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PSYCHOLOGICAL NEEDS AND QUANTITY OF SUBSTANCE USE IN DUHOK CITY

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ABSTRACT

This study aimed to examine the psychological needs of substance abusers in Duhok City, Kurdistan Region of Iraq, using a mixed-methods approach to analyze 47 incarcerated individuals in the adult male and female reformatory of Duhok, and also collected official records from 2018 to 2024 related to substance convictions and individuals who visit health sectors with the intention of treatment. The assessment tools contained six psychological domains through semi-structured questionnaires to be analyzed for measuring the psychological needs. Participants reported significantly lower levels of psychological needs than expected (39.543 vs. 41.5, $p < 0.05$), with self-esteem being significantly affected and competence being less affected. Males reported stronger social bonds than females. Quantitative analysis revealed significant increases in substance-related convictions: adult males increased from 40 (2018) to 494 (2022) and 228 (from Jan to Jul 2024), totaling 1,830 convictions. The number of females who were convicted due to drugs is 138, while juvenile males recorded are 122, among 11–17-year-olds who are trafficking and consuming drugs. Treatment pathways have shown a shift from public to private health care. Azadi Hospital's cases have decreased from 160 (2019) to 90 in 2023 and only 20 (from Jan to Jul 2024), while private clinics treated over 1,000 patients annually. These findings highlight the urgent need for comprehensive psychological interventions that address low self-esteem, gender-specific programs, fill the psychological needs, and improve access to healthcare to address the region's worsening substance abuse crisis.

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INTRODUCTION

Drug and alcohol problems are challenging issues for people all over the world today (Bahji, 2024). The relationship between psychological well-being and substance use has become increasingly clear through decades of research. Yet, many ways to help still only look at the physical side of addiction. They miss the deep mind and heart needs that make people start using drugs in the first place (Dellazizzo et al., 2023). New studies

show that folks with drug habits often lack some basic mental needs. These gaps can start and keep the drug habits going (Russell et al., 2024).

The Kurdistan Region of Iraq, including Duhok city, has been facing significant problems in recent years that have contributed to rising rates of substance use. Many years of conflict, economic uncertainty, and social disruption have created conditions where many people turn to drugs and alcohol as ways of coping with stress, trauma, and hopelessness (Al-Sudani, 2023). Understanding the reasons people use substances and what psychological needs they are trying to meet through their use is crucial for developing more effective treatment and prevention programs (Hatoum et al., 2023).

One particular thing that comes to mind when thinking about human psychological needs is Self-Determination Theory, developed by the researchers Edward Deci and Richard Ryan (Ryan & Deci, 2000). This theory suggests that all people have three psychological needs that must be met for them to thrive: autonomy (feeling like you have control over life and choices), competence (feeling very capable and compelling in activities), and relatedness (feeling connected to and cared for by others) (Deci & Ryan, 2017). When these needs aren't met, people often turn to unhealthy coping strategies, including substance use (Neighbors et al., 2003).

It becomes even more complex when we are working with people who have been arrested and incarcerated because they used substances. They also are facing more problems in their addiction, including family and social disconnection, loss of employment and housing, social exclusion, and limited access to treatment and support services (Fazel et al., 2016). The prison environment itself continues to intrude on psychological well-being by restricting autonomy, diminishing opportunity for meaningful activity, and disrupting social relationships (Machado et al., 2024).

In Iraq and the Middle East region, substance use has become an increasingly serious issue for everyone. Crystal methamphetamine, in particular, has emerged as a significant problem, with authorities reporting dramatic increases in both those who are using and trafficking (UNODC, 2024). The traditional and low approach is criminalizing drug use and focusing primarily on punishment, which has shown limited effectiveness in treating the mentioned issues that drive addiction (Prison Policy Initiative, 2024). There's growing recognition that a more comprehensive approach that addresses psychological, social, and medical needs may be more effective (Volkow, 2020).

Despite the growth in research on psychological needs and drug consumption among Western countries, not much is known about these connections in Middle Eastern societies, particularly among inmates (Bajbouj et al., 2022). Religious, cultural, and social factors unique to the region may impact both how psychological needs are expressed and how drug consumption problems emerge and are addressed (Stewart et al., 2024).

This study wanted to help reduce this knowledge gap by examining the psychological needs of prisoners who have substance use problems and are currently incarcerated in Duhok city. By establishing what this population most acutely needs, we hope to help inform the development of more effective treatment and rehabilitation programs that not only target the addiction itself but also the psychological reasons for it

(Williams et al., 2023). The aims of this research are threefold: first, to assess the psychological needs of individuals with substance use disorders in prisons; second, to quantify the number of offenders sentenced for drug offenses in Duhok city; and third, to explore the patterns of healthcare utilization for withdrawal symptoms in them. These objectives collectively strive to capture a general image of the extent and nature of substance misuse problems within the region and to identify priority areas for intervention and support.

LITERATURE REVIEW

In the connection between mental health and drug use, it has been the focus of rigorous scientific research for several decades. In many studies after study, researchers have found that individuals with addiction tend to have unmet psychological needs not fulfilled by healthier avenues (Ryan et al., 2008). This issue has led to various theoretical models for explaining such relationships, and one of the most pervasive and empirically supported approaches is Self-Determination Theory (Ntoumanis et al., 2020).

Self-Determination Theory was first formulated from 1970 to 1980 by Edward Deci and Richard Ryan and has since been applied to explain motivation and well-being in various areas of human life (Ryan & Deci, 2000). The theory postulates that humans have three basic psychological needs to function optimally and be satisfied. The first is autonomy, which is the feeling of having control and choice over your behaviour and life circumstances (Patrick et al., 2011). The second one is competence, which is the sense of being practical and capable of getting desired outcomes and mastering new ones (Fortier et al., 2009). The third is relatedness, where there is a need to be connected to others and have warm interpersonal relationships (Grolnick & Ryan, 1989).

Based on history, research has continuously demonstrated that when these three basic needs are fulfilled, people feel higher motivation, better mental health, and improved outcomes in life (Sheeran et al., 2021). Conversely, when these psychological needs are blocked or frustrated, they are more likely to result in psychological distress, and individuals may turn to maladaptive coping mechanisms like the use of drugs (Wild et al., 2011). This association between unmet psychological needs and drug use has been established between cultures and populations (Smith, 2011).

In the specific case of addiction disorders, several studies have explored how principles of Self-Determination Theory may be used to understand processes of recovery and addiction. Ryan, Plant, and O'Malley (1995) were the first to explore motivational processes involved in addiction treatment, and participants who scored themselves as more autonomous and self-determined in their treatment decision were more effective. Follow-up research has amplified these results, demonstrating that interventions grounded in autonomy support, competence, and relatedness are more effective than those that overwhelm through external control or coercion (Russell & Williams, 2023).

Autonomy's contribution to drug use and recovery has been a particular issue in the literature. Individuals with drug use disorders most frequently cite that their alcohol or drug use has become out of control and dominated their lives, undermining a sense of

personal agency and choice (Mullen et al., 2011). Treatment approaches that can rebuild a sense of personal control and agency effectively promote long-term recovery (Patrick & Williams, 2012). It involves clients in treatment planning, advocating for treatment choices, and helping them acquire self-management and relapse prevention skills (Sharma & Smith, 2011).

Substance use disorders also require competence needs. According to most individuals who have addiction problems, they assert that they feel powerless and cannot handle issues in life without the consumption of substances (Neighbors et al., 2003). Research has also shown that skill-building and self-efficacy-enhancing interventions can potentially be particularly effective at promoting recovery (Fortier et al., 2009). They are not only specific targeted addiction skills like learning about triggers and managing cravings, but also more general life skills like work training, relationship skills, and stress management (Sweet et al., 2012).

The need for relatedness is now arguably the most crucial variable in substance use and recovery. Addiction disorders typically develop and are maintained in social milieus, and social relationships have essential roles both in recovery and development of addiction (Patrick et al., 2007). The research has consistently proven that patients with stronger social support networks tend to have better treatment outcomes and less recidivism (Williams et al., 2006). By contrast, social isolation and disconnection from supportive relationships are robust indicators of continuous substance use (Plant & Ryan, 2013).

More recent work has also begun to explore how these psychological needs are manifest differently across varying cultural and social contexts. Research studies among non-Western populations have tended to affirm the universality of these basic needs but also demonstrated substantial cultural variation in their expression and fulfillment (Chen et al., 2015). For example, in what autonomy is being expressed, there may vary between individualist and collectivist cultures, yet the necessity for self-determination appears to be found across all (Chirkov et al., 2003).

Maslow's Hierarchy of Needs remains a seminal theoretical model in explaining psychological susceptibility to substance use disorders. For Maslow (1943), human motivation rested on the need to meet a hierarchical continuum of needs, from physiological necessity through safety, love and belonging, esteem, and finally self-actualization.

The need for safety and security in the second step of Maslow's model is paramount for the stability of emotions and a healthy mental status. Individuals exposed to trauma, unstable housing, or chronic stress may become unsafe and thus engage in maladaptive coping mechanisms, including substance abuse (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Alcohol or drugs may reduce anxiety for a period of time or create an illusion of control and safety and reinforce the addiction cycle (Hien et al., 2010).

Self-esteem, placed in the fourth level of Maslow's hierarchy, is an individual's feeling of worth, competence, and identity. Having low self-esteem has consistently been

identified as a risk factor for drug use, particularly among adolescents and young adults (Trzesniewski et al., 2006; Hosseinzadeh et al., 2019). Chemical use may be a resorting to chemicals to boost self-confidence or escape shame and failure, but ongoing use will ultimately increasingly erode one's sense of worth, leading to a habitual cycle of guilt, addiction, and isolation.

The need for meaning or purpose takes center stage at higher tiers of Maslow's pyramid. Absence of existential purpose and meaning translates into greater risk of addiction and relapse (McKay & Eack, 2021). On the other hand, pursuits that help individuals create meaning, such as spiritual advice, life planning, or engagement in purposeful social roles, are demonstrated to enhance recovery outcomes (Krentzman, 2013). Satisfying this higher-order requirement is central to sustained rehabilitation and psychological resilience.

RESEARCH METHOD

To ensure the accuracy and credibility of data collection, the researcher has obtained formal approval letters from the University of Duhok. These letters were submitted to the related institutions, including the Reformatory Directorate of Juveniles and Women in Duhok, the Directorate of Adult Reform, and the Directorate of Health in Duhok. These approvals enabled the researcher to access relevant records and interview individuals involved in substance use cases, ensuring ethical standards and institutional cooperation throughout the data collection process.

The current study adopts a mixed-methods design with both quantitative and qualitative approaches. Official documents reformatory directory related to substance use in Duhok were used to collect quantitative data to determine prevalence and trends. In parallel, qualitative data were also collected through semi-structured interviews among purposively sampled participants in these cases to elicit personal experiences and contextual explanations. This dual approach facilitates sufficient insight into the prevalence of substance-related court proceedings and underlying dynamics.

The target population of the present research is individuals who are involved in cases of drug abuse in Duhok city. These include juvenile and adult individuals who have been convicted or are already in reformatory centers. Participants were selected from these centers to complete a structured questionnaire to assess their psychological needs. This study was conducted for thirteen months, from May 2024 to June 2025. The initial three months were utilized to prepare and design the study: official sanctions and coordination. It was followed by three months of quantitative data collection in all the categories related to substance health centers or reformatory, and another three months for qualitative interviews and a self-report questionnaire on psychological needs. Data analysis, report writing, and study completion were pursued during the last four months.

Research among individuals involved in substance use poses ethics as a challenge due to stigma, sensitivity, and confidentiality. The researcher addressed the challenge by explicitly proposing to the Research Ethics Committee of the Directorate of Health (DoH) in Duhok. Permission was granted to ensure the study met all ethical requirements and

preserved participants' rights and privacy. All data were gathered and processed in compliance with research guidelines on ethics when dealing with vulnerable groups.

The study sample consisted of 50 questionnaires administered to two reformatory centers in Duhok. Forty questionnaires were given to the Adult Reformatory (male wing), and 10 to the Reformatory Directorate of Juveniles and Women. The 10 women who participated in the juvenile and women's section filled out the questionnaire. All participants who were included in the study were convicted of drug crimes, including personal use as well as selling illicit drugs. Questionnaires were developed to assess their psychological needs and experiences of drug use. Three questionnaires were excluded from the final analysis due to missing responses or unclear answers. The participants were randomly chosen by the reformatory management and the psychologist, without any interference by the researchers. The administration and psychologist were told to consider random selection from all cells and to consider if the participants could not read or fully understand the questionnaires, the psychologist must support him//her. Thus, the study had a total of 47 valid questionnaires.

A standard questionnaire has been developed to assess the psychological needs among convicted cases of substance use disorders. The tool was based on six broad psychological themes: Autonomy, Competence, Relatedness, Safety and Security, Self-Esteem, Stigma or Judgment, and Purpose and Meaning. There were 26 questions in total. Seven questions were open-ended to facilitate qualitative probing of personal opinion, but were not analyzed due to high levels of non-response. One of the questionnaires was a self-report rating scale, and participants were asked to score their overall psychological state from 1 to 10. The remaining 18 were closed with each of them offering three response alternatives: "Yes," "Sometimes," and "No." These were scored numerically in the following manner: "Yes" = 1 (need present), "Sometimes" = 2 (partially met), and "No" = 3 (need not present). Scoring was meant to assess the level of psychological needs being fulfilled. It allowed for a structured, but personalized, analysis of the psychological profile of each participant. Two professors in the Psychology Department of the University of Zakho reviewed the survey to ensure that, culturally and psychologically, the questions are acceptable and meet the study objectives. They judged the questions as clear, appropriate, and relevant to the study population. Their comments suggested minor adjustments, and the matching changes were altered before the instrument's finalization. The revised version was used in data collection with the research sample.

RESULTS

A. Psychological needs for substance use disorders

The stats study brought to light key insights about the mental needs of people with drug use issues in Duhok city's reformatory places. Table 1 sets out the main stats and shows the t-test results. It shows that the scores of those in the study were much lower than the standard scale mean (39.543 vs. 41.5, $t = -2.528$, $p < 0.05$). It tells us that the group faced significant gaps in meeting their mental needs in every area measured.

Table 1: Overall Descriptive Statistics and One-Sample T-Test

Sample Size	Arithmetic Mean	Standard Deviation	Theoretical Mean	Calculated T-Value	Tabulated T-Value	Significance Level
46	39.543	5.248	41.5	-2.528	2.021	Significant

Table 1 points out that the 46 people in the final study had very low levels of mental need meetings. It suggests significant gaps in mental well-being in the category. The t-value of -2.528 exceeded the key value of 2.021, proving it was an important finding at the 0.05 level.

We looked at gender gaps in psychological needs in Table 2 with t-tests. The study showed that while there were no significant gaps between males and females in most areas, the connection area did show a considerable gap ($t = 2.253$, $p < 0.05$). Males felt more connected to family, friends, and support systems than females. This point stands out as social ties are key in recovery.

Table 2: Gender Differences in Psychological Needs Domains

Domain	Gender	Sample Size	Mean Score	Standard Deviation	Calculated T-Value	Significance ($\alpha = 0.05$)
Autonomy	Male	38	5.211	1.473	1.517	Not Significant
	Female	8	4.375	1.061		
Competence	Male	38	4.737	1.465	0.178	Not Significant
	Female	8	4.625	2.264		
Relatedness	Male	38	8.105	2.037	2.253	**Significant**
	Female	8	6.375	1.598		
Safety & Security	Male	38	6.605	1.653	1.533	Not Significant
	Female	8	5.625	1.598		
Self-Esteem	Male	38	11.921	3.088	-0.603	Not Significant
	Female	8	12.625	2.504		
Purpose & Meaning	Male	38	3.632	1.403	1.698	Not Significant
	Female	8	2.750	0.886		
Total Score	Male	38	40.211	5.348	1.935	Not Significant
	Female	8	36.375	3.462		

Table 2 also shares that males consistently scored higher across most mental need areas, yet only the relationship area had a big gap. The study group had 38 males and eight females, showing who was in the reformatory studied. All other areas, like autonomy, competency, safety, self-esteem, and meaning, showed no significant gender gaps. Unfortunately, there were not more than eight females in the reformatory to increase the participants.

Table 3 shows a clear order of mental needs in this group. Self-worth was the highest concern (2.911), followed by safety (2.145), connection (1.951), life meaning (1.739), self-rule (1.688), and skill (1.572).

Table 3: Overall Domain Rankings and Statistics

Domain	Number of Items	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
Self-Esteem	4	554	2.911	1.403	97.4%	1

Safety & Security	3	296	2.145	0.905	71.5%	2
Relatedness	4	359	1.951	0.805	65.0%	3
Purpose & Meaning	2	160	1.739	0.786	58.0%	4
Autonomy	3	233	1.688	0.754	56.3%	5
Competence	3	217	1.572	0.749	52.4%	6
Total	**19**	**1819**	**2.018**	**0.917**	**67.3%**	-

Table 3 shows that the only domain to show a relative weight over 97% was self-esteem, primarily due to including a 10-point scale item assessing overall self-esteem. The lowest satisfaction levels were for competence, showing participants felt less effective and competent at solving their problems and learning new skills. The total mean was 2.018 with a relative weight of 67.3% which indicates the substance use involved having a high level of deficits in the psychological needs or their needs are not fulfilled enough.

Extensive analysis of the autonomy domain shown in Table 4 revealed specific patterns within this psychological need category. The most pronounced expression of autonomy was seen for controlling decisions regarding life (Item 3, mean = 1.500). In contrast, the highest expression of external control of decisions was reported in the case of participants (Item 1, mean = 1.935). Control of decisions regarding treatment and recovery was between these two extremes (Item 2, mean = 1.630).

Table 4: Autonomy Domain - Detailed Item Analysis

Item	Question	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
1	How often do you feel that others influence your decisions?	89	1.935	0.673	64.5%	1
2	Do you feel empowered to make choices about treatment and recovery?	75	1.630	0.817	54.3%	2
3	Do you feel that you have control over decisions in your life?	69	1.500	0.773	50.0%	3
Domain Total		**233**	**1.688**	**0.754**	**56.3%**	

Table 4 indicates that while participants maintained personal control, they tended to feel that factors beyond their control made their decisions. This pattern is consistent with the controlled prison environment and complex social pressures that individuals with substance use disorders typically endure. Competence domain analysis presented in Table 5 revealed that participants were most confident in coping with difficult emotions and triggers (Item 3, mean = 1.391), followed by their general capacity to cope with recovery challenges (Item 2, mean =

1.457). They were, however, less confident in reporting more recovery successes that had improved their confidence (Item 1, mean = 1.870).

Table 5: Competence Domain - Detailed Item Analysis

Item	Question	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
1	Have you experienced successes that made you confident?	86	1.870	0.991	62.3%	1
2	Do you feel capable of overcoming challenges in recovery?	67	1.457	0.615	48.6%	2
3	Do you have the skills to handle difficult emotions or triggers?	64	1.391	0.642	46.4%	3
Domain Total		**217**	**1.572**	**0.749**	**52.4%**	

Table 5 reveals that while participants were reasonably confident in their overall coping ability, they had limited specific success experiences that would reinforce their competence feelings. This finding identifies the necessity to include opportunities for mastery experiences in rehabilitation and treatment programs. The domain of relatedness, which was tested in Table 6, revealed interesting trends in social relationships and support networks. While participants acknowledged the value placed on strong support networks (Item 4, mean = 1.478), they reported moderate to high levels of feeling isolated from friends and family (Item 3, mean = 2.022). They also stated that others around them tended not to comprehend their difficulties (Items 1 and 2, with means = 2.152).

Table 6: Relatedness Domain - Detailed Item Analysis

Item	Question	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
1	Do people around you understand your struggles?	99	2.152	0.751	71.7%	1
2	Who do you feel comfortable talking to about substance use?	99	2.152	0.932	71.7%	1
3	How connected do you feel to family, friends, or support groups?	93	2.022	0.821	67.4%	2
4	How important is having a strong support system?	68	1.478	0.714	49.3%	3
Domain Total		**359**	**1.951**	**0.805**	**65.0%**	

Table 6 indicates a wide gap between perceived need for social support and experience of connection and understanding. This gap can be vast in the correctional environment, where usual social relations are severed and possibilities for meaningful connection are curtailed. Safety and security needs, examined in Table 7, indicated that participants had modest access to general essentials such as secure housing and job resources (Item 3, mean = 1.935).

However, they expressed greater concerns about specific safety issues related to their substance use and recovery (Item 2, mean = 2.217) and their current living

environment (Item 1, mean = 2.283).

Table 7: Safety & Security Domain - Detailed Item Analysis

Item	Question	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
1	Do you feel safe in your current living environment?	105	2.283	0.948	76.1%	1
2	Are there specific safety concerns related to substance use or recovery?	102	2.217	0.976	73.9%	2
3	Do you have access to stable housing, employment, and recovery essentials?	89	1.935	0.791	64.5%	3
Domain Total		**296**	**2.145**	**0.905**	**71.5%**	

Table 7 indicates that while basic needs were somewhat met, participants experienced significant concerns about their safety and security, particularly their recovery process. It may reflect both the inherent challenges of the correctional environment and ongoing worries about post-release circumstances.

The self-esteem domain in Table 8 revealed the most complex pattern of results since the domain contained, in addition to the standard 3-point scale items, one 10-point scale item. The respondents reported modest pride in recovery (Item 4, mean = 1.674) and being appreciated by others (Item 3, mean = 1.848). They indicated that they had experienced stigma due to their drug use (Item 2, mean = 2.043), while their overall self-esteem ratings on the 10-point scale were, on average, 6.478.

Table 8: Self-Esteem Domain - Detailed Item Analysis

Item	Question	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
1	Rate your overall self-esteem (1-10 scale)	298	6.478	3.275	74.0%	1
Domain Total		298	6.478	3.275	74.0%	

Item	Question	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
2	Have you experienced stigma due to substance use?	94	2.043	0.833	68.1%	2
3	Do you feel respected and valued by others?	85	1.848	0.751	61.6%	3
4	How often do you feel proud of your progress in recovery?	77	1.674	0.753	55.8%	4
Domain Total		**256**	**1.855**	**0.539.**	**100.4%**	

Table 8 reveals that while participants maintained moderate self-esteem overall, they clearly recognized the impact of stigma and struggled with feeling valued by others. The high variability in self-esteem scores (standard deviation = 3.275) suggests considerable individual differences in this domain.

Finally, the purpose and meaning domain analysis in Table 9 showed that the

respondents perceived the importance of work and meaningful activity in their recovery (Item 2, mean = 1.565) but had moderate levels of overall direction and purpose in life (Item 1, mean = 1.913).

Table 9: Purpose & Meaning Domain - Detailed Item Analysis

Item	Question	Total Responses	Mean	Standard Deviation	Relative Weight	Rank
1	Do you feel that your life has purpose and direction?	88	1.913	0.747	63.8%	1
2	How vital are meaningful activities/work in recovery?	72	1.565	0.825	52.2%	2
Domain Total		**160**	**1.739**	**0.786**	**58.0%**	

Table 9 indicates that while participants were aware of the value of purposeful engagement, they had modest deficits in the overall sense of direction and purpose in life. The finding suggests room for intervention to help individuals discover and strive for meaningful goals and activities.

B. Quantity of Substance Use Disorders.

Substance abuse disorder in Duhok has reportedly been on the increase in recent years among different sections of society. Male adult convictions, female and juvenile drug offenses, and increasing cases from both public and private psychiatric hospitals can measure it. The available data reflect the prevalence of the disorder and the escalating burden on the region's legal and health facilities.

I. Statistics of people who were convicted or detained for Drugs:

Table 10: statistics of Male Adult Convictions for Substance Users or Dealing in Duhok city reformatory.

	2018	2019	2020	2021	2022	2023	2024 until July 1	Total
Substance trafficking and users	3	22	10	22	43	59	27	186
Substance users	37	163	186	256	451	323	228	1644
Total	40	185	196	278	494	382	255	1830

Table 10 provides an overview of convictions among adult males related to drug use and dealing from 2018 to mid-2024. A total of 1,830 individuals were convicted during this period, with the vast majority (1,644 cases) attributed solely to drug users, while 186 cases involved both use and trafficking. The table shows a consistent upward trend in convictions, especially from 2020 to 2022. The number of use-only convictions rose steadily, increasing from 186 in 2020 to a peak of 451 in 2022, then gradually declining to 228 by mid-2024. This rise could be associated with increased substance availability, economic stress, or improved law enforcement measures.

Though fewer in raw numbers, use and traffic convictions grew, from only 3 in

2018 to 59 in 2023. Rising numbers of these cases may either be indicative of increasing involvement with distribution channels or more vigorous prosecution of those involved in more complex drug-using activity. Specifically, for 2024, overall convictions (255) remained high with half the year now gone, which shows that the trend is still consistent. On the whole, the statistics raise a caution about drug use as the overall issue among adult males. Still, the rise in convictions related to dealing reflects an even deeper problem concerning the supply chain and organized selling within the community.

Table 11: Statistics of women reformatory who are convicted or detained for Substance Use or trafficking in Duhok city.

Age Group	2020		2021		2022		2023		3/6/2024		Total
	Use	Traffics	Use	Traffics	Use	Traffics	Use	Traffics	Use	Traffics	
15–17	0	3	0	0	1	1	3	1	0	0	9
18+	0	10	25	7	25	4	28	13	16	1	129
Total	0	13	25	7	26	5	31	14	16	1	138

Table 11 presents the cumulative cases of women's drug usage and women's drug trafficking from 2020 to the Middle of 2024. The figures show that the majority of the cases belonged to the 18+ age group, which had 25 drug abuse cases in 2021, 25 in 2022, and another increase to 28 in 2023. Remarkably, as early as mid-2024, the figure had reached 16, showing chances of topping previous years by the end of the year. Trafficking among this age bracket also rose, peaking at 13 in 2023. Contrast this with the 15–17 age bracket, which had only 3-4 use and trafficking each year. These figures illustrate a clear risk by age, in which adult women not only use the drug more often but also become increasingly engaged with selling the drug. This transformation signals the need for prevention strategies for adult women and behavioral and structural risk factors.

Tale 12: Statistics of Adolescent Juveniles who are Convicted for Substance Use or Dealing in Duhok City

Age Group	2020		2021		2022		2023		3/6/2024		Total
	Use	Traffics	Use	Traffics	Use	Traffics	Use	Traffics	Use	Traffics	
11–14	0	0	1	0	1	0	2	0	0	0	**4**
15–17	0	14	4	30	14	14	13	17	8	4	**118**
Total	**0**	**14**	**5**	**30**	**15**	**14**	**15**	**17**	**8**	**4**	**122**

Table 12 presents drug offenses for juvenile males, showing the imbalance between types of offenses and age groups. The 15–17 age group showed significantly higher rates of trafficking when compared with use, particularly in 2021, with 30 trafficking cases against only four use of drug cases. This imbalance continued in 2023, with 17 trafficking cases against 13 for use. Use increased gradually over time and reached a high of 8 instances in mid-2024. Contrarily, the age group of 11–14 years had minimal involvement, with a few sporadic cases of use but none in trafficking. The

occurrence of trafficking among adolescent boys signals either exploitation or recruitment by peers into distribution networks. The findings point to the necessity for early intervention with mid-adolescents, especially via school-based and community-oriented prevention programs.

II. Statistics of people who sought treatment for addiction to alcohol or substances:

Table 13: Statistics of people who visit Duhok general hospital (Azadi) for addiction issues

Year	Drug			Alcoholic			Age Range	Gender
	Inpatients	outpatients	total	Inpatients	outpatients	total		
2018	57	50	**117**	6	2	**8**	14–46	Male
2019	95	65	**160**	3	5	**8**	15–78	Male - 6 Female
2022	65	45	**110**	2	6	**8**	22–54	Male
2023	46	50	**96**	2	5	**7**	23–56	Male
2024 *(until 1/7)*	10	10	**20**	4	4	**8**	20–45	Male

Table 13 shows the people treated for drug and alcohol addiction in Azadi Teaching Hospital from 2018 to 2024. Drug addiction cases were the highest in 2019, reaching 160 patients (95 inpatients and 65 outpatients). This number decreased to 110 in 2022 and 96 in 2023. In the first semester of 2024, only 20 drug addiction cases were registered, which can reflect a real decrease or underreporting for different reasons. Alcohol-related cases were few and constant, fluctuating between 7 and 8 cases. Males constituted the majority of the cases, with females being reported in 2019 only. The trend has been a decline in drug cases reported from the hospitals, which may be the result of a change in health-seeking behavior, availability of private sector options, or underutilization of the public services due to stigma.

Table 14: Statistics of people who visited private psychiatrist clinics seeking addiction treatments (yearly average) in Duhok

Psychiatrist	Number of Patients
Clinic A - Dr. A.T	336
Clinic B - Dr. Y.Y	180
Clinic C - Dr. N.A	192
Clinic D - Dr. A.R	190
Clinic E - Dr. P.T	144
Total	1042

Table 14 presents the number of drug addiction cases treated in private psychiatric clinics in Duhok. The five named psychiatrists treated 1,042 patients, with caseloads

ranging from 144 to 336. These numbers are more than hospital-reported in recent years, indicating that a rising percentage of the population is undergoing private care. Expectations of more confidentiality, faster access to services, or higher trust in private providers can explain it. The high number of cases also reflects the high and steady demand for addiction treatment services in the region. As they increase their role, private clinics must be integrated into national treatment systems, with policy support, data monitoring, and quality assurance to enhance consistency and accessibility.

DISCUSSION

The findings of our study can provide crucial insights into both the psychological needs and the motives of substance use disorders within Duhok city's correctional and healthcare systems. The convergence of psychological needs assessment data with quantitative trend analysis reveals a complex public health crisis that demands comprehensive intervention strategies.

The statistically significant deficit in overall psychological needs fulfillment among incarcerated individuals (39.543 vs. 41.5, $t = -2.528$, $p < 0.05$) underscores the profound psychological distress experienced by this population. This finding extends beyond previous Western research by documenting a similar pattern within the Middle Eastern correctional context, where cultural, social, and political factors create unique challenges for psychological well-being. The emergence of self-esteem as the most severely affected domain represents a critical finding with far-reaching implications for treatment design. The magnitude of self-esteem deficits among participants suggests that traditional punitive approaches to substance use may inadvertently exacerbate the psychological factors that initially contributed to addictive behaviors.

In the Kurdistan Region context, where honor and social standing carry particular cultural significance, the intersection of substance use, incarceration, and damaged self-esteem likely creates compounding cycles of psychological distress. The detailed analysis reveals that while participants maintained moderate overall self-esteem ratings, they clearly recognized experiencing stigma and struggled with feeling valued by others. This pattern suggests that interventions should focus not only on individual self-perception but also on addressing community-level stigma and creating opportunities for social reintegration and valued contribution. Similar to a study that was conducted in Turkey, which found that people with substance use disorders exhibited a moderate range of self-esteem, but they faced significant social stigma, leading to difficulties in community reintegration (Yildiz et al., 2016).

Competence emerged as the least affected domain, offering important intervention design insights. Participants expressed confidence in their basic coping abilities, particularly in handling difficult emotions and triggers. However, they reported fewer concrete success experiences that would reinforce their sense of competence. It suggests that structured rehabilitation programs providing graduated challenges and meaningful achievements could build upon existing strengths while addressing competence deficits. It is similar to a study conducted in Eastern Turkey, which found that while individuals

with substance use disorders retained a level of self-efficacy in managing emotions, limited opportunities for real-world achievements hindered the reinforcement of their competence, highlighting the importance of structured, skill-building interventions (Yildiz et al., 2016).

The significant gender difference in relatedness reveals substantial disparities that demand targeted intervention approaches. The findings that male participants reported stronger social connections than females challenge common assumptions about gender and social support in the Middle Eastern contexts. Female participants' lower scores may reflect heightened stigma faced by women with substance use disorders in traditional societies, higher rates of relationship trauma, and greater social isolation following incarceration. The increasing trend in female convictions, particularly among adults, suggests a growing need for gender-specific programming despite lower absolute numbers.

The quantitative analysis reveals concerning escalation patterns that demand immediate policy attention. Drug users and traffickers have nearly 12 times the increase in adult male convictions between 2018 and 2022, which represents one of the most dramatic increases in substance-related legal problems documented in recent Middle Eastern literature. A study made in Iraq by Muzil et al. (2023) found that judicial cases more than doubled between 2016 and 2021, rising from 6,393 to 14,391. That treatment-seeking also increased, though female representation remained disproportionately low. While some decline occurred in 2023-2024, persistent high numbers indicate an endemic rather than epidemic pattern. The demographic distribution of convictions reveals age-specific vulnerabilities requiring tailored prevention strategies. Among juveniles, predominance of trafficking over user charges suggests systematic recruitment of adolescents into distribution networks, highlighting the need for educational and economic alternatives that address underlying vulnerabilities to recruitment.

The data from Azadi Teaching Hospital between 2018 and mid-2024 shows a declining trend in the number of people seeking treatment for drug addiction, dropping from a peak of 160 cases in 2019 to just 20 by mid-2024. Alcohol-related cases remained consistently low, with 7 to 8 cases per year. Males are making up the majority of those who sought treatment, with only a small number of female patients recorded, indicating possible stigma or barriers preventing women from accessing public treatment services. This downward trend may reflect not a decrease in addiction, but rather underreporting or avoidance of public facilities due to stigma or lack of trust.

In contrast, private psychiatric clinics treated over 1,000 patients yearly, surpassing the public sector figures. It suggests a growing preference for private care, likely due to greater confidentiality, shorter waiting times, and perceived better quality of service. The shift highlights the need to integrate private clinics into national addiction treatment strategies to ensure consistent care and data reporting. Overall, the findings indicate that the need for treatment remains high, and many individuals may be seeking help outside the public system or not at all using the public system, which can underline the importance of reducing stigma and expanding accessible, culturally sensitive services.

The findings must be interpreted within the Kurdistan Region's cultural and political context. Many years of conflict, economic uncertainty, and social disruption have created the conditions where substance use serves as a coping mechanism for dealing with trauma and hopelessness. The traditional cultural emphasis on family honor and community standing in Kurdish culture may amplify the psychological impact of substance use problems, particularly regarding self-esteem and social relatedness. The convergence of psychological and epidemiological findings suggests that treatment programs must address profound self-esteem deficits through trauma-informed approaches, cognitive-behavioral interventions targeting negative self-perception, and structured opportunities for meaningful achievement and social contribution.

CONCLUSION

This comprehensive study reveals a complex intersection of individual psychological distress and systemic healthcare challenges within the substance use disorder landscape of Duhok city. The convergence in psychological assessment data and epidemiological trends provides unprecedented insight into both the human cost and societal scope of substance use problems in the Kurdistan Region. The profound psychological needs deficits identified among incarcerated individuals, particularly in self-esteem and social connectedness, underscore the inadequacy of purely punitive approaches to substance use disorders.

There is a low level of psychological needs in substance use individuals, and the data suggest that self-esteem, as the most severely affected psychological domain, has critical implications for treatment design. Traditional addiction programming that didn't address issues of self-esteem and psychological needs may fail to achieve long-term recovery outcomes. Significant gender differences were observed, particularly in social relatedness, as males are more connected to their relatives than women. Highlight the necessity for tailored interventions that recognize the unique challenges different populations face within the correctional system.

Data show that 12 number of people convicted of drug offenses is increasing in adult male cases between 2018 and 2022, with emerging patterns of juvenile trafficking and increasing female involvement, indicating a rapidly evolving crisis that extends beyond individual addiction to encompass broader social and economic vulnerabilities. The transformation in the healthcare utilization patterns, with the private clinics handling five times more cases from public hospitals, reflects the changing patient preferences and systemic deficiencies in public sector services.

These findings collectively highlight the urgent need for a comprehensive reform spanning individual treatment approaches, healthcare system organization, and broader social policy or awareness. Effective interventions should simultaneously address psychological vulnerabilities by evidence-based therapeutic approaches that fit those categories, considering the adaptation to this culture, while tackling systemic issues, including stigma reduction, healthcare accessibility improvement, and social reintegration support. The cultural context of the Kurdistan Region, emphasizing honor

and family standing, also requires culturally adapted interventions to work within existing social structures while challenging stigmatizing attitudes.

This study establishes a first stone as evidence-based policy development and intervention design that can address the complex interplay between the individual psychological needs and broader social determinants, accessibility system for substance use disorders. The findings underscore that effective responses to substance use problems require coordinated efforts in different departments, spanning healthcare, criminal justice, education, and social services sectors, all informed by a deep understanding of psychological vulnerabilities and cultural contexts.

REFERENCES

Bahji, A. (2024). Navigating the complex intersection of substance use and psychiatric disorders: A comprehensive review. *Journal of Clinical Medicine*, 13(4), 999.

Al-Sudani, M. S. (2023). Establishment of rehabilitation facilities in Iraqi provinces. *Iraqi Government Press Release*, July 2023.

Bajbouj, M., et al. (2022). Psychotherapy in the Kurdistan region of Iraq: Preferences and expectations of the Kurdish host community, internally displaced, and Syrian refugee community. *International Journal of Social Psychiatry*, 68(2), 346-353.

Chen, B., et al. (2015). Basic psychological needs include satisfaction, frustration, and strength across four cultures. *Motivation and Emotion*, 39(2), 216-236.

Chirkov, V., et al. (2003). Differentiating autonomy from individualism and independence: A self-determination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality and Social Psychology*, 84(1), 97-110.

Deci, E. L., & Ryan, R. M. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. Guilford Publications.

Dellazizzo, L., et al. (2023). Meta-review on the efficacy of psychological therapies for the treatment of substance use disorders. *Psychiatry Research*, 326, 115318.

Fazel, S., et al. (2016). Substance use disorders in prisoners: An updated systematic review and meta-regression analysis in recently incarcerated men and women. *Addiction*, 111(10), 1725-1739.

Fortier, M. S., et al. (2009). Self-determination and exercise during breast cancer treatment: A pilot study. *Psychology of Sport and Exercise*, 10(5), 540-545.

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology*, 81(2), 143-154.

Hatoum, A. S., et al. (2023). Multivariate genome-wide association meta-analysis of over 1 million subjects identifies loci underlying multiple substance use disorders. *Nature Mental Health*, 1(3), 210-223.

Hien, D. A., Cohen, L. R., Miele, G. M., Litt, L. C., & Capstick, C. (2010). Promising treatments for women with comorbid PTSD and substance use disorders. American Journal of Psychiatry, 161(8), 1426–1432. https://doi.org/10.1176/appi.ajp.161.8.1426

Hosseinzadeh, M. H., Behnam, B., & Ahmadi, N. (2019). The relationship between self-esteem and substance abuse among university students. Journal of Substance Use, 24(5), 479–483. https://doi.org/10.1080/14659891.2019.1614276

Krentzman, A. R. (2013). Review of the application of positive psychology to substance use, addiction, and recovery research. *Psychology of Addictive Behaviors*, *27*(1), 151–165. https://doi.org/10.1037/a0029897

Langeveld, H., & Melhus, H. (2004). Are psychiatric disorders identified and treated by in-prison health services? *Tidsskrift for den Norske Laegeforening*, 124(15), 2094-2097.

Machado, N., et al. (2024). The relationship of social contacts with prisoners' mental health: A systematic review. *International Journal of Prisoner Health*, 20(2), 123-145.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, *50*(4), 370–396. https://doi.org/10.1037/h0054346

McKay, M., & Eack, S. M. (2021). Purpose in life as a protective factor against substance use disorder. *Journal of Substance Abuse Treatment*, *127*, 108371. https://doi.org/10.1016/j.jsat.2021.108371

Mullen, P. R., et al. (2011). Role of causality orientations in predicting alcohol use and abstinence self-efficacy. *Journal of Addictions & Offender Counseling*, 32(1), 16-28.

Muzil, J., Abdulwahid, D. A., Abed, A., & Kammad, Z. A. (2023). Substance abuse in Iraq: quantifying the picture. J Popul Ther Clin Pharmacol, 30(12), 302-313.

Neighbors, C., et al. (2003). Self-determination and the consequences of increased responsibility for drinking: Self-monitoring, self-management, and DUI recidivism. *Addictive Behaviors*, 28(5), 947-963.

Ntoumanis, N., et al. (2020). A meta-analysis of self-determination theory-informed intervention studies in the health domain: Effects on motivation, health behavior, physical, and psychological health. *Health Psychology Review*, 15(2), 214-244.

Patrick, H., et al. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology*, 92(3), 434-457.

Patrick, H., et al. (2011). The influence of autonomy-supportive teaching on students' self-regulation and energy expenditure. *Journal of Educational Psychology*, 103(4), 855-866.

Patrick, H., & Williams, G. C. (2012). Self-determination theory: Its application to health behavior and complementarity with motivational interviewing. *International Journal of Behavioral Nutrition and Physical Activity*, 9(1), 18.

Plant, R. W., & Ryan, R. M. (2013). Intrinsic motivation and the effects of self-consciousness, self-awareness, and ego-involvement: An investigation of internally controlling styles. *Journal of Personality*, 53(3), 435-449.

Prison Policy Initiative. (2024). Addicted to punishment: Jails and prisons punish drug use far more than they treat it. Retrieved from https://www.prisonpolicy.org/blog/2024/01/30/punishing-drug-use/

Russell, M. A., & Williams, G. C. (2023). Assessing self-determined motivation for drinking alcohol via the Comprehensive Relative Autonomy Index for Drinking. *Addiction Research & Theory*, 31(4), 245-258.

Russell, M. A., et al. (2024). The factors affecting substance use and the most effective mental health interventions in adolescents and young adults. *Psychoactives*, 3(4), 28.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.

Ryan, R. M., et al. (2008). Facilitating health behaviour change and its maintenance: Interventions based on self-determination theory. *European Health Psychologist*, 10(1), 2-5.

Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement, and dropout. *Addictive Behaviors*, 20(3), 279-297.

SAMHSA. (2014). *Trauma-informed care in behavioral health services* (Treatment Improvement Protocol [TIP] Series 57). U.S. Department of Health and Human Services. https://store.samhsa.gov/product/TIP-57-Trauma-Informed-Care-in-Behavioral-Health-Services/SMA14-4816

Sharma, A., & Smith, J. L. (2011). Self-determination theory and potential applications to alcohol and drug abuse behaviors. *Journal of Applied Psychology*, 96(4), 787-801.

Sheeran, P., et al. (2021). Health behavior change: Moving from observation to intervention. *Annual Review of Psychology*, 72, 573-599.

Smith, D. C. (2011). Self-determination theory as a framework for understanding substance abuse treatment motivation. *Clinical Psychology Review*, 31(8), 1292-1301.

Stewart, D., et al. (2024). Drug use and perceived treatment need among newly sentenced prisoners in England and Wales. *Addiction*, 119(5), 243-247.

Subodh, B. N., et al. (2018). Psychosocial interventions in patients with dual diagnosis. *Indian Journal of Psychiatry*, 60(4), S494-S500.

Sweet, S. N., et al. (2012). Understanding physical activity in adults with type 2 diabetes after completing an exercise intervention trial: A mediation model of self-efficacy and autonomous motivation. *Psychology, Health & Medicine*, 17(6), 706-717.

Trzesniewski, K. H., Donnellan, M. B., Moffitt, T. E., Robins, R. W., Poulton, R., & Caspi, A. (2006). Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Developmental Psychology*, *42*(2), 381–390. https://doi.org/10.1037/0012-1649.42.2.381

UNODC. (2024). Drug trafficking dynamics across Iraq and the Middle East. United Nations Office on Drugs and Crime Regional Report.

Volkow, N. D. (2020). Personalizing the treatment of substance use disorders. *American Journal of Psychiatry*, 177(2), 113-116.

Wild, T. C., et al. (2011). Autonomy and controlled motivation and addiction treatment. *Drug and Alcohol Dependence*, 113(2-3), 207-212.

Williams, G. C., et al. (2006). Motivational predictors of weight loss and weight-loss maintenance. *Journal of Personality and Social Psychology*, 70(1), 115-126.

Williams, G. C., et al. (2023). Self-determination theory interventions in health contexts: Meta-analytic review and future directions. *Health Psychology*, 42(3), 178-192.