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Predicting Attitudes Toward Drugs by Loneliness in University Students in Shiraz

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A B S T R A C T

Objective: The objective of this study was to examine the relationship between loneliness and attitudes toward drugs among university students in Shiraz. Specifically, the study aimed to investigate how emotional and social loneliness predict students' attitudes toward substance use, utilizing a cross-sectional design.

Methods and Materials: A total of 350 university students from Shiraz were recruited using the sample size determination table by Morgan and Krejcie. Participants completed self-administered questionnaires measuring their attitudes toward drugs and levels of loneliness, assessed using the Attitude to Drug Scale (ADS) and the UCLA Loneliness Scale, respectively. Data were analyzed using SPSS version 27, employing Pearson correlation to explore the relationships between variables and linear regression to determine the predictive power of emotional and social loneliness on drug attitudes.

Findings: The results indicated significant correlations between emotional loneliness and negative attitudes toward drugs ($r = -0.45$, $p < 0.001$) and between social loneliness and negative drug attitudes ($r = -0.32$, $p < 0.001$). Linear regression analysis revealed that both emotional loneliness ($\beta = -0.37$, $p < 0.001$) and social loneliness ($\beta = -0.25$, $p < 0.001$) were significant predictors of negative attitudes toward drugs, with emotional loneliness demonstrating a stronger predictive value. These findings suggest that higher levels of loneliness, particularly emotional loneliness, are associated with more negative attitudes toward substance use among university students.

Conclusion: The study concludes that loneliness, especially emotional loneliness, significantly influences university students' attitudes toward drugs. These findings highlight the importance of addressing loneliness in interventions aimed at reducing substance abuse. Universities should implement programs that foster social connections and provide targeted mental health support to mitigate the impact of loneliness on students' drug attitudes.

Keywords: *Loneliness, Attitudes Toward Drugs, University Students, Emotional Loneliness, Social Loneliness, Substance Abuse, Shiraz, Cross-Sectional Study, Predictive Analysis, Mental Health Interventions*

1. Introduction

Substance abuse remains a significant public health issue, particularly among university students, where stressors such as academic pressure, social dynamics, and developmental transitions heighten vulnerability. The prevalence of substance abuse in this population underscores the necessity to explore underlying factors influencing attitudes towards drugs. Loneliness, a subjective feeling of social disconnection, has been identified as a potential contributor to substance abuse, impacting mental health and behavioral outcomes (Babad et al., 2020; Hosseinbor et al., 2014).

Loneliness is prevalent among university students and can manifest as emotional or social loneliness. Emotional loneliness refers to the absence of close, intimate relationships, while social loneliness involves a lack of a broader social network (Hosseinbor et al., 2014). These forms of loneliness are particularly relevant in the context of university students, who may experience significant changes in their social environments (Fang et al., 2022). Previous research indicates that loneliness is associated with various negative outcomes, including anxiety, depression, and increased substance use (Chen et al., 2021; Ledur et al., 2022; Yuan et al., 2023).

The association between loneliness and substance abuse has been explored in different cultural contexts, revealing that lonely individuals might turn to substances as a coping mechanism (Gandhi et al., 2018; Shorey et al., 2013). In China, for instance, substance abusers reported higher levels of loneliness and associated mental health issues, suggesting a critical link between these variables (Chen et al., 2021). Similarly, a study in Brazil found that university students experiencing loneliness were more likely to exhibit internet addiction, which shares common psychological pathways with substance abuse (Ledur et al., 2022).

Understanding the factors influencing attitudes towards drugs is crucial for developing effective prevention and intervention strategies. Attitudes toward substances can be shaped by various factors, including personality traits, socio-demographic variables, and personal experiences (Boogar et al., 2014). For example, students with certain personality profiles, such as high neuroticism, may experience higher levels of loneliness, which in turn can influence their attitudes toward drug use (Li et al., 2023). Furthermore, socio-demographic factors like gender, age, and cultural background play a role in shaping these attitudes (McCabe et al., 2007).

The theoretical framework for this study draws on the socio-ecological model, which emphasizes the interplay between individual, relational, community, and societal factors in influencing health behaviors (Kovacic & Casabianca, 2023). This model is particularly relevant for understanding how personal feelings of loneliness can interact with broader social and environmental factors to impact attitudes toward drugs (Langenkamp, 2021). For instance, students from unstable childhood environments may develop maladaptive coping mechanisms, including substance use, to manage their social-emotional challenges (Babad et al., 2020).

Previous research has highlighted the importance of cultural context in understanding substance use behaviors, suggesting that findings from one cultural setting may not be directly applicable to another (Fabella, 2023). Given the increasing prevalence of loneliness and substance abuse among university students, the findings of this study have significant implications for public health interventions. By identifying loneliness as a potential risk factor for negative attitudes toward drugs, the study can inform the development of targeted prevention programs that address social and emotional needs (Shorey et al., 2013; Yuan et al., 2023). For example, interventions aimed at fostering social connections and enhancing emotional well-being may be effective in reducing substance use among students (Borawski & Nowak, 2022). Furthermore, the study contributes to the broader literature on the socio-ecological determinants of health by highlighting the role of individual-level factors, such as loneliness, in shaping health behaviors (Kovacic & Casabianca, 2023). This perspective underscores the importance of considering both personal and environmental factors in the design and implementation of public health interventions (Langenkamp, 2021).

In conclusion, this study aims to provide a comprehensive understanding of the relationship between loneliness and attitudes toward drugs among university students in Shiraz. By integrating insights from the socio-ecological model and drawing on a robust methodological framework, the research seeks to contribute valuable knowledge to the field of substance abuse prevention.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a cross-sectional design to examine the relationship between loneliness and attitudes toward drugs among university students in Shiraz. A total of 350

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participants were selected based on the sample size determination table by Morgan and Krejcie. Participants were recruited from various faculties at Shiraz University, ensuring a diverse representation of academic disciplines. The inclusion criteria were being a current student at Shiraz University and providing informed consent to participate in the study. Data were collected through self-administered questionnaires distributed during class sessions and university events.

2.2. Measures

2.2.1. Attitudes Toward Drugs

The dependent variable "Attitudes Toward Drugs" can be measured using the Attitude to Drug Scale (ADS) developed by Rackstraw in 1973. The ADS is a comprehensive tool designed to assess individuals' attitudes toward drug use and abuse. It comprises 30 items divided into three subscales: Perceived Harm, Social Acceptability, and Personal Acceptance. Respondents rate their agreement with each statement on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate more negative attitudes toward drug use. The reliability and validity of the ADS have been confirmed in various studies, demonstrating consistent psychometric properties across different populations (Boogar et al., 2014; Chen et al., 2021).

2.2.2. Loneliness

The independent variable "Loneliness" can be measured using the UCLA Loneliness Scale, developed by Russell, Peplau, and Ferguson in 1978 and revised in 1996. This widely used tool assesses subjective feelings of loneliness and social isolation. It contains 20 items, which are scored on a 4-point Likert scale ranging from 1 (never) to 4 (often). The scale includes subscales for Emotional Loneliness and Social Loneliness. Higher scores indicate greater levels of loneliness. The UCLA Loneliness Scale has demonstrated strong reliability and validity in numerous studies, confirming its robustness and applicability across various cultural contexts and demographic groups (Chen et al., 2021; González et al., 2018; Hosseinbor et al., 2014; Houghton et al., 2016; Maes et al., 2015; Nazzal et al., 2021; Teppers et al., 2013; Wu, 2023; Yuan et al., 2023).

2.3. Data Analysis

Data were analyzed using SPSS version 27. Pearson correlation coefficients were calculated to explore the relationships between the dependent variable (attitudes toward drugs) and each of the independent variables (emotional loneliness and social loneliness). To further examine the predictive power of loneliness on attitudes toward drugs, a linear regression analysis was conducted with attitudes toward drugs as the dependent variable and emotional loneliness and social loneliness as the independent variables. The significance level was set at $p < 0.05$ for all statistical tests.

3. Findings and Results

The demographic characteristics of the participants are summarized in Table 1. The sample consisted of 350 university students, of which 189 (54.0%) were female and 161 (46.0%) were male. The age distribution was as follows: 18-22 years (n=212, 60.6%), 23-27 years (n=113, 32.3%), and 28 years and older (n=25, 7.1%). In terms of academic level, 195 (55.7%) were undergraduate students, 111 (31.7%) were master's students, and 44 (12.6%) were doctoral students. Additionally, the majority of participants were single (n=297, 84.9%), while 53 (15.1%) were married.

Table 1

Descriptive Statistics

Variable	Mean	Standard Deviation
Attitudes Toward Drugs	3.85	0.76
Emotional Loneliness	2.47	0.88
Social Loneliness	2.65	0.93

Table 1 presents the descriptive statistics for the key variables in the study. The mean score for attitudes toward drugs was 3.85 (SD = 0.76), indicating generally negative attitudes. Emotional loneliness had a mean of 2.47 (SD = 0.88), while social loneliness had a mean of 2.65 (SD = 0.93), reflecting moderate levels of loneliness among participants.

Before conducting the main analyses, the assumptions of normality, linearity, and homoscedasticity were checked and confirmed. The Shapiro-Wilk test indicated that the data

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were normally distributed ($p > 0.05$ for all variables). Scatterplots demonstrated linear relationships between the dependent variable (attitudes toward drugs) and the independent variables (emotional loneliness and social loneliness). Homoscedasticity was assessed through visual inspection of the residual plots, which showed no discernible pattern, indicating that the variance of residuals was constant. Additionally, the Durbin-Watson statistic was 1.89, suggesting no significant autocorrelation. These results confirm that the assumptions for Pearson correlation and linear regression analyses were met.

Table 2

Correlation Table

Variable	Attitudes Toward Drugs	p-value
Emotional Loneliness	-0.45	< 0.001
Social Loneliness	-0.32	< 0.001

Table 2 shows the Pearson correlation coefficients between attitudes toward drugs and loneliness variables. Emotional loneliness was significantly negatively correlated with attitudes toward drugs ($r = -0.45$, $p < 0.001$), as was social loneliness ($r = -0.32$, $p < 0.001$). These results suggest that higher levels of loneliness are associated with more negative attitudes toward drugs.

Table 3

Summary of Regression Results

Source	Sum of Squares	Degrees of Freedom	Mean Squares	R	R^2	Adjusted R^2	F	p
Regression	56.78	2	28.39	0.52	0.27	0.26	65.11	< 0.001
Residual	154.22	347	0.44					
Total	211.00	349						

Table 3 provides the summary of the regression analysis. The overall regression model was significant, $F(2, 347) = 65.11$, $p < 0.001$, with an R^2 of 0.27 and an adjusted R^2 of 0.26, indicating that 27% of the variance in attitudes toward drugs can be explained by emotional and social loneliness.

Table 4

Multivariate Regression Results

Predictor Variables	B	Standard Error	β	t	p
Constant	4.25	0.24		17.71	< 0.001
Emotional Loneliness	-0.45	0.05	-0.37	-9.00	< 0.001
Social Loneliness	-0.28	0.06	-0.25	-4.67	< 0.001

Table 4 presents the multivariate regression results. Emotional loneliness was a significant predictor of attitudes toward drugs ($B = -0.45$, $SE = 0.05$, $\beta = -0.37$, $t = -9.00$, $p < 0.001$), as was social loneliness ($B = -0.28$, $SE = 0.06$, $\beta = -0.25$, $t = -4.67$, $p < 0.001$). These results suggest that both emotional and social loneliness negatively impact attitudes toward drugs, with emotional loneliness having a stronger influence.

4. Discussion and Conclusion

The current study aimed to explore the relationship between loneliness and attitudes toward drugs among university students in Shiraz. The results indicated significant correlations between the dimensions of loneliness—emotional and social—and negative attitudes toward drugs. Specifically, emotional loneliness was found to have a stronger negative correlation with attitudes toward drugs compared to social loneliness. Furthermore, the linear regression analysis demonstrated that both emotional and social loneliness were significant predictors of drug

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attitudes, with emotional loneliness showing a higher predictive value.

The findings of this study align with previous research indicating that loneliness, particularly emotional loneliness, plays a significant role in shaping attitudes toward substance use. For instance, Hosseinbor et al. (2014) found that individuals with substance dependence disorders experienced higher levels of both emotional and social loneliness compared to their non-dependent counterparts. This suggests that the subjective experience of loneliness, especially the lack of intimate relationships, may drive individuals to develop more negative attitudes toward drugs as a coping mechanism (Hosseinbor et al., 2014).

Chen et al. (2021) also reported a strong association between loneliness and drug craving among substance abusers in Sichuan Province, China. The study highlighted that emotional loneliness was a significant predictor of increased drug craving, which supports our finding that emotional loneliness is a critical factor influencing attitudes toward drugs. The psychological distress caused by emotional loneliness may lead individuals to view drug use more negatively, as they might be more aware of the potential harms and risks associated with substance abuse (Chen et al., 2021).

Moreover, the significant relationship between social loneliness and attitudes toward drugs is supported by findings from Ledur et al. (2022), who examined the link between internet addiction and loneliness among university students in Brazil. They found that social loneliness was a predictor of addictive behaviors, including substance use. This correlation suggests that students lacking a broader social network may develop negative attitudes toward drugs, possibly as a result of their awareness of the negative social consequences associated with substance use (Ledur et al., 2022).

The study by Yuan et al. (2023) on Chinese college students further corroborates our findings by demonstrating that loneliness was associated with social avoidance and depression, which are often linked to negative attitudes toward drugs. Students experiencing high levels of social loneliness might avoid social situations where drug use is prevalent, thereby developing more negative attitudes toward substances (Yuan et al., 2023).

Additionally, the socio-ecological model, which emphasizes the interplay between individual, relational, community, and societal factors, provides a useful framework for understanding our results (Karn et al., 2022). The model suggests that loneliness at the individual level, influenced by broader social and environmental factors, can significantly impact health behaviors and attitudes. Our findings support this notion by showing that both emotional and social loneliness, as individual-level factors, predict negative attitudes toward drugs among university students.

In conclusion, this study highlights the significant impact of loneliness on attitudes toward drugs among university students in Shiraz. By understanding the nuanced relationship between emotional and social loneliness and drug attitudes, we can develop more effective interventions and support mechanisms to enhance student well-being and reduce the prevalence of substance abuse. The integration of these findings into practice and policy can contribute to healthier, more connected university communities.

5. Limitations and Suggestions

Despite the insightful findings, this study has several limitations that must be acknowledged. First, the cross-sectional design restricts our ability to infer causality. While significant correlations and predictive relationships were identified, we cannot conclusively determine whether loneliness leads to negative attitudes toward drugs or if other underlying factors are at play. Longitudinal studies are necessary to establish causal links.

Second, the study relied on self-reported measures, which may be subject to social desirability bias and inaccurate self-assessment. Participants might underreport their levels of loneliness or their attitudes toward drugs due to perceived social stigma. Future studies could incorporate more objective measures or corroborate self-reports with peer or family assessments.

Third, the sample was limited to university students in Shiraz, which may limit the generalizability of the findings. Cultural, social, and educational contexts can significantly influence both loneliness and attitudes toward drugs. Therefore, it is important to replicate this study in different cultural settings and among diverse populations to validate the findings.

Future research should consider employing a longitudinal design to explore the causal relationships between loneliness and attitudes toward drugs. Tracking changes in loneliness and drug attitudes over time would provide deeper insights into how these variables interact and influence each other. Additionally, experimental studies could manipulate levels of loneliness to observe the resultant changes in attitudes toward drugs, thereby establishing a clearer causal pathway.

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It would also be beneficial to expand the demographic scope of the research. Including participants from various cultural backgrounds, educational institutions, and socio-economic statuses would enhance the generalizability of the findings. Comparative studies across different regions and countries could identify unique cultural or societal factors that modulate the relationship between loneliness and drug attitudes.

Moreover, future studies should incorporate a multi-method approach to data collection. Combining self-reported measures with qualitative interviews, focus groups, and physiological assessments could provide a more comprehensive understanding of the experiences of loneliness and their impact on drug attitudes. This triangulation of data would help mitigate the limitations of self-report bias and offer richer, more nuanced insights.

The findings of this study have important implications for public health interventions and university support services. Given the significant relationship between loneliness and negative attitudes toward drugs, universities should prioritize initiatives aimed at reducing loneliness among students. Developing programs that foster social connections, such as peer mentorship, social clubs, and community-building activities, could mitigate feelings of loneliness and potentially reduce negative attitudes toward drugs.

Counseling and mental health services on campuses should also address loneliness as a critical component of their support offerings. Training counselors to recognize the signs of emotional and social loneliness and providing targeted interventions, such as group therapy and social skills training, could help students build stronger social networks and intimate relationships, thereby improving their overall mental health and reducing the likelihood of negative attitudes toward drugs.

Additionally, public health campaigns should emphasize the importance of social connectedness and provide resources for students to build and maintain healthy relationships. Educating students about the risks associated with loneliness and its potential impact on substance use attitudes can empower them to seek help and engage in positive social interactions. Collaborative efforts between universities, public health organizations, and community groups can create a supportive environment that addresses the root causes of loneliness and promotes healthier attitudes toward drugs.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed in this article.

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