulosity was small ($\eta^2 = .025$), suggesting that age group

differences considered for a minimal amount of the variance in Penn inventory of scrupulosity scores. In contrast, the effect size of severity of dependence scale were insignificant ($\eta^2=.001$).

The results suggests that there is a significant positive correlation between drug dependence and scrupulosity, suggesting that the increased level of dependence on drugs lead to higher moral and religious anxiety, but with constrained influence.

Discussion

The present study aimed to investigate the relationship between drug dependence and scrupulosity among young adult drug users. The results revealed a significant positive relationship between drug dependence and scrupulosity ($r=.13$, $p<.001$). The findings in Table 3 indicate a significant relationship between drug dependence and scrupulosity among young adult drug users.

The study hypothesized that severity of drug dependence has a positive relationship with scrupulosity among young adult drug dependents. The results revealed a significant positive correlation of drug dependence with scrupulosity, suggesting that the increased level of dependence on drugs lead to higher moral and religious anxiety, but with constrained influence.

Further, the study hypothesized that drug dependence has a significant impact on the level of scrupulosity among young adult drug dependents. The results revealed that drug dependence is positively predicting the scrupulosity. The findings suggest that 1.8% of the variance in scrupulosity was by drug dependence.

Previous research, such as a study by Akosile et al (2025), revealed that a wide variation in the coexistence of both disorders, OCD and SUDs, with lifetime commonness percentages ranging between 4.3% and 62.4%, indicating that while the relationship occurs, its degree can vary significantly depending on the drugs and population examined (Akosile et al., 2025). Further, another study examined the association between psychological disorders such as scrupulosity with drug dependence among 200 drug-dependent patients (100 opium, 100 amphetamine). The findings suggested that scrupulosity is more severe in amphetamine users, however, higher severity linked with older age and longer use duration (Farhadi et al., 2024).

Similarly, another study on cannabis use among people with scrupulosity found that even though considerable part of individuals stated lifetime use of cannabis, the severity of religious and moral anxiety was not notably different between users and non-users, suggesting a complicated and not certainly significant strong association between drug use and scrupulosity symptoms (Benatti et al., 2023). Moreover, a large-scale cohort study carried out in Sweden revealed that patients diagnosed with scrupulosity had considerably increased risk of drug dependency, mostly associated with common hereditary and environmental variables (Virtanen et al., 2022).

However, several studies suggests that drug dependence has no association with scrupulosity. For instance, a community- based cohort study conducted in Munich, Germany, to find out the association between a diagnosis of scrupulosity at baseline and the later emergence of any substance use disorder, including use of illicit drugs or tobacco. Among the sample of 3,000 adolescents and young adults, the findings of the study revealed that individuals with scrupulosity are not at the increased risk of developing drug dependence as compared to their non-scrupulosity peers to develop a substance use disorder over the research duration (Tan, 2021).

In conclusion, prior studies demonstrate a significant co-existence between drug dependence and scrupulosity symptoms. Akosile et al (2025), findings suggested a lifetime SUD frequency in OCD patients extending from 4.3% to 62.4%, with alcohol as the most frequent drug (Akosile et al.,

2025). An Italian research revealed that 42.8% of scrupulous individuals had used cannabis, with present users exhibiting increased rates of other drug use and already existing disorders (Benatti et al., 2023). A Swedish population research proved that drug dependence significantly increases the levels of scrupulosity, majorly due to common heredity and environmental elements (Virtanen et al., 2022). Rowe et al. (2022) further confirmed significant relationship between drug addiction and scrupulosity through meta-analyses, highlighting the necessity for combined, trans-diagnostic intervention approaches (Rowe et al., 2022). These results correspond with the detected significant positive correlation between drug dependence and scrupulosity in the current study, supporting the concept that while drug dependency and scrupulosity are correlated, other influences such as genetic inclinations, environmental factors, and drug-specific effects may influence the degree of this relationship.

Conclusion

This study concluded that among the 270 drug dependents evaluated, there was a significant positive association between drug dependence and scrupulosity, suggesting that increased drug dependence is associated with increased risk of experiencing moral and religious anxiety. Additionally, drug use was more frequent among males than females, with Crystal methamphetamine (ICE) being the most frequently used drug, while the Opium was more prevalent among female drug dependents. These findings emphasize the multifaceted correlation between scrupulosity and drug dependence, highlighting the importance for gender-inclusive intervention programs that confront these factors. To formulate impactful and tailored strategies, further study is required to investigate these relationships in greater detail.

Limitations

The study has few potential limitations including a lack of previous studies on scrupulosity particularly among drug dependents, as most available literature concentrated on obsessive-compulsive disorder. Further, Participants might be using social desirability bias or fear of stigma to cover up their problematic behavior of drug addiction which can lead to wrong assessments. The study has not measured whether certain confounding variables, such as personality, peer influence, mental health conditions, health status and family environment, were not taken into consideration, despite their potential influence. Moreover, the limited geographic range, focusing only on Islamabad and Rawalpindi, decreased the generalizability of the results to other regions with diverse cultural, religious, and socio-economic contexts.

Implications

The current study presents few important implications, both practical and theoretical, that contribute to the understanding of drug dependence and scrupulosity. The current study contributes to the existing literature by investigating the relationship of drug dependence and scrupulosity, presenting a new perspective into the psychological mechanisms underlying drug dependence among young adult drug dependents. Further, the study findings emphasizes that interventions plans for drug dependency could benefit by combining treatments that address scrupulosity (e.g., CBT techniques such as cognitive restructuring for rigid moral beliefs). Moreover, the findings can help in educational initiatives for young adults by providing information on how religious and moral anxiety (scrupulosity) might exist together with drug dependence, increasing awareness and reducing self-stigma.

Recommendations

Future research needs to adopt a qualitative approach such as in-depth interviews to investigate how individuals with high scrupulosity recognize their drug use behaviors, revealing deeper psychological mechanisms. Moreover, future studies can use longitudinal research designs to grasp more clearly how scrupulosity and drug dependency impact each other over time. Further, research should explore whether individuals who lose belief in religion and faith experience different drug use behaviors and changes in scrupulosity levels.

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