

# Internalized stigma is associated with psychological distress among patients with substance use disorders in Egypt

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## Abstract

**Aim:** This study aimed to investigate stigma, psychological distress, and their correlates among Egyptian substance users.

**Introduction:** Although stigma of substance abuse and its impact on psychological health have recently received considerable attention, these problems are under-addressed among Arab patients.

**Methods:** This cross-sectional study involved a convenient sample of 149 inpatient substance users (142 males, mean age=32.5 years, SD=6.8 years, range: 19-60 years) They completed the Self-Stigma in Alcohol Dependence Scale and the Depression Anxiety Stress Scale-21 Hierarchical multiple regression was conducted to identify correlates of stigma and psychological distress.

**Results:** In adjusted analysis, young age, abuse of alcohol and Bango significantly predicted stigma Shame and shorter hospital stays were associated with higher psychological distress, explaining 31% of the variance, and bait along with stereotype agreement explained 36% of the variance in depression scores.

**Discussion:** Younger substance users are more likely to internalize stigma Meanwhile, the shame component of internalized stigma has the worst effect on psychological health.

**Implications for practice:** The findings necessitate stigma interventions that target shame reduction to enhance the psychological well-being and recovery of substance users.

**Abbreviations:** DASS-21: Depression Anxiety Stress Scale-21; PTSDs: Post-traumatic stress disorders; SSAD: Self-Stigma in Alcohol Dependence Scale; SUDs: Substance use disorders.

## Aim

This study aimed to examine self-stigma, psychological distress, and their correlates among Egyptian substance users This study contributes to the literature since, to date, there is neither measures nor published studies of self-stigma of abuse of illicit substances and related psychological distress among Arabs.

## Hypotheses

Taking the above theoretical background in mind, the researcher expected to find a strong association between self-stigma and abuse of certain substances as well as sociodemographic variables Additionally, this study hypothesized that perceived and internalized stigmas would be strong predictors of psychological distress Likewise, it was expected that chronicity of SUDs, frequent relapse, cannabis and heroin use, employment and housing problems would be predictors of higher psychological distress scores.

## Introduction

Worldwide, over 29 million people suffer from substance use disorders (SUDs) [1]: problematic use of alcohol or other substances that cause clinically significant impairment and noticeable distress [2] These disorders represent a challenge for Arab countries, which

witnessed an outburst of illicit drugs in the last two decades [3] Egypt reports SUDs among 12.4% of the population, which is more than twice the global rate (5%) [4] The problem peaks in young groups and workers in manufacturing industries Concerns have been raised since most cheap and accessible substances have poor quality and lead to severe cognitive and behavioral impairments e.g Bango and tramadol; co-morbidity of multiple SUDs is common [5,6] SUDs patients contract serious infections, suffer from poor physical and psychological health, social problems, criminality, and are at a high risk of premature death [1] In addition, they face a widespread stigma because use of illicit substances is considered a deviant social status [7].

Stigma is a social process: the public blame substance users for their problems and stereotype them as weak-willed, violent, and dangerous [8,9] The public set a status hierarchy, which has drug users at the bottom; they exclude, reject, discriminate against, and unfairly treat substance-using individuals [10,11] Thus, the label of a “drug

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user” seriously threatens individuals’ survival—being denied basic life opportunities for proper work/income, housing, education, health care/insurance services, social interactions and networks [12,13] Drug related discrimination is the worst stigma reported by people with multiple stigmata [10].

From the perspective of the stigmatized person, stigma is a self-devaluation process, which is composed of 4 inter-related stages: 1) awareness of the negative attitudes held by the public toward substance users e.g they say that drug users are untrustworthy; 2) personal agreement with public opinions e.g I think that drug users are untrustworthy; 3) self-occurrence and application of stereotypes to self (in patients who identify with a stigmatized group and view stereotypes as legitimate) e.g I am untrustworthy because I use drugs; 4) shame and demoralization—flawed self-views cause loss of self-esteem and self-efficacy The first two stages embrace none self-relevant stigma perceptions (perceived stigma) while the last two stages constitute internalized stigma [14,15]

Stigma negatively affects both physical and psychological health Patients with high stigma share used syringes; engage in self-harm, risky sexual behaviors, and criminal activities [16,17] Further, stigma impedes recovery and help seeking behaviors Despite the availability of effective therapies for SUDs, only 1 out of 6 patients receive treatment [1], and most treatment seekers drop out before treatment completion [18] Reluctance to use health services is associated with higher stigma perceptions [19], fear of having legal problems, or fear of rejection by care providers [7] There is evidence that substance users are rejected by professionals in treatment facilities [17,20,21].

Symptoms of depression and anxiety, herein referred to as psychological distress, are wide-spread among substance users [22] On one hand, depression, anxiety, and post-traumatic stress disorders (PTSDs) are highly co-morbid with SUDs—they are encountered by up to ¾ of the patients [2,23,24] On the other hand, these symptoms may stem from the negative consequences of stigma and discrimination (e.g lack of employment and housing), which represent a frequent source of stress for SUDs patients [7,21,25].

Chronic stress leads to depletion of internal resources, inability to predict or regulate one’s emotions, and development of feelings of shame [26] (the deepest component of stigma) Most SUDs patients inhibit negative emotions, which in turn stimulates frequent rumination and intrusions i.e., the thought process spins repeatedly around defeating self-views, which further impedes the ability of problem solving and goal achievement [27,28] As a result, people develop a sense of powerlessness, low self-esteem and self-efficacy, poor social functioning, poor quality of life, distress, and depressive symptoms [29].

Fear of acquiring the official label (by contacting mental health services) drives SUDs patients to keep away from treatment settings and to manage their emotional problems on their own [17] Nonetheless, SUDs patients have limited ability to withstand negative emotions [30]; they find illicit drugs an appealing method to control their symptoms of depression and anxiety [31] Nevertheless, intoxication worsens the depressive symptoms, and persons get into a vicious circle where they re-use illicit substances to heal their endless misery Therefore, psychological distress leads to continued abuse, treatment failure, and relapse [24,32].

## Materials and methods

**Study design, participants, and procedure:** This cross-sectional study was conducted at a government psychiatric hospital in

Alexandria between January 2014 and May 2015 Patients were eligible if they were literate, free from severe mental disorders, and willing to sign an informed consent Records were checked to identify eligible participants For all interested participants, the study details were explained, anonymity was ensured, and informed consent was obtained Of inpatients ( $N=420$ ), 51.2% were eligible to participate; however, only 35.5% took part in the study This study included a convenient sample of 149 detoxified SUDs inpatients Because of lack of a private place, questionnaires were handed to participants either in the lounge or the visit room The researcher was available for any clarifications The study was approved by the University of Alexandria Committee for Research Ethics (July 2011).

## Measurements

**Self-Stigma in alcohol dependence Scale (SSAD):** The SSAD was used to measure stigma It consists of 4 subscales which operationalize stages of internalizing stigma indicated beforehand (awareness, agreement, self-occurrence, and shame) Each subscale has 16 items All items convey negative views of SUDs patients e.g unreliable, dirty, and less intelligent Responses were on a 5-point scale (1=*strongly disagree* and 5=*strongly agree*) Higher scores indicate higher stigma (Schomerus et al., 2011) The SSAD was translated into Arabic Because population of the current study used alcohol and other drugs, the scale was modified by substituting ‘alcohol dependence’ with ‘substance dependence’ Alpha coefficients for the SSAD subscales in this study were adequate (.81,.86,.83,.84).

**The depression anxiety stress scale-21 (DASS-21):** The DASS-21 has 21 items in 3 subscales of 7 items each They assess depressive symptoms (e.g feeling down-hearted and blue), anxiety symptoms (e.g feeling close to panic), and general stress symptoms (e.g having a tendency to over-react to situations) Responses were on a 4-point scale (0=*did not apply to me at all* and 3=*applied to me most of the time*) Higher scores indicate more psychological distress [33] The reliability of this scale was high (coefficient alpha=.88) [22].

**Sociodemographics and clinical characteristics:** This comprised 14 questions about gender, age, education, employment and housing status, substances used, long-life duration of use; along with relapse which was indirectly assessed through the number of previous quitting trials and hospital admissions; an open ended question was used to assess previous relapse factors.

**Statistical analysis:** All analyses were performed using IBM SPSS version 22 Continuous variables were checked for normality of distribution, and Log10 function was used to transform skewed variables—all variables except self-occurrence, shame, and stress The researcher used recommended cut-off points of subscales of the DASS-21 [34] to create 3 categorical variables of depression, anxiety, and stress: scores above 14, 10, and 19 were coded moderate/high and scores below the cut-off points were coded low Chi square test detected participants’ demographic and clinical differences in both groups Then, mean items scores of the SSAD were calculated; a one sample t-test was conducted on the scores to evaluate whether their differences from a ‘neutral score=3’ on the SSAD were significant Pearson correlation coefficients assessed the association of stigma with disease chronicity, abused substances, and the demographic characteristics Pearson correlation coefficients also assessed the association of psychological distress, depression, anxiety, and stress with stigma, chronicity, relapse, and the demographic characteristics After assumptions testing, eight hierarchical multiple regression models adjusted for age and gender were conducted to predict stereotype awareness, agreement, self-

occurrence, shame, psychological distress, depression, anxiety, and stress-the models included only outcomes with significant correlations in crude analysis (Tables 1-3) This was because variables were entered simultaneously in the models, and it was possible that the co-existence of many independent variables can reduce the predictive capability of predictors highly correlated (on their own) with outcomes in a linear regression.

**Results**

The sample comprised 149 participants (142 males, mean age=32.5 years, SD=6.8 years, range: 19-60 years) Half the participants were single (49.7%), 76.5% had high school or less, 26.2% were unemployed, 29.5% had insufficient income, and 81.9% were staying with their families Participants varied in their disease chronicity, previous hospital admission and quitting history; a range of abused substances and relapse factors was reported (Table 1).

Table 1 indicates moderate to severe depression, anxiety, and stress in 23.5%, 33%, and 2% of the sample, respectively Female gender was associated with both depressive and anxiety symptoms Unemployment

was associated with depressive symptoms Cannabis was significantly associated with anxiety while use of synthetic drugs was marginally associated with depressive symptoms Relapse due to stressors was associated with depressive symptoms whereas availability of money as a relapse factor was associated with anxiety symptoms.

Table 2 shows means, standard deviations, and correlations of the study variables The mean item scores (supplement) of the SSAD awareness and agreement were 4.01 (SD=0.54) and 3.85 (SD=0.63)—which significantly corresponded to the “agree” response (p values=0.000) Meanwhile, the mean item scores of the SSAD self-occurrence and shame were (significantly below 3) 2.75 (SD=0.69) and 2.56 (SD=0.73) respectively, (p values=0.000).

As shown in Table 2, 4 and 5 no associations were revealed between any of the stigma constructs and the sociodemographic characteristics except for age; however, stigma was correlated with use of alcohol and Bango, the number of abused drugs, disease chronicity, and the number of hospital admissions Both psychological distress and depression were positively correlated with stereotype self-occurrence and shame, and negatively correlated with chronicity, length of hospital

**Table 1.** Participants’ sociodemographic characteristics, abused drug, and relapse factors N (%)

Variables	Depression		P	Anxiety		P	Stress		P	Total (N=149) N (%)
	14<Low (N=113)	14≥ High (N=35)		10< Low (N=99)	10 ≥ High (N=49)		19<Low (N=145)	19≥ High (N=3)		
1. Gender										
Males	111(78.7)	30(21.3)	.008**	98 (69.5)	43 (30.5)	.006**	138 (97.9)	3 (2.1)	.864	142 (95.3)
Females	2 (28.6)	5 (71.4)		1 (14.3)	6 (85.7)		7 (100)	0 (0)		7 (4.7)
2. Education										
High school or less	87 (76.3)	27 (23.7)	.592	75 (66.4)	38 (33.6)	.491	112 (99.1)	1 (0.9)	.139	114 (76.5)
Some college or degree	26 (76.5)	8 (23.5)		24 (68.6)	11(31.4)		33 (94.3)	2 (5.7)		35 (23.5)
3. Marital status										
Single	57 (77)	17 (23)	.930	48 (65.8)	25 (34.2)	.308	72 (98.6)	1(1.4)	.755	74 (49.7)
Married	41 (74.5)	14 (25.5)		40 (72.7)	15 (27.3)		54(98.2)	1(1.8)		55 (36.9)
Divorced/widow	15 (78.94)	4 (21.05)		11 (55)	9 (45)		19(95)	1(5)		20(13.5)
4. Employment										
Employed	89 (80.9)	21 (19.1)	.025*	77 (70.6)	32 (29.4)	.079	107 (98.2)	2 (1.8)	.603	110 (73.8)
Unemployed	24 (63.2)	14 (36.8)		22(56.4)	17 (43.6)		38 (97.4)	1 (2.6)		39 (26.2)
5. Income										
Not enough	31 (72.1)	12 (27.9)	.692	29 (65.9)	15 (34.1)	.443	44 (100)	0 (0)	.197	44 (29.5)
Enough	76 (78.4)	21 (21.6)		64 (66.7)	32 (33.3)		93 (96.9)	3 (3.1)		97 (65.1)
More than enough	5 (71.4)	2 (28.6)		6 (85.7)	1 (14.3)		7 (100)	0 (0)		7 (4.7)
6. Housing status										
With family	95 (77.9)	27 (22.1)	.197	83 (68.6)	38 (31.4)	.621	119 (98.3)	2 (1.7)	.123	122 (81.9)
Alone	14 (77.8)	4 (22.2)		11 (61.1)	7 (38.9)		18 (100)	0 (0)		18 (12.1)
With relatives	4 (50)	4 (50)		5 (55.6)	4 (44.4)		8 (88.9)	1 (11.1)		9 (6)
7. Abused drugs										
Cannabis	87 (78.4)	24 (21.6)	.215	82 (73.2)	30 (26.8)	.004**	109 (98.2)	2 (1.8)	.581	112 (75.2)
Bango	31 (77.5)	9 (22.5)	.514	28 (70)	12 (30)	.389	39 (100)	0 (0)	.397	40 (26.8)
Heroin	91 (76.5)	28 (23.5)	.559	81 (68.1)	38 (31.9)	.342	116 (97.5)	3 (2.5)	.517	120 (80.5)
Synthetic drugs	93 (79.5)	24 (20.5)	.069	82 (70.1)	35 (29.9)	.084	116 (99.1)	1 (0.9)	.111	118 (79.2)
Alcohol	48 (77.4)	14 (22.6)	.477	42 (68.9)	19 (31.1)	.404	60 (98.4)	1 (1.6)	.631	62 (41.6)
Other drugs	23 (74.2)	8 (25.8)	.458	22 (71)	9 (29)	.377	29 (96.7)	1 (3.3)	.496	31 (20.8)
8. Relapse factors										
Withdrawal symptoms	18 (69.2)	8 (30.8)	.241	21 (80.8)	5 (19.2)	.074	25 (96.2)	1 (3.8)	.442	26 (17.8)
Stressors	48 (69.6)	21 (30.4)	.052*	43 (62.3)	26 (37.7)	.176	67 (97.1)	2 (2.9)	.449	69 (47.3)
Social problems	33 (70.2)	14 (29.8)	.161	32 (66.7)	16 (33.3)	.555	47 (97.9)	1 (2.1)	.695	48 (32.9)
Friends	30 (85.7)	5 (14.3)	.100	25 (73.5)	9 (26.5)	.235	34 (100)	0 (0)	.454	35 (24)
craving	29 (80.6)	7 (19.4)	.330	25 (69.4)	11 (30.6)	.437	34 (97.1)	1 (2.9)	.558	36 (24.7)
Loneliness	11 (68.8)	5 (31.3)	.316	10 (62.5)	6 (37.5)	.445	15 (93.8)	1 (6.3)	.292	16 (11)
Money availability	15 (88.2)	2 (11.8)	.180	14 (87.5)	2 (12.5)	.052*	17 (100)	0 (0)	.692	17 (11.6)
Sexual pleasure	10 (66.7)	5 (33.3)	.262	11 (73.3)	4 (26.7)	.404	14 (93.3)	1 (6.7)	.276	15 (10.3)
Residence	12 (75)	4 (25)	.553	12 (75)	4 (25)	.335	15 (100)	0 (0)	.724	16 (11)
Others ¶	40 (75.5)	13 (24.5)	.501	33 (62.3)	20 (37.7)	.238	51 (96.2)	2 (3.8)	.292	53 (36.3)

χ² test \*p ≤ .05, \*\*p < .01

¶e.g., losing hope in their recovery, selling drugs themselves, to get physical energy, and be sociable

**Table 2.** Mean, standard deviation and correlations between stigma, psychological distress, and the predictor variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Psychological distress	--														
2. Depression	.802**	--													
3. Anxiety	.807**	.473**	--												
4. Stress¶	.825**	.573**	.636**	--											
5. SSAD Awareness	-.007	.086	-.017	-.060	--										
6. SSAD Agreement	.143	.183*	.096	.131	.459**	--									
7. SSAD Self-occurrence¶	.417**	.445**	.322**	.385**	.018	.114	--								
8. SSAD Shame¶	.462**	.482**	.347**	.385**	-.025-	.027	.735**	--							
9. Age (years)	-.127	-.117	-.065	-.116	.021	-.029	-.176*	-.128	--						
10. Chronicity (years)	-.196*	-.224**	-.086	-.214**	.090	-.040	-.202*	-.173*	.613**	--					
11. No of quitting trials	-.063	-.105	.000	-.017	.059	.062-	.016	.078	.214**	.331**	--				
12. No of hospital admissions	.123	.078	.120	.155	.068	-.027	.157	.241**	.136	.256**	.459**	--			
13. Length of hospital stay (days)	-.265**	-.325**	-.074	-.090	-.066	-.032	.017	-.116	.059	.119	.127	.018	--		
14. No of abused drugs	-.183*	-.145	-.146	-.131	.187*	.105	-.056	-.009	.100	.309*	.282**	.222**	.218**	--	
15. No of relapse factors	-.016	.043	-.033	-.029	.134	.083	.042	.119	-.023	.163*	.087	.207*	.003	.288**	--
M	27	9.2	7.8	10	64.3	61.7	43.9	40.8	32.5	14.9	14.2	4.1	37.1	3.2	2.2
SD	13	5.4	5.6	4.2	8.4	10.1	11	11.8	6.8	9	21	5	49.2	1.6	1.2

SSAD = Self-Stigma in Alcohol Dependence Scale; ¶ = variables not transformed; M = mean; SD = standard deviation., \*p ≤ .05, \*\*p < .01

**Table 3.** Hierarchical multiple regression predicting stigma variables, overall psychological distress, depression, anxiety, and stress (SSAD = Self-Stigma in Alcohol Dependence Scale; r = Pearson's correlation; β = Beta standardized coefficients; SE = Standard error; 95% CI = 95% Confidence interval for β

ª Parameters adjusted for age and gender, \*p ≤ .05, \*\*p < .01, \*\*\*p < .001

Criterion	Predictorsª	r	β	Adjusted R²	R² changeª	F Change	SE	95% CI for ρ
SSAD Awareness	Alcohol	.249**	.223*	.045	.075	3.864*	.061	.000, .056
	Bango	.216**	.149					
	No of abused drugs	.187*	-.065					
SSAD Agreement	Bango	.251**	.258**	.048	.065	10.165**	.081	.018, .079
	Chronicity	-.202*	-.133	.039	.012	1.846	10.79	-.399, .074
SSAD Shame	Chronicity	-.173*	-.180	.061	.042	3.310*	11.32	-.482, .015
	No of hospital admissions	.241**	.152					
Psychological distress				.34	.31	11.5***	.21	
Depression	Chronicity	-.196*	.139	.39	.36	14.5***	.25	-0.268, -0.055
	Number of abused drugs	-.183*	-.189					
	Cannabis	-.177*	.09					
	Length of hospital stay	-.265**	-.186**					
	SSAD self-occurrence	.417**	.183					
	SSAD Shame	.462**	.374***					
Anxiety	Chronicity	-.224*	.028	.18	.17	10.1***	.3	-0.191, .26
	Cannabis	-.177*	-.045					
	Length of hospital stay	-.325**	-.259***					
	SSAD Agreement	.183*	.156*					
	SSAD self-occurrence	.445**	.175					
	SSAD Shame	.482**	.359***					
Stress	Relapse out of loneliness	.178*	.152*	.25	.20	10***	3.5	.003, .325
	SSAD self-occurrence	.322**	.157					
	SSAD Shame	.347**	.243*					
Stress	Chronicity	-.214**	.013	.25	.20	10***	3.5	-3.029, 3.438
	Job	-.189*	-.046					
	SSAD self-occurrence	.385**	.213*					
	SSAD Shame	.385**	.274*					

**Table 4.** Additional material, Mean, SD, t-test for SSAD subscales mean item scores

	M	SD	t	df	95% CI
SSAD Awareness	4.01	.54	22.925***	146	.925, 1.100
SSAD Agreement	3.85	.63	16.382***	146	.749, .955
SSAD Self-occurrence	2.75	.69	4.331***	146	.360, .135
SSAD Shame	2.56	.73	7.366***	147	.562, .324

**Table 5.** For the first 3 subscales scores N = 147 while for the fourth subscale N = 148 participants

Variables	Depression		Anxiety		Stress	
	14<Low (N=113)	14≥ High (N=35)	10< Low (N=99)	10 ≥ High (N=49)	19<Low (N=145)	19≥ High (N=3)

\*\*\*p = .000

stay, and cannabis use No significant correlations were found between psychological distress or any of its dimensions with education, marital status, and income (data not shown); stress was negatively correlated with the employment status ( $r=-0.189$ ), and positively correlated with the housing status ( $r=0.186$ ),  $p$  values<0.05.

To test the hypotheses of this study, regressions adjusted for age and gender were conducted to examine whether use of alcohol and Bango, the number of abused drugs, disease chronicity, and numbers of hospital admissions can predict stigma Age and gender in the first step explained 0.2%, 0.2%, 4.6%, and 4.4% of the variances in stereotype awareness, agreement, self-occurrence, and shame, respectively Age had a significant contribution to the variance in self-occurrence and shame ( $\beta=-0.206$  and  $-0.186$ ,  $p$  values<0.05) (data not shown) Regression adjusted for age and gender is shown in Table 3 In the second step, alcohol consumption significantly predicted stereotype awareness ( $\beta=0.223$ ,  $p<0.05$ ) whereas use of Bango significantly predicted stereotype agreement ( $\beta=0.258$ ,  $p<0.01$ ).

Adjusted multiple regression was conducted to examine stigma, relapse variables, and the length of hospital stay as predictors of psychological distress, depression, anxiety, and stress Age and gender in the first step explained 4.9%, 4.3%, 2.4%, and 6.9% of the variance in psychological distress, depression, anxiety and stress, respectively Gender had the highest contribution ( $\beta=0.220$ , 0.214, 0.188, and 0.268) (data not shown) In the second step, shame and the length of hospital stay significantly predicted psychological distress  $\Delta F(6,140)=11.5$ ,  $p<0.000$ ,  $\Delta R^2=0.31$  Meanwhile, stereotypes agreement, shame, and the length of hospital stay significantly predicted depression  $\Delta F(6,140)=14.5$ ,  $p<0.000$ ,  $\Delta R^2=0.36$  Both shame and relapse because of loneliness significantly predicted anxiety  $\Delta F(3,143)=10.1$ ,  $p<0.000$ ,  $\Delta R^2=0.17$  whereas stereotypes self-occurrence and shame significantly predicted stress  $\Delta F(4,142)=10$ ,  $p<0.000$ ,  $\Delta R^2=0.20$  Examination of individual predictors indicated that shame had the highest contribution in all models ( $\beta=0.374$ , 0.359, 0.243, and 0.274, respectively).

## Discussion

To the present moment, this is the first study that assessed stigma and psychological distress and their associated factors among Arab SUDs patients The participants endorsed high perceived stigma and to a lesser extent internalized stigma, and both stigma constructs were weakly related, which is consistent with earlier studies [7,10,17,19,20] Contrary to prediction, in adjusted analysis only age and consumption of alcohol and Bango predicted stigma In addition, shame was a strong predictor of psychological distress while among disease chronicity, abused substances, relapse, sociodemographic characteristics, only

short hospital stay significantly predicted distress and depressive symptoms.

Although several studies addressed the relationship between stigma and the sociodemographic variables, results are inconsistent For instance, stigma was associated with high levels of education in Vietnamese drug users who received methadone maintenance treatment [21] On the contrary, it was associated with low levels of education in American alcohol users [19] In this study, young age predicted both stereotypes self-occurrence and shame, which is in accord with an evidence denoting high prevalence of negative attitudes among younger age groups that decrease with increasing age [35] This finding entails that younger drug users are in a greater need for self-concept enhancement treatments since the damages of stigma to mental health can contribute to their continued use and relapse.

The current findings indicate that use of Bango and alcohol predicted higher perceived stigma; participants of this study, however, were multiple drug users Research documents severe cognitive and behavioral impairments (e.g hallucination) with the use of Bango [5], which participants could have personally endured or witnessed among their peers Furthermore, the stigma perceptions held by the participants could be a mere reflection of the negative attitudes that the general Egyptian public hold about alcohol and other substances prohibited by Islam [36,37] In Egypt alcohol use, for religious reasons, is considered a sin [38]; the common slang “Khamorgy” is used to humiliate an alcohol drinker

The poor association observed between perceived and internalized stigma supports claims of a former developmental study that both constructs are distinct [11] Other factors (e.g experiences of rejection) may play roles in the self-devaluation process.

The current results indicate that both perceived and internalized stigma can have a detrimental effect on psychological health Although stigma perceptions are not self-relevant, stereotypes agreement significantly predicted depressive symptoms Moreover, internalized stigma (specifically, shame) was a meaningful construct that contributed to psychological distress, depression, anxiety, and stress symptoms These results are congruent with reports from earlier studies that also included experiences of rejection as a dimension of self-stigma [16,20,21,25] Accordingly, the present study suggests that the role of stigma triggering negative self-feelings such as shame can be the most destructive aspect of stigma, regardless of encountering rejection Therefore, shame should be the target of interventions that aim to restructure resiliency and combat effects of internalized stigma on mental well-being in this disadvantaged population.

Contrary to expectations, chronicity of SUDs, larger numbers of used substances, use of heroin and cannabis (known to induce depressive symptoms) could not predict psychological distress The literature highlights a dose-related effect of heroin [39], cannabis, and marijuana on mental health in regular users [40,41] However, the present study did not examine routes of administration, doses, and frequencies of substance use while participants reported all the drugs that they used in their lifetime—they possibly shifted between many substances and eventually were dependent on one or two drugs Besides, most participants used several substances simultaneously, which probably weakened the estimated associations between distress outcomes and use of specific single substances.

Shorter hospital stays, indicative of recent hospital admission, significantly predicted higher psychological distress and depressive symptoms; most participants reported receiving a dose on the day

of admission or the day before This finding lends further support to the contribution of current and recent substance use to psychological distress and depressive symptoms—which is in line with outcomes of similar studies that recorded an association of depression with fewer total days of treatment [39] and active drug use [25]

Among all relapse factors, only loneliness significantly predicted anxiety symptoms The reason why loneliness in particular predicted anxiety is unclear Loneliness was fairly reported while social problems and stressors were highly stated as relapse factors Meanwhile, most participants (as usual in Egypt) were staying with their families, and stress symptoms were associated with the housing status—these results might suggest that participants felt unsupported and/or lonely though staying with their families Evidence denotes a need for acceptance among anxious people who also feel lonely [42], which highlights a likelihood that anxious participants could have encountered rejection within their close social networks This claim draws support from the strong association between family functioning and psychological distress among SUDs patients [2] Future studies should address the effect of social support and rejection on the mental health of SUDs victims.

### Limitations

This study has several weaknesses, which must be acknowledged Generalizability of the findings is limited since participants were not representative of the Egyptian SUDs population: under-educated, low-income, multiple-substance users, prominently men recruited from a government hospital Besides, data were prone to self-report bias, and the sample was relatively small because of logistic reasons Additionally, the scale that measured stigma (SSAD) ignores experiences of rejection and stigma coping, which indicates underestimation of stigma in this study.

### Conclusion

The study at hand suggests that stigma (the shame component) has the highest contribution to psychological distress, depression, anxiety, and stress Findings necessitate the use of special shame management interventions to improve psychological health, especially among young users of illicit drugs This study suggests a need to investigate experiences of rejection, social support, and quality of life in larger samples to broaden understanding of stigma and its effect on psychological well-being among Egyptian SUDs patients

### Conflicts of interest

The author reports no conflict of interest to declare.

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