Characteristics and management of patients with substance use disorders referred to a consultation-liaison psychiatry service in Lebanon

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Abstract

Background This study explores the characteristics and management of individuals with substance use disorders (SUDs) who were referred to the consultation-liaison psychiatry (CLP) service in a tertiary care center in Lebanon. As part of the Consultation-Liaison at the American University of Beirut (CLAUB) analysis, we conducted a retrospective record review of patients referred to our CLP service between February 2019 and May 2020. We assessed differences between SUD and non-SUD consults using chi-square analysis, Fisher's exact test, or Mann–Whitney U test, as appropriate.

Results Of 1475 patients, 278 (18.8%) received a diagnosis of SUD. They were mostly males (73.7%) with an average age of 38.8 years. The most used substances were alcohol (60%) and cannabis (28.4%). Compared to non-SUD consults, patients with SUDs were more likely to be males (odds ratio OR = 3.18, $p < 0.001$) and to get intubated during admission (OR = 1.81, $p = 0.048$). Predictors of intensive care unit admission in patients with alcohol use disorder included pulmonary or endocrinological disease, benzodiazepine use disorder, and days until CLP referral.

Conclusions The results of this study highlight the high prevalence of alcohol use among individuals with SUD referred to the CLP service. Additionally, they underscore the limited treatment avenues available in this part of the world. The institution of a comprehensive CLP service is crucial to address the unmet needs of patients with SUDs who present to a general hospital setting.

Keywords Addiction, Substance use, Alcohol, Consultation-liaison, Psychiatry, Lebanon

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Background

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR), substance use disorders (SUDs) denote the use of one or more substances causing substantial distress or impairment to the individual [1]. The 2020 National Survey on Drug Use and Health report showed that about 19.3 million people aged 18 or older had a SUD in the past year. The burden of disease attributable to alcohol and substance use varies worldwide and is mostly due to the effects of SUDs on other health outcomes [2]. In 2016, a systematic analysis for

the Global Burden of Disease Study showed that 99.2 and 31.8 million disability-adjusted life years were linked to alcohol and drug use, respectively [3].

Taking care of patients with SUDs is a demanding task for the health system in general, and the consultation-liaison psychiatry (CLP) and Emergency Department (ED) services in particular. A retrospective study at an Australian tertiary public hospital revealed SUDs as the most common diagnosis provided by the CLP service. Patients with SUDs also had the highest rates of prescribed psychoactive medications, disadvantaged housing, and premature discharge against medical advice [4]. Another study of CLP referrals reported noticeable comorbidity of SUDs with depression (50.6%), anxiety (11.4%), and delirium (10.9%) [5]. Patients with SUDs also had a two to three-fold increased risk for gastrointestinal problems and a three times greater likelihood of comorbid liver dysfunction [5]. Individuals using alcohol or mood-altering substances are also frequently encountered in EDs, at rates disproportionately greater than their population prevalence [6]. Using 2016–2017 ED data from the National Hospital Ambulatory Medical Care Survey, Zhang et al. showed that 11.1% of all presenting ED patients had a diagnosis of SUD. They were significantly more likely to present again within 72 h and to get admitted to the intensive care unit [7].

SUDs are a growing public health concern in the Arab world. In Egypt, the lifetime prevalence of any substance use was found to vary between 7.25 and 14.5% [8]. In Lebanon, the 12-month prevalence of alcohol use was found to be 6.2% [9]. In a CLP service at Rashid Hospital Dubai, 11.5% of referrals were for a history of addiction [10]. A similar study at Sultan Qaboos University Hospital Oman diagnosed SUDs in 8.7% of CLP referrals [11]. A study in Qatar showed that 2.26% (1495 cases) of all presentations to the ED were related to alcohol and substance use. Yet, less than 1% were referred to psychiatry and most were not provided with meaningful interventions [12]. Despite these noticeable numbers, patients with SUDs in the Arab world tend to receive insufficient psychiatric care due to limited resources, sociocultural factors, and stigma towards mental illness [13, 14].

Lebanon, a small middle-income nation in western Asia, stands out in the Arab world as a country crippled by decades of warfare, the recent Beirut port explosion, and an unprecedented economic collapse. Nationwide statistics about SUDs in Lebanon remain limited [15]. A nationally representative survey conducted as part of the WHO World Mental Health Survey Initiative in 2006 revealed that 2.2% of respondents had a DSM-IV diagnosis of SUDs [16]. Lebanese individuals with SUDs were also noted to score below average on physical and mental health quality of life scores [17].

To our knowledge, no previous study in Lebanon assessed the characteristics, management, and outcomes of patients with SUDs seen and managed by a CLP service. In this context, we conducted a retrospective descriptive analysis of data from patients with SUDs who were referred to the CLP service at the American University of Beirut Medical Center (AUBMC), a tertiary care center in Beirut.

Methods

Study design and population

This study was part of the Consultation-Liaison at the American University of Beirut (CLAUB) analysis, a single-center retrospective record review of all adult patients admitted to AUBMC and referred to the CLP service between February 2019 and May 2020 [18]. It was approved by the Institutional Review Board of the institution (BIO-2020–0180).

The CLAUB analysis included 1475 patients older than 16 years of age: 937 patients (63.6%) assessed on medical and surgical floors and 538 (36.4%) patients evaluated in the ED. Our CLP team consisted of an attending psychiatrist, psychiatry residents, and medical students. Each referred patient received a comprehensive consultation diagnostic interview by the team members. For the sake of this study, we only included referrals with a diagnosis of SUD, based on the DSM-5 criteria.

Data collection

From the total sample of consults, 278 patients (18.8%) received a diagnosis of SUD and were analyzed as follows. We retrieved and collected data from each patient's electronic medical records available through EPIC Systems at AUBMC. Our extraction tool was self-developed and included the following study variables: patient demographics (age, gender, marital status, and employment status), pertinent medical information (past medical history, past psychiatric history, and past psychiatric medications), type of consult, reason for presentation, reason for psychiatry consultation, substance-use related information (number and duration of substance use, type of substance with identified problematic use and a DSM-5 diagnosis of SUD, past complications associated with use such as withdrawal seizures, delirium tremens, and substance-related medical complications, and receipt and types of previous interventions), pharmacological recommendations (including medications for management of withdrawal, medications for management of cravings, antidepressants, antipsychotics, mood stabilizers, and vitamins), nonpharmacological recommendations (application of withdrawal assessment scales and referral to psychotherapy), and outcome of hospitalization (length of hospital stay, intensive care unit admission,

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and intubation). To test the inter-rater reliability of our extraction tool, initially, four authors (SEH, GK, MC, and NI) independently extracted data for the same five patients and entered it into a standardized sheet that included all the variables. A first meeting was held to compare the extracted data and any disagreement was resolved after a discussion with another author (MB). The same four authors independently extracted data for five other patients and then held an additional meeting to compare and align results.

Statistical analysis

We summed descriptive statistics using numbers and percentages for nominal variables and mean and standard deviations for numerical variables. We examined differences between SUD consults and all other consults with respect to demographic and psychiatric variables. We used chi-square analysis or Fisher's exact test to test the difference when the variables were both categorical. We used Fisher's exact test instead of chi-square when the number in any of the cross-tabulation cells was less than 5 [19]. We used the Mann–Whitney U test to examine differences when one of the variables was continuous. We employed the Mann–Whitney U test rather than the independent samples t test because preliminary inspection showed us that continuous variables were not normally distributed, as assessed by visual inspection of their histograms [20]. We repeated the same analyses with a specific focus on alcohol use disorder and admission to the intensive care unit. All data analysis was conducted on SPSS version 27.0.

Results

A total of 278 patients with a diagnosis of SUD were included in the analysis (Table 1). The average age was 38.8 years. Most patients were males (73.7%), single (52.1%), and unemployed (50%). The majority of CLP consults (75.2%) were received from the ED. The most common reasons for the consultation were to assess for intoxication (23.7%), withdrawal (23.7%), and suicidality (19.8%). Most patients had a pertinent past psychiatric history (68%) and received medications at a point in their life (64.4%). Following CLP assessment, 65.1% of patients reported using one substance only. The most common SUDs were alcohol (60%), followed by cannabis (28.4%), and benzodiazepine (20.5%) use disorders.

The majority of patients (71.2%) never sought treatment for their SUD, despite an average duration of use of 11 years. Of those who received past interventions, only 19.1% underwent medically assisted withdrawal and 14.7% attended residential treatment. CLP management interventions included medication prescription, mainly medications for withdrawal and/or craving (41%) (i.e.,

acamprosate, benzodiazepines, buprenorphine, disulfiram, gabapentin, and naltrexone). Other commonly prescribed medications were second-generation antipsychotics (27.3%) and selective serotonin reuptake inhibitors (22%). Application of objective scales for assessment of withdrawal was done by the primary treating team in only 34.9% of cases. More information about the characteristics and management of patients is presented in Table 1.

Compared to non-SUD consults, patients diagnosed with SUDs were more likely to be males ($\chi^2 = 63.68$, df = 1, $p < 0.001$), with an odds ratio (OR) of 3.18 (95% CI 2.35, 4.20). Additionally, they were more likely to get intubated during admission ($\chi^2 = 3.89$, df = 1, $p = 0.048$), with an OR of 1.81 (95% CI 0.99, 3.28). They were also more likely to be prescribed a benzodiazepine ($\chi^2 = 16.39$, df = 1, $p < 0.001$) or mood stabilizer ($\chi^2 = 6.53$, df = 1, $p = 0.011$). Patients prescribed opioids for medical purposes did not have an increased risk of being diagnosed with a SUD when compared to patients who were not prescribed opioids ($\chi^2 = 0.104$, df = 1, $p = 0.747$).

When looking at patients with a primary diagnosis of alcohol use disorder ($n = 166$) (Table 2), the average age was 43 years and most were males (74.7%). Of floor consults (32.5%), the average day of hospital stay since admission before CLP referral was 1.88 days, while the mean duration of hospital stay was 15.27 days. Almost a third (37.3%) of patients had a comorbid SUD, most commonly stimulant (18.1%) and benzodiazepine (15.1%) use disorders. Many had comorbid anxiety (13.8%) or depressive (13.8%) disorder, and 18% reported suicidality. One-quarter (26.5%) had developed a medical condition associated with alcohol use at the time of the presentation, most commonly liver injury (9.6%). Another one-quarter (23.5%) had a history of alcohol withdrawal symptoms, including withdrawal seizures (9%) and delirium tremens (5.4%). More than half of patients (60.2%) never sought past treatment for their alcohol use. In terms of CLP management, about half (52.9%) received benzodiazepines for the management of withdrawal symptoms, most commonly lorazepam (37.3%). Thiamine (45.8%) and folic acid (3.6%) were not very commonly prescribed. Medications for alcohol use disorder or cravings were rarely initiated. Among those who received benzodiazepines for medically assisted withdrawal, a fixed-dose regimen was the most common (21.9%). The Clinical Institute Withdrawal Assessment Alcohol Scale was applied in 47% of cases. 19.2% and 7.8% of patients required intensive care unit admission and intubation, respectively. More information about the characteristics and management of patients with alcohol use disorder is presented in Table 2. Significant predictors of intensive care unit admission included comorbid pulmonary

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Table 1 Demographics, characteristics, and management of patients with substance use disorders seen by the CLP service

Characteristics		Number (percentage)
Age (mean ± standard deviation)		38.8 ± 18.55
Gender	Male	205 (73.7%)
	Female	73 (26.3%)
Marital status	Single	145 (52.1%)
	Married	86 (30.9%)
	Divorced/Separated	21 (7.6%)
	Widowed	4 (1.4%)
Employment status	Employed	80 (28.8%)
	Unemployed	139 (50%)
Consultation type	Emergency consult	209 (75.2%)
	Floor consult	69 (24.8%)
Reason for presentation	Psychiatric	93 (33.5%)
	Neurological (stroke, seizure)	21 (7.6%)
	Gastrointestinal (bleed, obstruction)	16 (5.8%)
	Cardiac (congestive heart failure, myocardial infarct)	14 (5%)
	Surgical	9 (3.3%)
	Infectious (urinary tract infection, pneumonia, meningitis)	9 (3.2%)
	Pulmonary (chronic pulmonary disease)	8 (2.9%)
	Nephrological (acute kidney injury, dialysis)	1 (0.4%)
	Oncological (cancer relapse and treatment)	1 (0.4%)
Reason for a psychiatry consult	Intoxication	66 (23.7%)
	Withdrawal	66 (23.7%)
	Suicidality	55 (19.8%)
	Anxiety	31 (11.2%)
	Agitation	21 (7.6%)
	Psychosis	10 (3.6%)
	Others	29 (10.4%)
Past medical history (y/n)	Cardiac history	72 (25.9%)
	Neurological history	53 (19.1%)
	Endocrinological history	49 (17.6%)
	Pulmonary history	31 (11.2%)
	Nephrological history	21 (7.6%)
	Gastrointestinal history	19 (6.8%)
	Oncological history	5 (1.8%)
Past psychiatric history (y/n)		189 (68%)
Past psychiatric medications (y/n)		179 (64.4%)
Number of substances used	One	166 (65.1%)
	Multiple	89 (34.9%)
DSM-5 diagnosis	Alcohol use disorder	166 (60%)
	Cannabis use disorder	79 (28.4%)
	Sedative, hypnotic, or anxiolytic (benzodiazepine) use disorder	57 (20.5%)
	Opioid use disorder	48 (17.3%)
	Stimulant (cocaine) use disorder	43 (15.5%)
	Other substance use disorders	53 (19.1%)
Duration of substance use in years (mean ± standard deviation)		11 ± 12.58
Previous intervention (y/n)		80 (28.8%)
Type of intervention (y/n)	Outpatient clinic follow-up	63 (22.6%)
	Inpatient medically assisted withdrawal	53 (19.1%)
	Residential treatment (inpatient or intensive outpatient)	41 (14.7%)

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Table 1 (continued)

Characteristics		Number (percentage)
Length of hospital stay (if applicable) (mean ± standard deviation)		14.19 ± 17.97
Pharmacological recommendation (y/n)	Medications for withdrawal or cravings	114 (41%)
	Antipsychotic second generation	76 (27.3%)
	Selective serotonin re-uptake inhibitor	61 (22%)
	Mood stabilizer	25 (9%)
	Antipsychotic first generation	15 (5.4%)
	Serotonin and norepinephrine reuptake inhibitor	12 (4.3%)
	Tricyclic antidepressant	11 (3.9%)
	Other medications	39 (14%)
Application of CIWA or COWS by the primary team (y/n)		97 (34.9%)
Individual psychotherapy recommendation (y/n)		70 (25.2%)

Any percentages that do not amount to 100% represent missing data

CIWA Clinical Institute Withdrawal Assessment Alcohol Scale, *COWS* Clinical Opiate Withdrawal Scale

disease ($p = 0.023$), endocrinological disease ($p < 0.001$), and benzodiazepine use disorder ($p = 0.010$), as well as days until CLP referral ($p < 0.001$) (Table 3).

Discussion

To our knowledge, this is the first study to look at the characteristics of patients with a diagnosis of SUD on a CLP service in Lebanon. From all consults, 18.8% were referred for the management of addiction. Patients were mostly early middle-aged adults, single, and unemployed males. Many used more than one substance, alcohol being the most common. Patients frequently had a comorbid psychiatric history and seldom sought past treatment for their condition. While hospitalized, management was restricted to pharmacological interventions for medically assisted withdrawal. A minority was provided with long-term medications for dependence or referred to other treatment modalities.

The prevalence of referrals for SUDs on our service was higher in comparison to regional findings. In Oman, a study conducted at Sultan Qaboos University Hospital identified SUDs in 8.7% of 104 CLP referrals [11]. At Rashid Hospital Dubai, an analysis of 60 patients identified addiction as the cause of referral in 11.5% of cases [10]. Only 2.26% of all ED presentations in Qatar were related to alcohol and substance use [12]. In this study by Alabdulla and colleagues, users were predominantly males and alcohol was the main substance of use, accounting for 95.5% of cases. In addition, less than 1% were referred to psychiatry or rehabilitative interventions [12]. Our findings are more aligned with international data. In a study of six general hospitals in Finland, 28% of patients who received a psychiatric consultation were diagnosed with SUDs. Alcohol dependence in male patients was also the most common clinical condition

[21]. During the COVID-19 pandemic, SUDs were diagnosed in 15.6% of CLP referrals in a tertiary care hospital based in India [22]. In the USA, nearly half of all ED visits in 2011 were attributed to drug misuse [23]. Our results could be explained by the less conservative regime and more diverse sociocultural background in Lebanon as compared to other Arab countries. Alternatively, stigma toward mental illness in the Arab world would make people more reluctant to disclose mental health issues, particularly addiction, and to seek professional help [24]. Lebanon does not stray away from this trend, as more than half of our participants reported never seeking treatment for their SUDs. This highlights the need for more awareness and targeted support for this disadvantaged population [13].

Alcohol was the most commonly used substance in our sample. In 2008, a rapid situation assessment of substance misuse found that cannabis was the most used substance among university and high school students in Lebanon. Alternatively, heroin was the most common cause of treatment hospitalizations, followed by cocaine [25]. These findings diverge from our results. Besides the difference in the studied population groups, a possible explanation for our finding is the role that alcohol plays in increasing medical comorbidities and causing life-threatening withdrawal [26], commonly leading to hospital admission. Another potential explanation is the under-reporting of the use of illegal substances and related stigma. Even a very effective self-report screening instrument may sometimes fail to identify substance misuse [27].

Our findings also show that among those with alcohol use disorder, comorbid pulmonary and endocrinological diseases, benzodiazepine use disorder, and days until CLP referral were predictors of intensive care unit

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Table 2 Demographics, characteristics, and management of patients with alcohol use disorder seen by the CLP service

Characteristics		Number (percentage)
Age (mean ± standard deviation)		43 ± 20.15
Gender	Male	124 (74.7%)
	Female	42 (25.3%)
Consultation type	Emergency consult	112 (67.5%)
	Floor consult	54 (32.5%)
Duration of alcohol use in years (mean ± standard deviation)		15.1 ± 14.41
Comorbid substance use disorder (y/n)	Stimulant (cocaine) use disorder	30 (18.1%)
	Sedative, hypnotic, or anxiolytic (benzodiazepine) use disorder	25 (15.1%)
	Cannabis use disorder	23 (13.9%)
	Opioid use disorder	19 (11.4%)
	Other substance use disorders	26 (15.7%)
Comorbid mental condition or disorder (y/n)	Suicidality	30 (18%)
	Anxiety disorder	23 (13.8%)
	Mood disorder	23 (13.8%)
	Psychotic disorder	3 (1.8%)
	Personality disorder	2 (1.2%)
	Others	16 (9.6%)
Comorbid related hepatological or neurological complications (y/n)		44 (26.5%)
Previous alcohol use disorder treatment (y/n)		66 (39.8%)
Previous inpatient medically assisted withdrawal (y/n)		39 (23.5%)
History of withdrawal seizures (y/n)		15 (9%)
History of delirium tremens (y/n)		9 (5.4%)
Pharmacological recommendation (y/n)	Lorazepam	62 (37.3%)
	Diazepam	13 (7.8%)
	Other benzodiazepines	13 (7.8%)
	Gabapentin	3 (1.8%)
	Acamprosate	1 (0.6%)
	Disulfiram	1 (0.6%)
	Thiamine	76 (45.8%)
	Folic acid	10 (3.6%)
Medically assisted withdrawal	Fixed-dose regimen	36 (21.9%)
	Symptom-triggered regimen	20 (12%)
	Combined treatment	17 (10.2%)
Application of CIWA by the primary team (y/n)		78 (47%)
Outcome of restraint application (y/n)		0 (0%)
Outcome of intensive care unit admission (y/n)		32 (19.2%)
Outcome of intubation (y/n)		13 (7.8%)

CIWA Clinical Institute Withdrawal Assessment Alcohol Scale

Table 3 Predictors of admission to the intensive care unit in patients with alcohol use disorder

Risk factor (categorical variables)	Chi-square value	OR with 95% CI	*P* value
Pulmonary disease	5.15	2.84 (1.12, 7.17)	0.023
Endocrinological disease	14.84	4.69 (2.05, 10.73)	< 0.001
Benzodiazepine use disorder	6.71	3.44 (1.30, 9.11)	0.010
Risk factor (continuous variables)	**Mann–Whitney *U* test**		***P* value**
Days till CLP referral	3.446		< 0.001

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admission. Patients with alcohol use disorder are predisposed to developing life-threatening withdrawal symptoms and other conditions that require intensive care. They also experience a significantly higher rate of complications, a longer hospital stay, and increased mortality as compared to critically ill patients who do not use alcohol [28]. In a cohort study assessing alcohol withdrawal in the intensive care setting, a higher number of organ dysfunction at admission was associated with a greater risk of complicated hospital stay [29]. Specific disorders in the critical care setting that are impacted by alcohol use include pulmonary diseases, such as pneumonia and acute respiratory distress syndrome, and delirium [28].

While hospitalized, a minority of patients were provided with long-term medications for dependence or referred to long-term treatment. Lebanon has been battling a compounded crisis since 2019 [30], including the COVID-19 pandemic and an ongoing economic crisis. This has led to an inevitable negative impact on mental health, including addiction [15]. Mirroring the current crisis was the Lebanese civil war (1973–1990), which was also plagued by significant economic and financial distress. Baddoura studied the expansion of substance use in a community sample during this period and concluded that the war was conducive to the increase in drug addiction, by increasing the availability of drugs and worsening psychiatric comorbidities [31]. Today, this is compounded by a scarcity of pharmacological and non-pharmacological treatments, limited funding resources, and a shortage of specialized professionals working in the area of addiction medicine. More data are required to fully assess the impact of the current crises on substance misuse and its management in Lebanon. Furthermore, significant reforms are necessary, involving governmental entities, private and public university health hospitals, and non-governmental organizations. By combining their expertise, resources, and dedication, these groups can make substantial strides in combating addiction and improving access to quality care.

Treatment of patients with SUDs is challenging and costly, both for the CLP team and the overall medical and societal systems [32]. Therefore, effective early identification of these patients is necessary. Training healthcare professionals to recognize signs and symptoms of substance use and withdrawal and identify comorbid medical disorders would be an important first step in that direction [33]. Additionally, utilizing appropriate screening tools may help identify those patients in need of a psychiatry consultation for further exploration of the disorder and discussion of treatment options. However, some studies showed that, despite the use of screening instruments, a proportion of patients with SUDs are still missed due to several reasons, the most important being stigma [5]. One study suggested that using more "subtle" screening tools, such as the Substance Abuse Subtle Screening Inventory-3, may improve the chances of identifying those patients who minimize symptoms or deny misuse [5]. In terms of management, delivering brief interventions in hospital settings, such as motivational interviewing, is highly effective [34]. A Cochrane review of brief interventions for hospitalized heavy alcohol users found that delivering brief interventions led to a greater reduction in alcohol consumption, compared to those in control groups, at 6- and 9-month follow-ups [35]. Another structured and simple approach called SBIRT—Screening, Brief Intervention, and Referral to Treatment, has been adapted for use in multiple settings, including hospitals. It helps raise awareness about substance use among patients and find relevant treatment solutions, where appropriate [36]. Providing pharmacological treatment to ease distress during the withdrawal period is also essential [33]. Finally, the development of drug and alcohol CLP services can facilitate discharge planning and help establish a link between acute care settings and addiction treatment services [37, 38]. This ensures continuity of care and outpatient pharmacological and psychological treatments. These services have been found to decrease rehospitalization [33] and should be implemented, through a culturally tailored lens, in this part of the world.

Our study has several limitations. The cross-sectional design and small sample size limit the predictive power of the results. Data were collected from one tertiary care hospital and the services delivered by our CLP team likely go beyond the typical care provided in other hospitals without an established CLP service. These factors limit the generalizability of our findings. Finally, we might have not captured cases missed by the primary team, due to underreporting or minimization of symptoms. Further research with larger sample sizes and catchment areas is required to better assess the characteristics of patients with SUDs presenting to a hospital care setting. This will also help determine how the primary medical team and CLP service can effectively identify patients at risk and provide them with optimal treatment.

Conclusions

Our study highlights relevant characteristics in individuals with SUDs assessed in general hospitals, as well as the different types of interventions they typically receive. Given the prevalence and impact of untreated SUDs on patients presenting to a general hospital setting, the institution of a comprehensive CLP service within the primary medical team is vital to address the unmet needs effectively. The multidisciplinary treatment team would comprise specialized medical doctors, mental health

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professionals, nurses, dieticians, social workers, and case managers. This collaborative approach would ensure that individuals with SUDs receive holistic and individualized care, while considering the complex interplay of factors contributing to substance use. The findings of our study also encourage the transformation of care around SUDs in Lebanon, with emphasis on evidence-based short- and long-term management of the illness. This includes the integration of specialized addiction medicine into routine healthcare services, ensuring timely and appropriate interventions that promote recovery and prevent relapse. In such a process, it is essential to acknowledge our existing challenges, particularly the lack of resources, including cornerstone medications used for the treatment of SUDs. At this level, local and regional reforms are required that would involve the government, relevant stakeholders, university health hospitals, and non-governmental organizations. Moreover, raising awareness about early intervention and destigmatizing seeking help are crucial elements in building a supportive environment for individuals on the path to recovery.

Authors' contributions
SEH and MB conceptualized the topic of the study. SEH, GK, HZ, and MC collected the data of the study. HZ conducted the statistical analysis. SEH, GK, and KAH wrote the manuscript. NI and MB reviewed the manuscript. MB supervised the project. The authors read and approved the final manuscript.

Availability of data and materials
The data that support the findings of this study are available from the corresponding author, MB, upon reasonable request.

Declarations

Ethics approval and consent to participate
The study was approved by the Institutional Review Board of the American University of Beirut Medical Center (BIO-2020–0180).

Consent for publication
The study was approved by the Institutional Review Board of the American University of Beirut Medical Center (BIO-2020–0180).

Competing interests
The authors declare that they have no competing interests.

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