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# Relationship between psychological factors and perceived stigma of addiction among women with substance use disorders, Thailand

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## Abstract:

**BACKGROUND:** Substance use disorders (SUDs) are one of the most stigmatized health conditions that impact drug user's treatment engagement. However, to date, little is known about perceived stigma and its correlates with psychological factors among high-risk groups such as people with SUDs in the criminal justice system. This study aimed to determine the association of psychological factors and perceived stigma of addiction among women with SUDs.

**MATERIALS AND METHODS:** This cross-sectional design was conducted on 652 women with SUDs who were treated in all 7 compulsory drug detention centers in Thailand with consecutive sampling technique. The data were collected by standardized interviewers with interviewing questionnaire. Multiple logistic regression was applied to examine the effect of psychological factors and perceived stigma.

**RESULTS:** More than half of SUD patients (57.2%) were methamphetamine abuse or dependence, approximately 69.9% reported high level of perceived stigma, 56.7% had mild depression, 34.8% had low level of perceived social support, and the average perceived stress score was 19.2 (standard deviation, 7.5). The perceived stigma was positively related to depressive symptom and perceived stress while was inversely related to perceived social support.

**CONCLUSION:** The psychological factors were strongly associated with perceived stigma of addiction. Thus, the detection of psychological problems among SUD patients may be benefit clinicians for identifying which patients are most at risk of perceived stigma and are the potential targets of intervention to reduce stigma in clinical practice.

## Keywords:

Depression, social support, stigmatization, stress, substance use disorders

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## Introduction

Substance use remains a crucial problem in Thailand. In 2016, substance users (37.6%) were treated in compulsory drug detention centers (CDDCs) of criminal justice system and about 10.8% of substance use disorder (SUD) patients were women.<sup>[1]</sup> Some researches suggest that women reported a higher levels of perceived stigma than men, and stigma is their common reason for not seeking or enter

treatment and dropping out prematurely.<sup>[2,3]</sup> Women with SUDs who were treated in CDDCs in the criminal justice system are at risk of perceived stigma in which they think others hold negative stereotypes about them.<sup>[4]</sup> Because legal pressures (e.g., compulsory treatment, probation, and detention) to enter treatment may contribute to feelings of low self-worth and shame, and the criminalization of substance use has resulted in increases negative attitudes towards persons who use illicit drugs. In addition, women with SUDs who used

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illicit drugs or had a criminal history were devalued groups, which may be more vulnerable to experience perceived stigma.<sup>[4,5]</sup> In addition, women with SUDs who used illicit drugs or had a criminal history were devalued groups, which may be more vulnerable to experience perceived stigma.<sup>[5]</sup> Several studies implied that psychological factors associated with SUD stigmatization. The SUD patients who have psychiatric comorbidity, including more severe depression, more perceived stress, and low perceived social support, reported a higher levels of perceived stigma. Also, women addicts have higher rates of psychiatric comorbidity than men.<sup>[6,7]</sup> Besides, the relationship between psychological variables and perceived stigma can be complex, so to understand this phenomenon better, it is necessary to determine which these variables influence stigma in SUD patients.<sup>[8]</sup> However, many studies have been conducted of HIV-related stigma in women. The research contributing role of psychological factors on perceived stigma in women with SUDs are lacking, and no evidence available on this subject in Thailand.<sup>[9,10]</sup> Thus, investigating the association between psychological factors and perceived stigma of addiction may contribute to early detection signed of psychological distress, to classified people with SUDs who at risk of perceived stigma, and to design appropriated stigma reduction interventions for treatment dropout prevention programmed or ensure patients remain in substance use treatment.

## Materials and Methods

### Study design and setting

This cross-sectional study was conducted in all 7 CDDCs of criminal justice system that is operated by the Ministry of Public Health, Thailand, from July 2017 to January 2019.

### Study participants and sampling

The eligible clients were female drug addicts who had received treatment in CDDCs, were diagnosed SUDs by the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition, were enrolled in drug treatment throughout the study period, and were willing to participate, although they were excluded if they provided an incomplete response. The participants who met the eligibility criteria were selected by consecutive sampling techniques. The sample size was calculated by using Cochran's formula,<sup>[11]</sup> with estimator of the percentage of female drug users who reported their experiences of stigma (16.4%) in the study followed by Duangjampha and Kanato<sup>[12]</sup> and we desire a 95% confidence interval and 3% precision. This accounted for 586 clients, then plus 10% compensation for nonresponse or dropout. The final sample size was 652. The data points were gathered by structured interview questionnaires conducted by

14 standardized interviewers of all CDDCs, and the participants were interviewed in a private room.

### Data collection tool and technique

The structured interview questionnaires were composed of four parts as follows:

#### *Predictor variables*

Part 1: Sociodemographic factors included age, education, marital status, and occupational status. All variables were identified as dichotomous variables, except for age variable which was continuous variable.

Part 2: Substance use factors included type of SUD, duration of substance use, and history of substance use treatment, which all variables were categorized as dichotomous variables.

Part 3: Psychological factors comprised depression, perceived stress, and perceived social support.

Depression: The 21-item Beck Depression Inventory-II<sup>[13,14]</sup> was used to measure depression symptoms. Participants were asked to response to each item based on their experiences within the past 2 weeks. The items are rated on a four-point scale (self-evaluative statements), ranging from 0 to 3. Summary scores range from 0 to 63. The recommended cutoff for minimal depression is 13, whereas score of 14–19 as mild, 20–28 as moderate, and 29–63 as severe depression. The scale has good internal consistency (Cronbach's alpha was 0.83).

Perceived stress: We administered the Thai version of Perceived Stress Scale-10, which was translated and validated by Wongpakaran and Wongpakaran.<sup>[15]</sup> This is a 10-item scale that assesses an individual's level of perceived stress in the past month. Each question is responded on a five-point Likert scale ranging from 0 (never) to 4 (very often). The total score ranges from 0 to 40, with higher scores indicating greater perceived stress. It has a good internal consistency (Cronbach's alpha was 0.88).

Perceived social support was measured by the Multidimensional Scale of Perceived Social Support-Thai version, which was translated and validated by Wongpakaran *et al.*<sup>[16]</sup> reflecting an individual's perception of social support from three sources: family, friend, and significant others. This scale consisted of 12 items rated on a seven-point Likert scale with score ranging from 1 (strongly disagree) to 7 (strongly agree). The total score ranges from 12 to 84, which were categorized into three groups based on tertiles of their natural distributions<sup>[17]</sup> as follows: low  $\leq 38$ , moderate 39–52, and high  $\geq 53$ . This scale has good internal consistency (Cronbach's alpha was 0.82).

### Outcome variable

Part 4: The primary outcome of this study was perceived stigma of addiction. The Addiction Stigma Scale for the Thai population developed by Kanato and Leyatikul<sup>[18]</sup> was used to assess the perceived stigma of addiction. The respondents were asked about their beliefs regarding the way others in their neighborhood think about substance users. This summed rating scale consisted of 30 items. The total score ranges from 16 to 120, with recommended cutoff as score 86 or upper as high perceived stigma and <86 as low perceived stigma. It has a good internal consistency (Cronbach's alpha was 0.84).

### Data analysis

Descriptive analyses were performed for all variable characteristics. Next, the bivariate odds ratio (OR) was computed to examine the association between sociodemographic factors, substance use factors, psychological factors, and perceived stigma of addiction. The adjusted OR estimated from multivariable logistic regression indicated the relationship between psychological factors and perceived stigma of addiction after adjusting for all other predictors. We developed a series model such as model 1; we added three psychological factors (e.g., depression, perceived stress, and perceived social support) and four sociodemographic factors to the model. In model 2, three substance use variables were entered into model 1. All analyses were conducted using SPSS version 20.0 (IBM Corp., Armonk, NY, USA), and the statistically significant level was set as  $P < 0.05$ .

### Ethical consideration

After receiving the research information, all participants provided written informed consent. This research was approved by the Research Ethics Boards of Khon Kaen University and the Princess Mother National Institute on Drug Abuse Treatment (ref no. HE581318).

## Results

The respondents were on average age 26.6 years old (standard deviation, 6.9 years), and approximately 69.9% reported a high level of perceived stigma. Most of them were employed (66.7%), had completed secondary school or more (57.1%), and single (59.0%). More than half of patients were methamphetamine abuse or dependence and used the substances for 3 or more years, and about one-third have received treatment for substance abuse. Regarding the psychological factors investigated, the mean score for perceived stress was 19.2 (standard deviation, 7.5), whereas about 56.7% reported mild depression, and 34.8% reported a low level of perceived social support [Table 1].

In bivariate analyses, females who reported moderate-to-severe depression and higher levels of

perceived stress were significantly more likely to report perceived stigma of addiction, whereas those who had a moderate-to-high level of perceived social support were less likely to report perceived stigma. Moreover, the perceived stigma was higher among younger and unemployed females [Table 2].

In multiple logistic regression analyses, model 1 showed that three psychological factors were associated with higher perceived stigma, which similar to that of the bivariate model. In term of the sociodemographic factors, only unemployment factor was related to higher perceived stigma. In model 2, substance use factors were added to model 1. The depression, perceived stress, and unemployment factors remained significantly associated with greater perceived stigma, whereas perceived social support was inversely related to perceived stigma, after adjusting for the effect of other predictors. In addition, there was no significant association between substance use factors and perceived stigma [Table 2].

## Discussion

The finding revealed that SUD patients with greater depressive severity were more likely to perceive stigma, in accordance with the studies of Pyne *et al.*,<sup>[19]</sup> Melchior *et al.*,<sup>[20]</sup> and da Silveira *et al.*<sup>[21]</sup> who reported that perceived stigma is positively related to symptoms of depression in patients with SUDs and depressive disorder is highly comorbid with SUDs, which the presence of this symptom increases perceived stigma. One possible explanation is that perceived stigma among SUD patients with more severe depression may be based on accurate perceptions of negative life events and not cognitive distortions, i.e., patients with more severe depression may be more socially devalued and isolated by others than less severely depressed patients. Thus, depressive symptoms contributed to higher perceived stigma.<sup>[22,23]</sup> Furthermore, the cognitive-behavioral models of depression suggest that the high level of cognitive distortions related to more severe depression may accentuate all-or-nothing thinking and lead to greater perceived stigma.<sup>[24,25]</sup>

Besides, SUD patients who reported more perceived stress were more likely to endorsed high perceived stigma in this study. Consistent with previous studies of Moore *et al.*<sup>[5]</sup> and Ali,<sup>[26]</sup> one possible explanation is that SUD patients experience stress related to their illness and concealing their substance use to avoid embarrassment and judgment from their family and social,<sup>[5,27]</sup> which chronic stress leads to depletion of internal resources, inability to predict or regulate one's emotions, development of negative self-feelings, self-devaluation, and shame that may increase risk of self-stigma and perceived stigma.<sup>[26,27]</sup> Moreover,

**Table 1: Distribution of sociodemographic factors, substance use factors, and psychological factors by perceived stigma of addiction**

Variables	Perceived stigma of addiction		
	Total (n=652), n (%)	High level (n=456), n (%)	Low level (n=196), n (%)
<b>Sociodemographic factors</b>			
Age (years)	26.6±6.9	26.2±6.8	27.6±7.3
<b>Education</b>			
Primary school or lower	280 (42.9)	203 (44.5)	77 (39.3)
Secondary school or above	372 (57.1)	253 (55.5)	119 (60.7)
<b>Marital status</b>			
Married	267 (41.0)	196 (43.0)	71 (36.2)
Single	385 (59.0)	260 (57.0)	125 (63.8)
<b>Occupational status</b>			
Unemployed	217 (33.3)	174 (38.2)	43 (21.9)
Employed	435 (66.7)	282 (61.8)	153 (78.1)
<b>Substance use factors</b>			
<b>Substance use disorder</b>			
Methamphetamine abuse or dependence	373 (57.2)	268 (58.8)	105 (53.6)
Others (cannabis, cocaine, ecstasy, ketamine)	279 (42.8)	188 (41.2)	91 (47.4)
<b>Duration of substance use (years)</b>			
≥3	365 (56.0)	262 (57.5)	103 (52.6)
<3	287 (44.0)	194 (42.5)	93 (47.4)
<b>History of substance abuse treatment</b>			
Yes	212 (32.5)	157 (34.4)	55 (28.1)
No	440 (67.5)	299 (65.6)	141 (71.9)
<b>Psychological factors</b>			
<b>Depression</b>			
Severe	82 (12.6)	68 (14.9)	14 (7.1)
Moderate	200 (30.7)	158 (34.6)	42 (21.4)
Mild	370 (56.7)	230 (50.5)	140 (71.5)
<b>Perceived social support</b>			
High	204 (31.3)	121 (26.5)	83 (42.3)
Moderate	221 (33.9)	150 (32.9)	71 (36.2)
Low	227 (34.8)	185 (40.6)	42 (21.4)
Perceived stress	19.2±7.5	21.5±6.9	13.8±5.6

Values are presented as n (%) or mean±SD. SD=Standard deviation

detained women who had high levels of perceived stress were at risk of internalized or perceived stigma because of the detention as a legal pressure that is a stressful situation, which detainees have no control over the situation.<sup>[28]</sup> Thus, women who were detained in CDDCs may had more stressful because they unable to cope with their situation, which can lead them to have a negative view or ashamed of themselves.<sup>[5]</sup> We also found that SUD patients with higher perceived social support were less likely to perceived stigma, which is consistent with earlier studies of Birtel *et al.*,<sup>[29]</sup> Akdağ *et al.*,<sup>[30]</sup> and Nugent *et al.*<sup>[31]</sup> who showed that perceived social support is negatively associated with perceived stigma. A possible explanation is that SUD patients with high levels of social support are able to utilize their supports in a way that allows for effective coping with stigma and its negative consequences, i.e., patients who perceived close others (e.g., family or friends) to be supportive may help decrease the society's negative evaluation and help them develop a more positive sense of self, leading to less perceived stigma.<sup>[29,31]</sup>

Meanwhile, people with SUDs often experience more socially excluded, less social interaction, and withdraw from their support network (e.g., family, friends, or significant others). As a result, they may be perceived discrimination and lose social support as an important coping strategy, which can lead to increases perceived stigma of addiction.<sup>[32,33]</sup> Therefore, perceived social support is crucial for individuals with SUDs to enhance coping strategies and buffer against stigma. Moreover, we found that unemployed people had a greater perceived stigma, which is consistent with the studies of Kalisov *et al.*,<sup>[34]</sup> and da Silveira *et al.*<sup>[21]</sup> reported that individuals who did not attend a workplace or are unemployed often reported high levels of stigma experiences. A possible explanation is that individuals with SUDs or with substance use history are perceived more negatively as weak moral character, lacked capacity, dishonest, and reduced social inclusion, which lead to not engaged in community events, including employment.<sup>[21,34,35]</sup> These may impact an individual's access to employment opportunities or employer's

**Table 2: Odds ratios and 95% confidence intervals from logistic regression for high perceived stigma of addiction**

Variables	Bivariate		Model 1		Model 2	
	Unadjusted OR (95% CI)	P	Adjusted OR (95% CI)	P	Adjusted OR (95% CI)	P
Psychological factors						
Depression						
Moderate (ref.: Mild)	2.29 (1.54-3.42)	<0.001	2.37 (1.43-3.92)	0.001	2.43 (1.46-4.04)	0.001
Severe (ref.: Mild)	2.95 (1.60-5.45)	0.001	3.26 (1.59-6.63)	0.001	3.21 (1.56-6.59)	0.001
Perceived social support						
Moderate (ref.: Low)	0.48 (0.31-0.74)	0.001	0.23 (0.13-0.40)	<0.001	0.24 (0.13-0.42)	<0.001
High (ref.: Low)	0.33 (0.21-0.51)	<0.001	0.20 (0.11-0.35)	<0.001	0.21 (0.12-0.37)	<0.001
Perceived stress	1.21 (1.17-1.25)	<0.001	1.22 (1.16-1.26)	<0.001	1.21 (1.17-1.27)	<0.001
Sociodemographic factors						
Age (years)	0.97 (0.95-0.99)	0.020	0.98 (0.96-1.01)	0.445	0.99 (0.95-1.02)	0.364
Primary school or lower (ref.: Secondary school or above)	1.24 (0.88-1.74)	0.216	1.15 (0.76-1.76)	0.494	1.13 (0.74-1.73)	0.555
Married (ref.: Single)	1.32 (0.94-1.87)	0.108	1.11 (0.73-1.71)	0.606	1.12 (0.72-1.72)	0.616
Unemployed (ref.: Employed)	2.19 (1.49-3.23)	<0.001	2.26 (1.41-3.6)	0.001	2.35 (1.45-3.80)	<0.001
Substance use factors						
Methamphetamine abuse or dependence (ref.: Others)	1.23 (0.88-1.73)	0.219	-	-	1.13 (0.73-1.74)	0.594
Duration of substance use $\geq 3$ (ref.: <3 years)	1.22 (0.87-1.70)	0.248	-	-	1.34 (0.88-2.05)	0.174
History of substance abuse treatment (ref.: No)	1.34 (0.93-1.94)	0.112	-	-	1.37 (0.87-2.18)	0.168

Ref=Reference group, CI=Confidence intervals, OR=Odds ratio

hiring decisions.<sup>[36]</sup> Then, consequently contributes to a further increase in stigma internalization.<sup>[21]</sup> Besides, unemployment is an important determinant of low social inclusion.<sup>[37]</sup> If unemployed people with low social inclusion, they are less social interaction, less acceptance, and more perceived stigma.<sup>[35,37]</sup> Some studies indicated that substance user who are unemployed or did not regularly go to work may be less socially included than full-time working people. Thus, substance users who are unemployed with a reduced social inclusion are more likely to report higher levels of perceived stigma.<sup>[34,37]</sup>

### Limitation and recommendation

Our study has some limitations. First, its cross-sectional design and hence, we cannot infer causal relationship. Second, the data were collected by face-to-face interviews, which may be respondents to a social desirability bias. To minimization this bias, validated and standardized instruments were used. Third, our participants were female who detained in CDDCs, which the results of this study cannot be generalized to those in other drug treatment systems or justice-involved populations. Finally, we assessed the perceived stigma of addiction by the addiction stigma scale for Thai people, which the findings may differ from those in different populations and contexts. Despite the limitations, our study has the strength of adjustment for a wide range of confounders. These results provided that psychological factors influence perceived stigma among SUD patients, a vulnerable or hard-to-reach group. Therefore, the consideration of psychological factors is important to

identified SUD patients at risk of perceived stigma. Further, longitudinal studies are need to examine the potential causal association between psychological factors and perceived stigma among SUD patients, and the more effective interventions to reduce perceived stigma and improve the initiation of psychological distress treatment could be designed.

### Conclusion

The perceived stigma of addiction was positively related to symptoms of depression and perceived stress while negatively related to perceived social support among women with SUDs. Being aware of how psychological factors influence the perceived stigma of addiction can help the clinician to early detection of psychological distress and address the risk of perceived stigma early initiation of treatment.

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### Conflicts of interest

There are no conflicts of interest.

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