Family Factors Among Patients with Substance Use Disorder in Sulaimani City, Kurdistan: A Case-Control Study

Authors

Omar Hussein Shareef [a] ; Araz Mohammed Abdulkarim [b] ; Akam Mustafa Hassan [c]

Affiliation

a. University of Sulaimani
b. Department of Psychiatric and Mental Health Nursing, College of Nursing, University of Sulaimani, City of Sulaimani, Iraq;
c. Anesthesia Department College of Health and Medical Technology, Sulaimani Polytechnic University

A R T I C L E I N F O

Abstract

Background: Substance abuse is a global health problem with profound impacts on individuals and society. Dysfunctional family dynamics are known to play a significant role in the development of substance use disorder (SUD).

Aim: To explore the role of family factors, including family history and general family functioning, in the development of substance use disorder among patients in Sulaimani City, Kurdistan, Iraq.

Methods: A quantitative case-control study was conducted from February 2023 to July 2023, involving 120 adults (60 patients with substance use disorder and 60 controls). The McMaster Family Assessment Device-General Functioning Scale (FAD-GF) was used to assess family functioning, and data were collected on sociodemographic characteristics, family history of substance abuse, and factors related to substance use. Statistical analysis was conducted using SPSS-22.

Results: The study found that 31.7% of the case group had a family history of substance abuse, compared to 10% in the control group. Unhealthy family functioning was significantly more prevalent in the case group (64.6%) than in the control group (15%). Methamphetamine (58%) was the most commonly used substance, followed by alcohol (28.3%) and heroin (13.3%).

Conclusion: Family history of substance abuse and unhealthy family functioning are significant factors associated with substance use disorder in Sulaimani City. Involvement of families in treatment and prevention efforts is essential for better outcomes in substance abuse management.

What is already known about the topic?

- *Substance use disorder (SUD) is a complex and multifactorial condition influenced by biological, psychological, and social factors, including family dynamics.*
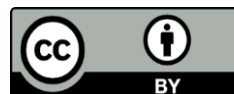
Introduction:

Substance abuse and addiction represent a significant global health challenge, impacting individuals and communities across diverse sociodemographic backgrounds. The devastating consequences of substance abuse extend far beyond the individual, affecting families and society. Substance abuse is a complex and costly public health issue, contributing to both physical and psychiatric conditions (Harris et al., 2016; Dupout, Compton, & McLellan, 2015; Kassani et al., 2015). Excessive alcohol consumption and substance misuse are prevalent in various age groups, often resulting in severe health complications, and in extreme cases, death (Rahim, 2023). These behaviors lead to increased hospital admissions and correlate with rising crime rates and diminished productivity (Alsubaie, 2023).

In the United States, the National Institute on Drug Abuse (2016) estimated that approximately 7 million people were using illicit drugs. In Iraq, substance abuse has emerged as a relatively recent yet rapidly growing problem. Among the substances most commonly abused by patients seeking treatment, alcohol (37.8%) and medications (27.6%) were predominant, with substance abuse-related legal cases (65.65%) outnumbering those related to substance smuggling (Muzil et al., 2023). Al Hemiery et al. (2014) also reported that 9.2% of substance abuse cases went underreported. The prevalence of methamphetamine (Crystal Meth) use has risen sharply in Iraq, with Rahim (2023) providing evidence of its widespread distribution. Detoxification, as described by Vederhus et al. (2016), refers to the process of reducing a substance's biological activity after its metabolism, a critical step in addiction treatment. Choosing an appropriate detoxification strategy depends on several factors, including clinical judgment, the severity of dependence, and any concurrent health issues (Rapp et al., 2014).

The literature on substance use disorder emphasizes the multifaceted nature of its etiology, with no single theory adequately explaining its onset (Fortinash & Worret, 2012). The reasons individuals engage in substance abuse are varied and may include coping mechanisms for stress, trauma, emotional pain, or peer pressure (Inanlou et al., 2020).

Additionally, genetic factors, environmental influences, and social determinants can increase vulnerability to substance abuse (Ulas & Eks, 2019).

Family dynamics play a significant role in shaping individual behavior, attitudes, and overall well-being. Familial factors such as a history of addiction, dysfunctional family environments, and a lack of social support are often linked to substance abuse (Al-Naser & Omer, 2020). Family functioning involves several dimensions, including relationships, role understanding, and problem-solving abilities. Previous studies have shown that weak family functioning is strongly associated with alcohol abuse and can serve as a predictor of substance dependence (Liu et al., 2020; Fortinash & Worret, 2012).

Exploring family-related factors is crucial for understanding the complex relationship between family dynamics and substance abuse. This understanding can inform the development of family-centered interventions and support systems (Al-Ghamid & Morsy, 2019). Furthermore, it is essential to recognize that sociodemographic factors significantly influence an individual's susceptibility to substance abuse and their ability to access treatment services. Assessing these factors among patients with substance use disorders is a critical step in designing targeted interventions and policies that address the unique needs of diverse populations (Harnett et al., 2017).

Given these considerations, the present study aims to investigate the sociodemographic characteristics and overall family functioning among patients diagnosed with substance use disorders. It also seeks to identify key differences between individuals with substance use disorders and those without, providing insight into the familial and sociodemographic influences that contribute to substance abuse. The study was conducted at the Shahid Hemin Mental Health Center's detoxification unit in Sulaimani City, Kurdistan, Iraq.

Methods:

Study Design and Setting:

This quantitative case-control study was conducted at Shahid Hemin Mental Health Center, located in Sulaimani City, Kurdistan, Iraq. The center was chosen for its high caseload of individuals seeking treatment for substance abuse. The study took place from February 2023 to July 2023.

Participants:

The study involved a total of 120 adults, divided into two groups: 60 individuals with substance use disorder (case group) and 60 individuals without substance use disorder (control group).

Case Group:

A non-probability purposive sampling method was employed to select participants for the case group. The sample size of 60 was determined based on a 95% confidence interval and a previously reported substance use disorder prevalence of 17.8% for alcohol use and 7.02% for drug use in Iraq (Al-Heminary et al., 2010). Inclusion criteria for the case group were as follows: individuals currently admitted to the detoxification unit at Shahid Hemin Mental Health Center, diagnosed with substance use disorder according to the DSM-V criteria, aged 18 years or older, and both male and female. Subjects with comorbid psychiatric disorders were excluded from the study.

Control Group:

The control group consisted of 60 individuals without a history of substance use disorder and free from any medical illnesses. Participants were purposefully selected from the community, Sulaimani University staff, and the relatives of the case group participants. The control group was matched with the case group based on sociodemographic characteristics to ensure comparability.

Study Instrument:

Data were collected using a researcher-developed questionnaire, which was informed by a comprehensive review of the literature and previous studies. Content validity was established through input from three experts in psychiatry and mental health nursing. The reliability of the questionnaire was assessed using Cronbach's alpha, which yielded a strong internal consistency of 0.82.

The questionnaire comprised four sections:

- **Part 1:** Sociodemographic characteristics, including age, gender, marital status, education level, employment status, residential area, and income status.
- **Part 2:** Family history of substance abuse.
- **Part 3:** The McMaster Family Assessment Device - General Functioning Subscale (FAD-GF) (Epstein, Baldwin & Bishop, 1983). This standardized scale assesses family functioning through 12 items, focusing on problem-solving, communication, roles, affective responsiveness, affective involvement, and

behavior control. Responses are rated on a 4-point Likert scale, where 1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree. A higher score indicates more problematic family functioning, with scores between 1-2 indicating healthy functioning and scores between 3-4 indicating unhealthy family functioning.

- **Part 4:** Factors related to substance abuse, including the age of first substance use, types of substances abused, number of police arrests, and the method of admission to the detoxification unit.

Parts 1, 2, and 3 were used to collect data from both the case and control groups, while Part 4 was specifically used to gather data from the case group.

Data Collection Procedure:

Data were collected through face-to-face interviews, where participants verbally answered the questionnaire items, and the researcher recorded their responses. This approach ensured accurate and consistent data collection.

Data Analysis:

The collected data were analyzed using SPSS-22. Descriptive statistics, including frequency (F), percentage (%), mean ($\bar{x}$), and standard deviation (±SD), were used to summarize sociodemographic characteristics and family factors. Inferential statistics, specifically the chi-square test (X^2), were employed to examine associations between variables. The significance level was determined using p-values:

- Not significant (NS) if $P > 0.05$
- Significant (S) if $P < 0.05$
- Highly significant (HS) if $P < 0.01$

Ethical Considerations:

Ethical approval for the study was granted by the Scientific Committee of the Psychiatric and Mental Health Nursing Department at the College of Nursing and the Ethical Committee of the College of Medicine, University of Sulaimani. Permission was also obtained from the Sulaimani General Health Directorate. Participants were fully informed about the aims, procedures, and voluntary nature of the study, and were assured that they could withdraw at any time without consequence. Verbal informed consent was obtained from each participant before data collection, and confidentiality and privacy were strictly maintained throughout the study.

Limitations:

The study has some limitations, including a small sample size due to the specific nature of the target population and the single-center setting. As such, the generalizability of the findings may be limited to similar detoxification units or mental health centers in the region. Additionally, due to the small sample size, the relationship between family functioning types and sociodemographic characteristics could not be fully explored, which may impact the broader applicability of the results.

Results:

The present study involved a total of 120 adults, with 60 individuals in the case group (those with substance use disorder) and 60 individuals in the control group (those without substance use disorder).

Sociodemographic Characteristics: As shown in Table 1, the case and control groups were significantly matched in terms of sociodemographic characteristics (P < 0.05). The majority of the case group (36.7%) were in the 18-25 years age range, followed by 28.3% in the 34-41 years range, with a mean age of 30.5 ± 8.22 years. In the control group, the highest proportion (36.7%) were in the 26-33 years age group, followed by 25% in the 18-25 years range, with a mean age of 32.6 ± 9.31 years.

In terms of gender, 81.7% of the case group and 78.3% of the control group were male. Regarding marital status, 38.3% of individuals in the case group were married, followed by 31.7% who were separated. In contrast, the control group had a higher proportion of married individuals (56.7%) and a smaller proportion of unmarried individuals (33.3%).

Employment and Income: Both groups had a high proportion of unemployed individuals, with 65% of the case group and 66.7% of the control group being unemployed. In terms of income, 65% of the case group reported barely sufficient income, while 63.3% of the control group reported the same. The case group also had a higher percentage (65%) living in urban areas compared to the control group.

Education Level: Regarding educational attainment, 58.3% of the case group had completed secondary school, followed by 23.3% who had attended college or an institute. Among the control group, 50% had completed secondary school, and 35% had attended college or an institute.

Family History of Substance Abuse: Table 2 shows that 31.7% of individuals in the case group had a family history of substance abuse, compared to 10% of the control group.

Family Functioning: A significant difference in family functioning was observed between the two groups. In the case group, 64.6% reported unhealthy family functioning, compared to just 15% in the control group. This difference was statistically significant at the P < 0.001 level (Table 3).

Substance Use Patterns: In the case group, the majority (72%) initiated substance use between the ages of 18 and 25 years (Table 4). Of the substances used, 58.3% of individuals reported using methamphetamine (Crystal), 28.3% reported using alcohol, and 13.3% reported using heroin.

Police Arrests and Detoxification Admission: When assessing police involvement, 60% of the case group had not been arrested, 23.3% had been arrested once, and 6.7% had been arrested three times. In terms of admission to the detoxification unit, the majority (75%) were admitted involuntarily by their family members or relatives, while 25% were admitted voluntarily.

These findings highlight the significant sociodemographic and family-related factors associated with substance use disorder and underscore the importance of considering family dynamics in both the prevention and treatment of substance abuse.

Table 1: Distribution of Sociodemographic Characteristics of Cases and Control Group

Socio-demographics	Case No. (%)	Control No. (%)	Chi-square, df, P-value
18-25	22 (36.7)	15 (25)	41.083, 4, 0.001
26-33	16 (26.7)	22 (36.7)	
34-41	17 (28.3)	13 (21.7)	
42-49	5 (8.3)	7 (11.7)	
50-57	0	3 (5)	
Mean age	30.5	32.6	
SD	8.22	9.31	
Male	49 (81.7)	47 (78.3)	43.2, 1, 0.001
Female	11 (18.3)	13 (21.7)	
Single	17 (28.3)	20 (33.3)	54.8, 3, 0.01
Married	23 (38.3)	34 (56.7)	
Separated	19 (31.7)	6 (10)	
Divorced	1 (1.7)	0	
Employed	21 (35)	20 (33.3)	12.03, 1, 0.001
Unemployed	39 (65)	40 (66.7)	

Urban	39 (65)	38 (63.3)	60.45, 2, 0.001
Suburban	17 (28.3)	18 (30)	
Rural	4 (6.7)	4 (6.7)	
Sufficient	13 (21.7)	14 (23.3)	59.15, 2, 0.01
Barely	40 (66.7)	39 (65)	
Insufficient	7 (11.7)	7 (11.7)	
Primary school	11 (18.3)	9 (15)	26.25, 2, 0.001
Secondary school	35 (58.3)	30 (50)	
College and Institute	14 (23.3)	21 (35)	

Table 2: Family History of Substance Abuse of Both Groups

Family history of substance abuse	Case No. (%)	Control No. (%)	Chi-square, df, P-value
Yes	19 (31.7)	6 (10)	25, 9.8, 2, 0.007
No	40 (66.7)	54 (90)	
Not sure	1 (1.7)	0	
Total	60	60	

Table 3: Distribution of General Family Functioning of the Abusers and Control Group

Family function	Case No. (%)	Control No. (%)	Chi-square, df, P-value
Healthy family functioning	22 (36.4)	51 (85)	29.41, 2, 0.001
Unhealthy family functioning	38 (64.6)	9 (15)	
Total	60	60	

Table 4: Distribution of Some Related Factors of Substance Use Among Case Groups

Related factors	No	%
Age of first abuse 18-25	36	72%
Age of first abuse 26-33	14	28%
Type of substance abuse Alcohol	17	28.3%
Type of substance abuse Cristal (Methamphetamine)	35	58.3%
Type of substance abuse Heroin	8	13.3%
Number of police arrests One	14	23.3%
Number of police arrests Two	6	10%
Number of police arrests Three	4	6.7%
Number of police arrests None	36	60%
Type of admission to detoxification unit Voluntary	15	25%
Type of admission to detoxification unit Involuntary	45	75%

Discussion:

The present study revealed a high prevalence of substance use disorder (SUD) among younger individuals, particularly males, with lower educational attainment and unemployment. These findings are consistent with previous studies by Atar et al. (2016), Hibell et al. (2013), and Lamptey (2005). Notably, approximately two-thirds of the case group reported having minimal income, and only 21.7% were identified as having insufficient income. This contrasts with the findings of Lemstra et al. (2008), who reported that a higher incidence of school dropout and low economic status were more prevalent in individuals with substance use disorder. Mohammed (2014) suggested that gender differences in substance abuse could be attributed to divergent behavioral patterns; males tend to associate with independence and risk-taking behaviors, whereas females are less likely to engage in such behaviors.

In this study, a significant proportion of individuals with substance use disorder resided in urban areas, which aligns with the results of Bradberry (2020) in Ethiopia. This may

be attributed to social, environmental, and stigma-related factors, as well as the availability of treatment services in urban settings.

Regarding marital status, one-third of the participants in the case group were separated, which contrasts with the findings of Zaki et al. (2016), where over half of the substance users were married. However, our results support the conclusions of Bradberry (2020) and Gueta, Chen, and Ronel (2021), who observed that individuals separated from their partners tend to experience more favorable long-term outcomes related to substance use. This may be due to the lack of a close personal relationship, which could otherwise serve as a protective factor against substance misuse.

In terms of family history of substance abuse, 31.7% of the case group reported a familial history of addiction, compared to only 10% in the control group. This finding is consistent with Mohammed (2014), who found a strong correlation between familial substance abuse and early initiation of substance use among adolescents and younger individuals.

The study also highlighted a strikingly high prevalence of unhealthy family functioning in the case group (64.6%) compared to only 15% in the control group. This supports findings by Liu et al. (2020), which indicated that poor family functioning is strongly associated with substance abuse. Similarly, Zeng and Tan (2021) observed that individuals with substance use disorder often perceive their family environment as dysfunctional, which can contribute to their substance misuse. Dysfunctional family dynamics, including conflict and unhealthy coping mechanisms, may exacerbate the substance use problem (Akram & Capello, 2013). It is evident that addressing family functioning is critical in understanding and intervening in substance use behaviors (Zeng & Tan, 2021).

Regarding the onset of substance abuse, the majority of individuals in the case group initiated substance use between the ages of 18 and 25, with methamphetamine (Crystal) being the most commonly abused substance (58%), followed by alcohol (28.3%) and heroin (13.3%). This aligns with studies by Liu (2020) and Rahim (2023), who reported a high prevalence of methamphetamine use, which has become increasingly widespread and dangerous in Iraq. The spread of methamphetamine has led to severe societal consequences, including an increase in crime and public health crises.

Although the abuse of tramadol (Ultram) was reported as the primary substance among patients in Baghdad's medical city detoxification unit (Al-Hemiery et al., 2014), the current study found that alcohol, though less common than methamphetamine, still

represented a significant portion (28.3%) of substance use in the case group. Brady (2001) noted that family dysfunction, especially marked by conflict, can significantly increase the risk of alcohol abuse among adolescents and young adults.

Additionally, 60% of the individuals with substance use disorder had no prior police arrests, and 75% were admitted to the detoxification unit involuntarily by their families. This contrasts with Lamptey's (2005) study, which found a higher percentage of individuals with prior police involvement. Our results suggest that many individuals with substance abuse issues refuse voluntary treatment, aligning with the findings of Fortinash and Worret (2012), who emphasized the risks posed when individuals avoid treatment, including the potential for violent behavior, which may harm both the individuals and the community. These findings underscore the importance of integrating family-based interventions into the treatment process.

Limitations:

This study has several limitations. First, it was conducted in a single setting, the detoxification unit at Shahid Hemin Mental Health Center, which may introduce sample bias and limit the generalizability of the findings. Additionally, the study did not explore the distinctions based on sociodemographic characteristics within the substance-using population, which could have provided more detailed insights into the factors influencing substance use. Despite these limitations, this study is the first of its kind in the field of psychiatric mental health nursing in Sulaimani City, Kurdistan, to investigate family functioning among patients with substance use disorder compared to those without.

Conclusion:

The findings of this study demonstrate that substance use disorders are highly prevalent among younger, unemployed males, primarily residing in urban areas. Methamphetamine was the most commonly abused substance, followed by alcohol and heroin. The study also identified a strong association between substance use disorders and family history of substance abuse, as well as unhealthy family dynamics. These factors were notably more prevalent among those with substance use disorders compared to the control group. The research suggests that dysfunctional family environments and familial substance abuse play critical roles in the development and progression of substance use behaviors.

Recommendations:

Given the high prevalence of substance use disorders among young, male, and unemployed individuals, it is crucial to include family-based interventions in the treatment and prevention programs. Such programs should focus on improving family functioning and addressing the familial factors contributing to substance misuse. Additionally, efforts to involve families in therapeutic processes, education, and support are essential for enhancing treatment outcomes and reducing the long-term impact of substance abuse.

References

Akram, Y., & Copello, A. (2013). Family-based interventions for substance misuse: A systematic review of reviews. *The Lancet, 382*(S24). https://doi.org/10.1016/S0140-6736(13)61476-9

Al-Ghamdi, R. S., & Morsy, N. (2019). Nurses' knowledge about substance abuse and withdrawal symptoms among patients in Al-Amal hospital-Jeddah. *European Journal of Biomedical and Life Sciences, 2,* 19-26. https://doi.org/10.2139/ssrn.3364528

Al-Hemiery, N., Dabbagh, R., Hashim, M. T., Al-Hasnawi, S., Abutiheen, A., Abdulghani, E. A., ... & Rawson, R. A. (2017). Self-reported substance use in Iraq: Findings from the Iraqi National Household Survey of Alcohol and Drug Use, 2014. *Addiction, 112*(8), 1470-1479. https://doi.org/10.1111/add.13726

Al-Naser, A., & Omar, A. (2020). The level of psychological and social compatibility between drug addicts and those recovering from addiction. *International Journal of Educational and Psychological Studies, 9*(1), 52-76. https://doi.org/10.3390/ijerph18115945

Alsubaie, S. (2023). Psychosocial life aspects among substance misuse clients who are at the rehabilitation phase: A narrative review. *Health Psychology Research, 11*, 1-9. https://doi.org/10.16910/journal/health/11/epub/health/23

Atar, A. Ö., Yalçin, Ö., Uygun, E., Demirci, A. C., & Erdoğan, A. (2016). The assessment of family functions, dyadic adjustment, and parental attitude in adolescents with substance use disorder. *Nöro Psikiyatri Arşivi, 53*(1), 38. https://doi.org/10.29399/npa.21051

Brady, K. T. (2001). Comorbid posttraumatic stress disorder and substance use disorders. *Psychiatric Annals, 31*(5), 313-319. https://doi.org/10.3928/0048-5713-20010501-09

DuPont, R. L., Compton, W. M., & McLellan, A. T. (2015). Five-year recovery: A new standard for assessing effectiveness of substance use disorder treatment. *Journal of Substance Abuse Treatment, 58*, 1-5. https://doi.org/10.1016/j.jsat.2015.06.002

Fortinash, K. M., & Worret, P. A. H. (2011). *Psychiatric mental health nursing* (4th ed.). Elsevier Health Sciences.

Harnett, P. H., Lynch, S. J., Gullo, M. J., Dawe, S., & Loxton, N. (2013). Personality, cognition, and hazardous drinking: Support for the 2-Component Approach to Reinforcing Substances Model. *Addictive Behaviors, 38*(12), 2945-2948. https://doi.org/10.1016/j.addbeh.2013.07.022

Harris, S. K., Knight Jr, J. R., Van Hook, S., Sherritt, L., Traci, L. B., Kulig, J. W., ... & Saitz, R. (2016). Adolescent substance use screening in primary care: Validity of

computer self-administered versus clinician-administered screening. *Substance Abuse, 37*(1), 197-203. https://doi.org/10.1080/08897077.2015.1073912

Hibell, B. (2013). *The 2012 ESPAD impact survey*. Lisbon: European Monitoring Centre for Drugs and Drug Addiction.

Inanlou, M., Bahmani, B., Farhoudian, A., & Rafiee, F. (2020). Addiction recovery: A systematized review. *Iranian Journal of Psychiatry, 15*(2), 172. https://doi.org/10.18502/ijps.v15i2.1942

Javaraiah, R. K., David, C. M., Namitha, J., Tiwari, R., & Benakanal, P. (2020). Evaluation of salivary lactate dehydrogenase as a prognostic biomarker in tobacco users with and without potentially malignant disorders of the oral cavity. *South Asian Journal of Cancer, 9*(02), 93-98. https://doi.org/10.4103/sajc.sajc_52_19

Kassani, A., Niazi, M., Hassanzadeh, J., & Menati, R. (2015). Survival analysis of drug abuse relapse in addiction treatment centers. *International Journal of High Risk Behavior, 4*(3). https://doi.org/10.17795/ijhrb-23348

Lamptey, J. J. (2005). Socio-demographic characteristics of substance abusers admitted to a private specialist clinic. *Ghana Medical Journal, 39*(1), 2-7. https://doi.org/10.4314/gmj.v39i1.26751

Lemstra, M., Bennett, N. R., Neudorf, C., Kunst, A., Nannapaneni, U., Warren, L. M., ... & Scott, C. R. (2008). A meta-analysis of marijuana and alcohol use by socio-economic status in adolescents aged 10–15 years. *Canadian Journal of Public Health, 99*, 172-177. https://doi.org/10.1007/BF03405053

Muzil, J. A., Abdulwahid, D. A., Abed, A. H., & Kammad, Z. A. (2023). Substance abuse in Iraq, quantifying the picture. *Journal of Population Therapeutics and Clinical Pharmacology, 30*(12), 302-313. https://doi.org/10.22329/jptcp.v30i12.7302

Rahim, H. U., Allevato, E., Vaccari, F. P., & Stazi, S. R. (2023). Biochar aged or combined with humic substances: Fabrication and implications for sustainable agriculture and environment—a review. *Journal of Soils and Sediments, 1-24*. https://doi.org/10.1007/s11368-023-03051-z

Rapp, R. C., Van Den Noortgate, W., Broekaert, E., & Vanderplasschen, W. (2014). The efficacy of case management with persons who have substance abuse problems.

Journal of Consulting and Clinical Psychology, 82(4), 605–618. https://doi.org/10.1037/a0036317

Ulaş, E., & Ekşi, H. (2019). Inclusion of family therapy in rehabilitation programs for substance abuse and its efficacious implementation. *The Family Journal, 27*(4), 443-451. https://doi.org/10.1177/1066480719880052

Vederhus, J. K., Clausen, T., & Humphreys, K. (2016). Assessing understandings of substance use disorders among Norwegian treatment professionals, patients, and the general public. *BMC Health Services Research, 16*, 1-10. https://doi.org/10.1186/s12913-016-1709-4

Zaki, N., Soltan, M., Hashem, R. E., Elwasify, M., Elwasify, M., & Elturky, J. (2016). Help-seeking patterns in an Egyptian sample of substance use disorder patients. *Middle East Current Psychiatry, 23*(3), 147-152. https://doi.org/10.4103/1687-4246.193438

Mohammed, A. Y. (2014). Assessment of substance use and associated factors among high school and preparatory school students of Ginnir Town, Bale Zone, Southeast Ethiopia. *American Journal of Health Research, 2*(6), 414-419. https://doi.org/10.11648/j.ajhr.20140206.14

Liu, J., McDonough, D. J., Wang, Y., Zhou, Y., Gao, Z., & Zhou, C. (2020). Investigating the associations among drug dependents' family function and exercise attitudes: Marital status differences. *International Journal of Environmental Research and Public Health, 17*(21), 8111. https://doi.org/10.3390/ijerph17218111

Gueta, K., Chen, G., & Ronel, N. (2021). Maintenance of long-term recovery from substance use: A mixed methods study of self-and treatment-changers. *Drugs: Education, Prevention, and Policy, 28*(5), 511-522. https://doi.org/10.1080/09687637.2020.1846842

Bradberry, C. W. (2020). Neuromelanin MRI: Dark substance shines a light on dopamine dysfunction and cocaine use. *American Journal of Psychiatry, 177*(11), 1019-1021. https://doi.org/10.1176/appi.ajp.2020.19060653

Zeng, X., & Tan, C. (2021). The relationship between family functioning of individuals with drug addiction and relapse tendency: A moderated mediation model. *International Journal of Environmental Research and Public Health, 18*(2), 625. https://doi.org/10.3390/ijerph18020625

Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster Family Assessment Device. *Journal of Marital and Family Therapy, 9*(2), 171-180. https://doi.org/10.1111/j.1752-0606.1983.tb01497.x