Original Article

Quality of Life and its Relationship with Perceived Stigma among Opioid Use Disorder Patients: An Exploratory Study

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ABSTRACT

Background: In view of recent global opioid epidemic and scarcity of literature assessing the quality of life (QoL) and stigma among opioid use disorder (OUD) patients, this study aimed to assess the overall QoL and examine its relationship with perceived stigma among them. **Materials and Methods:** This cross-sectional study assessed patients with OUD at a tertiary care centre. QoL was assessed using the World Health Organization Quality of Life-brief version, whereas perceived stigma was measured using the Perceived Stigma of Substance Abuse Scale (PSAS). **Results:** Among 168 patients with OUD, all the four domain-wise scores of physical health ($r = 0.79$, $P < 0.01$), psychological health ($r = 0.87$, $P < 0.01$), social relationships ($r = 0.78$, $P < 0.01$) and environment ($r = 0.80$, $P < 0.01$) QoL correlated significantly with average score, with maximum impairment noted in the social domain. The mean PSAS score was 21.19 ± 2.99, with perceived stigma found to be significantly associated with impairments in the physical ($\beta = -0.28$, $P < 0.01$), psychological ($\beta = -0.27$, $P < 0.01$) and environment ($\beta = -0.21$, $P < 0.01$) domains of QoL. Furthermore, being employed was significantly associated with impairment in the social domain of QoL ($\beta = -0.17$, $P = 0.02$). **Conclusion:** OUD similarly affects all the four domains of QoL, with a higher level of perceived stigma associated with significantly poorer QoL in the physical, psychological and environment domains. However, future studies assessing different forms of stigma and QoL among patients with OUD are needed to confirm and better characterise the findings of this study.

Key words: *Opioid use disorders, perceived stigma, quality of life, WHOQOL-BREF*

INTRODUCTION

Substance use disorders (SUDs) are chronic relapsing conditions which negatively affect the patient's physical and mental health, societal and family functioning, employment and residential status and access to services.[1,2] The emergence of high-potency synthetic opioid preparations such as heroin and relative

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ease of access to opioids has led to a global opioid abuse epidemic, with an estimated 26.4–36 million people suffering from opioid use disorders (OUDs) worldwide.[3] In the United States alone, opioid overdose-related death rates have increased by about 200% from 2000 to 2014.[4] Furthermore, OUDs are also responsible for significant financial burden caused by the healthcare-, workplace- and criminal-justice-related costs.[5] National Drug Use Survey Report estimated that opioids were responsible for the largest proportion of illicit patients with SUD seeking treatment in India.[6] Thus, the problem of opioid abuse has reached epidemic proportions, and research on various aspects of OUDs is needed to better understand their overall impact and develop more effective intervention strategies for their control.

The World Health Organization (WHO) defines the quality of life (QoL) as 'individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectati ons, standards and concerns'.[7] The QoL provides an empirical assessment of how patients experience functioning in various domains of their life and the effect of treatment on SUD-related burden, which is not captured by traditional substance use symptom-based assessment instruments.[8] Furthermore, higher pretreatment QoL has been shown to predict better outcomes in patients with SUDs.[9] Thus, QoL is being increasingly recognised as an important construct in SUD research and clinical practice.[10]

Stigma can be understood as a sociocultural phenomenon in which specific social groups are devalued, rejected and excluded on the basis of a socially discredited health condition.[11] SUDs are associated with significant social disapproval and discrimination, and patients with a SUD are less likely to be offered help by other individuals in the society than those who have a mental illness or physical disability.[12] The available literature suggests that substance users experience various distinct forms of stigma, including enacted, internalised and perceived stigma.[13] Perceived stigma refers to the extent to which members of a stigmatised group believe that others hold common negative stereotypes about individuals belonging to their stigmatised category.[14] Perceived stigma among patients with SUD is an important area to study since higher levels of perceived stigma have been reported to be associated with greater treatment delay and poorer treatment adherence.[15,16]

However, so far only a limited number of studies have assessed the overall QoL and perceived stigma specifically among patients with OUD, and the majority of them have been conducted in Western settings. Hence, this study aimed to assess the overall QoL and

examine its relationship with perceived stigma among patients with OUD seeking treatment at a tertiary care centre in India.

MATERIALS AND METHODS

Study settings and participants
This is an exploratory study with a cross-sectional design, conducted at a public-funded tertiary care centre in North India. The centre provides both inpatient and outpatient treatment services. The inclusion criteria were age between 18 and 65 years, a clinical diagnosis of OUD made by a trained psychiatrist according to Diagnostic and Statistical Manual 5 criteria, and using the substance for at least 1 year. Patients with comorbid SUD other than nicotine or moderate to severe withdrawal symptoms at the time of assessment and those who refused to give informed written consent were excluded. (Patients with moderate to severe withdrawal symptoms were excluded so that the assessment values were more holistic and not influenced by the acute withdrawal state.)

Study procedure
Patients attending the outpatient or inpatient treatment settings were approached and explained about the nature of the study. Those who agreed to participate and gave informed written consent were assessed for inclusion. The participants were recruited by purposive sampling over a period of 12 months. The details about sociodemographic and clinical characteristics were gathered using a semi-structured proforma. The Hindi version of World Health Organization Quality of Life-brief version (WHOQOL-BREF) was used to assess the QoL across various domains, and Perceived Stigma of Substance Abuse Scale (PSAS) was used to measure the perceived stigma. Data collection was carried out by trained psychiatrists in a single sitting. The study was approved by the Institutional Ethics Committee.

Instruments
Semi-structured proforma
This was developed for this study and used to record details about the sociodemographic profile and relevant clinical details of the study participants. It included information related to substance use pattern and a few other related complications such as a history of injecting drug use (IDU), engaging in high-risk behaviours or drug peddling, or any pending legal issues.

World Health Organization Quality of Life-brief version (WHOQOL-BREF)
This internationally validated instrument consists of 26 items, of which 24 items measure four potentially independent QoL domains of physical health, psychological health, social relationships and environment.[17] The two remaining WHOQOL-BREF

items rate overall subjective QOL and satisfaction with health and were not used in this study. The physical health domain includes questions pertaining to sleep, energy, mobility, the extent to which pain prevents the performance of necessary tasks, need for medications to function in daily life and level of satisfaction with one's capacity for work. The psychological domain focuses on the ability to concentrate, self-esteem, body image, spirituality and the frequency of positive or negative feelings. The social relationships domain includes questions pertaining to satisfaction with personal relationships, social support system and sexual satisfaction. The environment domain includes questions related to safety and security, home and physical environment satisfaction, financial security, health/social care availability, information and leisure activity accessibility and transportation satisfaction.[18] The statements of this questionnaire were rated on a 5-point Likert scale. The mean scores of items in each domain were used to calculate the domain score, which were transformed into a 20-point scale before analysis. Thus, higher domain scores denote a better QoL. The Hindi version of WHOQOL-BREF has been validated previously and has a mean reliability estimate of 0.89.[19]

Perceived Stigma of Substance Abuse Scale (PSAS)

This scale consists of eight items scored on a 4-point Likert scale between 1 (*strongly disagree*) to 4 (*strongly agree*). This scale assesses stigma perceived by subjects toward substance users. Item scores were combined to obtain a total score between 8 and 32, where higher scores indicated more perceived stigma. This scale has good convergent and discriminant validity, and adequate internal consistency ($\alpha = 0.73$).[14] It has been used to assess perceived stigma among substance users and patients with OUD specifically.[20] The Hindi translated version of the instrument is available and was used in this study.[21]

Statistical analysis

Statistical analysis was done using SPSS version 23.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics using mean, standard deviation, frequency and percentage were used to describe the sample characteristics and scores on different scales. Pearson's correlation was used to determine the level of agreement between the four domains of WHOQOL-BREF and average QoL score. Bivariate analysis using Pearson's correlation and independent *t*-test was conducted to examine the associations between measures of QoL, perceived stigma and other sociodemographic and clinical variables. Multiple linear regression analyses were carried out separately to examine perceived stigma and other significant variables as potential independent factors affecting the various domains of QoL. A *P* value of less than 0.05 was considered significant, and all the tests were two-tailed. Missing data were not encountered, and the interviewers were checked for completion during data gathering.

RESULTS

A total of 199 individuals with OUD were approached, and 168 were finally included. Among the 31 individuals who were excluded, 18 were having moderate to severe withdrawal symptoms at the time of assessment, 11 had comorbid SUD other than nicotine and 2 refused to participate.

The sociodemographic and clinical characteristics of the study participants are included in Table 1. The study participants comprised almost exclusively of males, and the majority of them were employed and stayed at an urban residence.

Table 1: Demographic and clinical characteristics of the study participants (*n*=168)

Variable	Mean±SD or frequency (percentage)
Age in years	31.77±10.33
Gender	
Male	167 (99.4%)
Female	1 (0.6%)
Education	
Up to 10th standard	114 (67.9%)
Above 10th standard	54 (32.1%)
Employment status	
Employed	142 (84.5%)
Not employed	26 (15.5%)
Place of residence	
Urban	137 (81.5%)
Rural	31 (18.5%)
Family type	
Nuclear	101 (60.1%)
Extended/joint	67 (39.9%)
Duration of substance use in years	10.23±8.09
Injecting drug use	
No	111 (66.1%)
Yes	57 (33.9%)
High-risk behaviour	
No	149 (88.7%)
Yes	19 (11.3%)
Caught by police	
No	129 (76.8%)
Yes	39 (23.2%)
Incarceration	
No	144 (85.7%)
Yes	24 (14.3%)
Legal case pending	
No	159 (94.6%)
Yes	9 (5.4%)
Drug peddling	
No	164 (97.6%)
Yes	4 (2.4%)

SD - Standard deviation

The mean and standard deviation values for various QoL measures are included in Table 2. The four domain-wise QoL scores for physical health ($r = 0.79$, $P < 0.01$), psychological health ($r = 0.87$, $P < 0.01$), social relationships ($r = 0.78$, $P < 0.01$) and environment ($r = 0.80$, $P < 0.01$) QoL correlated significantly with the average QoL score. The mean and standard deviation of PSAS score assessing perceived stigma were 21.19 and 2.99, respectively.

The results of Pearson's correlation analysis assessing the relationship between the four domains of QoL, the age of participants, duration of substance use and perceived stigma are included in Table 3. The PSAS score showed a significantly negative correlation with the physical, psychological and environment domains of QoL. The environment domain of QoL showed a significantly negative correlation with the age of participants. The results of the independent *t*-test assessing the relationship of the four domains of QoL with other sociodemographic and clinical variables are also described in Table 3. The mean physical QoL domain scores were significantly lower among patients involved in high-risk behaviour (Yes = 9.95 ± 2.14 and No = 11.29 ± 2.43; $t = -2.289$, $P = 0.02$) and drug peddling (Yes = 8.42 ± 4.18 and No = 11.20 ± 2.35; $t = -2.287$, $P = 0.02$). The mean psychological QoL domain score was significantly lower among patients with IDU (IDU = 10.54 ± 2.41 and non-IDU = 11.33 ± 2.25; $t = -2.094$, $P = 0.03$). The mean social QoL domain score was significantly higher among unemployed patients with OUD (Employed = 10.33 ± 2.69 and Unemployed = 11.74 ± 3.35; $t = -2.353$, $P = 0.02$).

Multiple linear regression analyses were carried out to examine perceived stigma as a potential influencing factor for the four domains of QoL [Table 4]. The transformed individual domain scores were entered as the dependent variables, with PSAS score and all the variables found to be significantly associated with various QoL domains in the bivariate analysis entered as independent variables. To check for multicollinearity, the tolerance statistic and variance inflation factor were examined, and they did not reveal significant multicollinearity. (The recommended maximum value of 10 for variation inflation factor and a minimum value of 0.1 for tolerance statistic were used as cut-offs for deciding the acceptable level of multicollinearity.) The results of these analyses showed that after controlling for other variables, perceived stigma was still significantly associated with impairments in physical, psychological and environment domains of QoL. Furthermore, being employed was significantly associated with impairment in the social domain of QoL.

DISCUSSION

This study examined the pattern of impairments in different overall QoL domains among patients with OUD and explored the relationship between perceived stigma among patients and various domains of QoL. There was a significant correlation between all the four domains of physical health, psychological health, social relationships and environment QoL, with all

Table 2: Results of quality of life assessment in study participants

WHOQOL measures	Mean±standard deviation
DOM-1: Physical	11.14±2.43
DOM-2: Psychological	11.06±2.33
DOM-3: Social	10.55±2.83
DOM-4: Environment	11.87±2.46
Average QoL	11.15±2.04

WHOQOL - World Health Organization Quality of Life; DOM - Domain

Table 3: Relationship between perceived stigma, sociodemographic and clinical characteristics with various QoL domains

Variables	QoL DOM-1		QoL DOM-2		QoL DOM-3		QoL DOM-4	
	Statistic	*P*	Statistic	*P*	Statistic	*P*	Statistic	*P*
Age (years)	−0.100[a]	0.19	−0.106[a]	0.17	−0.102[a]	0.19	−0.158[a]	0.04*
Education	−1.009[b]	0.31	−1.484[b]	0.14	−0.039[b]	0.96	0.522[b]	0.27
Employed	0.550[b]	0.58	−0.026[b]	0.97	−2.353[b]	0.02*	−0.547[b]	0.58
Residence	−1.859[b]	0.06	−1.771[b]	0.07	−1.256[b]	0.21	−1.916[b]	0.057
Family type	−0.610[b]	0.54	−1.337[b]	0.18	0.191[b]	0.84	−0.891[b]	0.37
Duration of Substance use (years)	−0.121[a]	0.12	−0.036[a]	0.64	−0.038[a]	0.62	−0.010[a]	0.90
Injecting drug use	−1.949[b]	0.053	−2.094[b]	0.03*	0.990[b]	0.32	0.170[b]	0.86
High-risk behaviour	−2.289[b]	0.02*	−1.493[b]	0.13	0.523[b]	0.66	0.487[b]	0.62
Caught by police	−0.830[b]	0.41	0.097[b]	0.92	0.929[b]	0.35	0.802[b]	0.42
Incarceration	−0.763[b]	0.45	−0.300[b]	0.76	0.001[b]	0.99	−0.306	0.76
Legal case pending	−0.844[b]	0.40	0.157[b]	0.87	0.120[b]	0.90	0.009[b]	0.56
Drug peddling	−2.287[b]	0.02*	−2.404[b]	0.01*	−0.158[b]	0.87	−1.131[b]	0.33
PSAS score	−0.321[a]	<0.01**	−0.300[a]	<0.01**	−0.096[a]	0.21	−0.235[a]	0.002**

QoL - Quality of life; DOM - domain; PSAS - Perceived Stigma of Substance Abuse Scale. [a]Pearson correlation coefficient; [b]Independent *t*-test; *$P<0.05$; **$P<0.01$

Table 4: Multiple linear regression analyses results

QoL measures	Variables in equation	*B* (*P*)	95% CI for *B*
DOM-1[#]	PSAS	−0.299 (<0.01)**	−0.349 to−0.109
	HRB	−1.006 (0.07)	−2.116 to 0.104
	Drug peddling	−1.746 (0.14)	−4.079 to 0.587
DOM-2[##]	PSAS	−0210 (<0.01)**	−0.325 to−0.095
	IDU	−1.589 (0.17)	−3.892 to 0.715
	Drug peddling	−0.575 (0.12)	−1.304 to 0.154
DOM-3[###]	PSAS	−0.082 (0.26)	−0.225 to 0.001
	Employed	−1.369 (0.02)*	−2.549 to−0.188
DOM-4[####]	PSAS	−0.177 (0.005)**	−0.300 to−0.054
	Age	−0.030 (0.09)	−0.066 to 0.006

QoL - Quality of life; DOM - Domain; PSAS - Perceived Stigma of Substance Abuse Scale; HRB - High-risk behaviour; IDU - Injecting drug use; *B*: unstandardised coefficient; CI - Confidence interval. *P<0.05; **P<0.01; [#]Adjusted R^2=0.117 (F=8.36; P<0.01**); [##]Adjusted R^2=0.103 (F=7.38; P<0.01**); [###]Adjusted R^2=0.028 (F=3.41; P=0.03*); [####]Adjusted R^2=0.059 (F=6.27; P=0.02*)

four domain-wise scores showing significantly strong positive correlation with the average QoL score. This supports the biopsychosocial nature of OUD, which negatively affects multiple aspects of an individual's life such as physical and mental health, education, family functioning, employment and housing. The maximum impairment in QoL was for the domain of social relationships, which assesses an individual's satisfaction with personal relationships, social support and sexual activity, emphasising the social nature of the OUDs. These findings are similar to those reported in a previous study assessing the QoL among patients with OUD from a similar treatment setting in India.[22]

This study showed that a higher level of perceived stigma among patients with OUD is a potential influencing factor for causing impairments in the physical health, psychological health and environment domains of QoL. This may be partly explained by the finding that a higher level of perceived stigma is associated with a greater degree of internalised shame and self-concealing behaviour.[23] This might lead to reduced self-esteem and self-efficacy and, in turn, negatively affect the various domains of QoL.[24] Furthermore, studies among patients with SUD have suggested that those with higher perceived stigma were more likely to have delayed utilisation of treatment services for their substance-use-related problems.[25] Thus, a higher level of perceived stigma among patients with OUD might act as an important barrier in the utilisation of services such as opioid substitution treatment. Opioid substitution treatment is associated with multiple health-related benefits and has been shown to improve all four domains QoL in patients with OUD.[26]

Furthermore, this study also revealed that being employed was a potential influencing factor for impairment in social QoL domain. This may be because employed patients with OUD were more likely to be in the company of persons not approving of substance use and had higher chances of facing both direct and indirect forms of discrimination at the workplace. This is supported by the findings from a previous study which reported a higher level of perceived stigma among employed patients with SUD.[20]

However, perceived stigma was not found to be a potential influencing factor for impairment in the social QoL domain. This suggests the possibility of some other factors not explored in this study to be affecting the social QoL domain. Moreover, the perceived stigma was explaining only about 5.7%–11.9% of the variance in impairments observed in the other three QoL domains. This might be because stigma is a multifaceted phenomenon which includes at least three conceptually different constructs of perceived stigma, enacted stigma and internalised stigma.[14] Thus, future studies should assess the effect of different forms of stigma on QoL simultaneously to better understand the relationship between them.

There is a paucity of research on SUD-related stigma when compared with the stigma associated with other mental illnesses such as depression or schizophrenia.[27] The limited available literature on SUD-related stigma is predominantly from Western settings, and findings from those studies need to be tested first, keeping in mind the different sociocultural factors existing in the context of developing non-Western countries like India.

In view of the multifaceted negative consequences of stigma in patients with SUD, this study assessed both the perceived stigma and the QoL simultaneously among patients with OUD using two standardised instruments with good psychometric properties. To the best of our knowledge, this is the first study so far which systematically assessed the relationship between perceived stigma and various domains of QoL. However, the findings of this study need to be interpreted keeping in mind its various limitations. The study was conducted at a single tertiary care centre with a purposive sampling of treatment seekers, comprising almost exclusively of males. Hence, generalisation if any should be done with caution. The study is cross-sectional in nature which does not allow us to explore the effect of treatment on QoL, which needs a longitudinal study. In addition, a control group comprising patients with some chronic physical/mental illness or normal population might have provided better comparative data and increased the robustness of the findings of this study. This study did not assess the severity of opioid use among patients, and hence the effect of severity of substance use on QoL could not be examined. Finally, social desirability bias

and respondent bias could not be fully removed due to the nature of the study.

However, despite these limitations, this study describes the pattern of overall QoL and perceived stigma among patients with OUD, with a higher level of perceived stigma associated with significantly poorer QoL in the physical, psychological and environment domains. Furthermore, future studies with larger sample size and longitudinal design, assessing the different forms of stigma and QoL among patients with OUD, are needed to confirm and better characterise the findings of this study.

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Conflict of interest
There are no conflicts of interest.

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