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Significant co-dependency, anxiety, depression, and family burden among the caregivers of patients with opioid dependence

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Abstract

Objective: Opioid dependence syndrome impacts patients and affects their caregivers. In India, caregivers have a strong bond with patients and play a significant role in their treatment. However, the caregivers suffer adverse effects like violence, anxiety, depression symptoms, and other psychological stresses due to the opioid use of those they care for. Spouses of opioid users especially experience a greater rate of co-dependency (excessive emotional or psychological dependency on their partner) and family burden.

AIM: This study measured the co-dependency, depression, anxiety, and family burden and their association among caregivers of patients with opioid dependence syndrome.

Materials and methods: A cross-sectional study was conducted among 132 caregivers of patients with opioid dependence syndrome at a tertiary care unit in Lucknow, Uttar Pradesh. This was using the MINI 6.0 (Mini-International Neuropsychiatric Interview) for co-morbidities, Spann-Fischer Codependency Scale (SFCD), Patient Health Questionnaire (PHQ9) for depression, Generalised Anxiety Disorder Assessment (GAD-7) and Family Burden Interview Schedule. The data was collected and analysed using Statistical Package for the Social Sciences (SPSS) version 16.

Results: The study demonstrated that caregivers of opioid dependence syndrome patients reported severe co-dependency (50%), severe anxiety (75.6%), and moderately severe depression (54.5%). All participants reported a high burden (100%). A positive correlation was found between variables such as co-dependency and anxiety, co-dependency and depression, co--dependency and family burden, anxiety and depression, anxiety and family burden, and depression and family burden. A significant association was found among variables like co-dependency and anxiety, depression, and family burden which is the following hypothesis.

Conclusion: The present study illustrated that all the caregivers experienced anxiety, depression, co-dependency, and family burden. Preventive measures need to address these issues of the caregivers during the treatment of patients with opioid use disorder.

Keywords

Caregivers, Opioid Dependence Syndrome, Co-Dependency, Anxiety, Depression, Family Burden

INTRODUCTION

Today, no part of the world is free from the curse of drug dependence. Millions of drug-dependent patients worldwide are living distressful lives, but the extent and characteristics of this differs from country to country. 2.1% of the people in India are caught in a vicious circle of drug abuse, which also involves: negative emotions rising and falling in intensity, fantasising about the relief of using drugs or alcohol, a pre-occupation with the thoughts related to substance misuse, a craving for the substance, consumption of the substance, and subsequent loss of control over the behaviour. The number of drug users has been increasing over several decades (Kulsudjarit, 2004).

Both legal and illicit substance misuse causes serious public health issues. The affected persons remain vulnerable for a lifetime and require long-term treatment (Schuckit, 2016). In a country like India, the family plays a vital role in the recovery of the patients and remains the primary source of

attachment, nurturing, and socialisation (Zimić and Jukić, 2012).

Abuse, domestic violence, and adverse family circumstances often arise due to opioid use disorder. Spouses often suffer a greater emotional and physical distress rate, whereas children may experience a higher rate of behavioural disturbances (Pradhan and others, 2012).

Co-dependency often develops among the caregivers, especially in spouses, which helps to maintain substance misuse behaviour among patients (Sarkar and others, 2013; Panaghi and others, 2016). The opioid use behaviour of patients places quite a burden on the caregivers (in terms of mental, physical, social, and financial) (Sharma and others, 2019). Most caregivers also reported depressive symptoms, anxiety, and psychological strain due to the opioid abuse in their family (Soares and others, 2016).

Nonetheless, caregivers provide support, motivation and get involved in the therapeutic process of the patients' treatment. Therefore, changing the family structure and dynamics in our current society can influence opioid use and its impact on caregivers (Zimić and Jukić, 2012).

Prevalence and incidence of opioid users

The United Nations (UN) World Drug Report 2019 stated that around 35 million individuals struggle with substance misuse disorders globally. Only one out of every seven people are treated for it (UN, 2019). Another concerning factor is the method of administering opioids through injection. Worldwide around 11 million individuals injected drugs, including 1.4 million with HIV and 5.6 million with hepatitis C. Abscesses (56%), clogged veins (53%), and overdose episodes (41%) are among the additional issues that intravenous drug users (IDU) experience. Furthermore, almost all IDUs (98%) are opioid-dependent, putting them at risk of the consequences that come with opioid addiction (UN, 2019). According to a national survey on the extent and pattern of substance misuse in India, it is estimated that about 22.6 million individuals use opioids. Nationally, the most common opioid used is heroin (1.14%). The overall prevalence of the current use of an opioid is 2.06%, and about 0.55% of Indians are estimated to need help for their opioid use problems (harmful use and dependence). States like Uttar Pradesh, Punjab, Haryana, Delhi, Maharashtra, Rajasthan, Andhra Pradesh, and Gujarat contributed to more than half of the people with opioid use disorder (Ambekar and others, 2019).

Substance abusers also harm the physical well-being of their family members (Bush and others, 1996). The prevalence and magnitude of physical, sexual, and neglect in substance-abusing families are widespread. The mental health of family members is often badly affected by the substance-abusing person. In the long run, children from these homes are more likely to develop anxiety disorders, substance misuse and depression (Friedman, 1996).

Caregiver burden and co-dependency in opioid use disorder

Caregivers of patients with opioid dependence syndrome describe that the illness affects the caregivers and the opioid-dependent and leads to problematic events. For example, "financial burdens" and "disruption of routine activities" that influence everyone's lives in the family. These problems have been considered significant burdens (Jain and others, 2017; Gupta and others, 2014).

The family environment can determine the burden on the family in terms of coping styles of a family member and the tolerance of the patient's aberrant behaviour (Jain and others, 2017; Choudhary, 2016). Most caregivers, especially spouses, develop maladaptive strategies, such as co-dependency. The caregivers often defend and make excuses for the addict and will do anything to remain in their good graces, being sure not to raise their anger (Askian and others, 2018; Bortolon and others, 2016).

Several studies show the multiple consequences of caregiver burden, such as mental health problems (depression, anxiety, stress and burnout syndrome; physical health deterioration such as diabetes, and other adverse effects such as family dysfunction, family leisure and activities reducd, social stigma, excessive use of health services, and a financial burden (Biegel and others, 2010; Bortolon and others, 2016; Soares and others, 2016).

Faced with the negative influence of this addicted person's behaviour, the entire family structure can be shattered; nonetheless, the family endures varied degrees of both closeness and alienation (Mannelli, 2013).

Many studies show that caregivers have a higher prevalence of illness and suffer domestic violence, as well as deteriorated mental, emotional, and interpersonal functioning. This also includes issues with social adjustment, the relationship with the drug-using person, stress, anxiety, depressive mood, family togetherness, family involvement, conflict, and, in the case of children – behaviour and financial issues (Li and others, 2013; Marcon and others, 2012; Zimić and Jukić, 2012). Sometimes the caregivers have to deal with legal and

financial problems too. The financial burden of drug abuse can lead to a child being undereducated and malnourished. Children substance abusers are also likely to grow up in precarious homes. So, these problems have a considerable global impact on family members (Sharma and others, 2019; Kronenberg and others, 2015). Because of several circumstances like concern for the family, the culture of interdependence, and the absence of sufficient mental health experts, the caregiver plays a critical role in the care and support of people with drug dependency.

This is a significant issue in India and needs extensive research for better

understanding. We hypothesised that there was a significant association between co-dependency, depression, anxiety, and family burden among caregivers of patients with opioid dependence syndrome. This study aimed to measure the co-dependency, depression, anxiety, and family burden and their association among caregivers of patients with opioid dependence syndrome.

METHODS

Sample and data collection

A cross-sectional study was conducted to assess co-dependency, depression, anxiety, and the association between each among the caregivers of opioid dependence syndrome who were enrolled at a tertiary care unit in Lucknow, Utter Pradesh, India, at the time of the study (November 2019 to February 2020). The institutional ethics committee approved this study vide letter number 1205/Rcell-19 with reference code 97th ECM IID/P5.

Subjects were recruited from opioid substitution treatment clinics inpatient and outpatient services by screening all opioid-dependence syndrome registrants (as per ICD-10) and their caregivers who met the selection criteria.

See Figure 1 below.

A purposive sampling technique was used to recruit participants in the study. The inclusion criteria was: patients can be of either gender, aged ≥18 years, with no clinical co-morbid psychiatric illnesses (as per MINI 6.0), and are on treatment. Inclusion criteria used in the study for caregivers was: the caregivers with ≥18 years of age, can be of either gender, involved in the care of the patient for the past 12 months, and healthy (not having any diagnosed major medical illnesses or untreated medical illnesses like diabetes, hypertension, endocrinological disorders, HIV, hepatitis, tuberculosis) by general clinical evaluation.

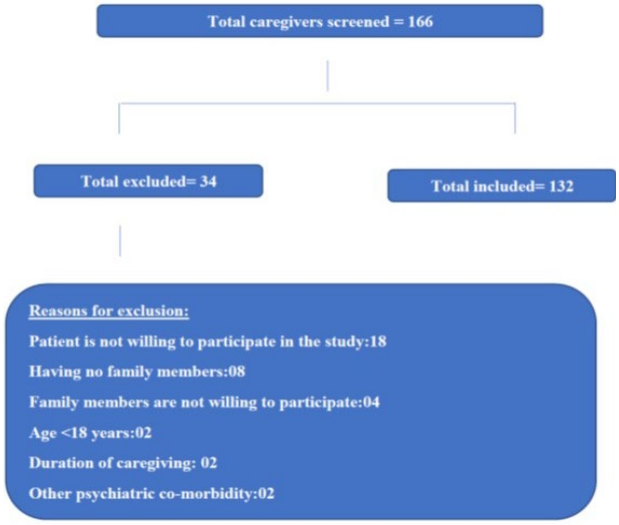

Figure 1.

Written and informed consent had been obtained from both patients and caregivers for enrolment in the study.

Operational definitions

Co-dependency refers to excessive emotional and psychological trust among the caregivers of patients with opioid dependence syndrome. Anxiety and depression means a feeling of intense fear, tension, stress, and sadness experienced by caregivers of patients with opioid dependence syndrome. The family burden is the burden that caregivers of patients with opioid dependence syndrome suffer in terms of financial distress, social isolation, and psychological tension.

Clinical variables included in the study were a family history of psychiatric illness, duration of illness, any other substance misuse, age of onset of illness, duration of treatment, presence of medical morbidity, and medication used.

Assessment tools

This cross-sectional survey was carried out in the hospital setting; socio-demographic and clinical data was collected from the caregivers and patients. The questionnaire was in six parts: MINI 6.0 for co-morbidities, socio-demographic and clinical data, Spann-Fischer Co-Dependency Scale, Patient Health Questionnaire-9 for depression, Generalised Anxiety Disorder-7, and Family Burden Interview Schedule.

The socio-demographic data included patients' age, gender of patients, educational status of patients, and occupation of patients, caregivers' age, caregivers' educational status, caregiver's occupation, family monthly income, area of

living, religion, type of family, relationship with patients.

MINI 6.0 is a structured interview for the major psychiatric disorders in DSM-IV-TR and ICD-10 developed by (Sheehan, 1998). It has 16 modules, each corresponding to a category of diagnosis. It is used in the study to find out about co-morbidities in patients.

Spann-Fischer Codependency Scale is a tool used to define and assess co-dependency produced by Fischer and Spann (1991). It consists of 16 self-report items.

Generalised Anxiety Disorder-7 (GAD-7) represents an anxiety measure based on seven items, scored from 0-3 developed by (Spitzer and others, 2006).

Patient Health Questionnaire-9 (PHQ-9) is a screening instrument with nine items designed to measure depression over the last two weeks (Kroenke and others, 2001).

Family Burden Interview Schedule (FBIS) is a semi-structured interview schedule covering six areas (Pai and Kapur, 1981). Each rated 24 items on a 3-point scale and were assessed among the selected caregivers to measure the family burden.

Data analysis

The questionnaires were coded before entering the data into the computer by the researcher. The sample database was checked for incomplete questionnaires, which were excluded from the research. SPSS version 16 was used for data analysis. Descriptive statistics such as median, interquartile range, frequency and percentage were applied for general socio-demographic and clinical variables, FBIS, GAD-7, PHQ-9, and Spann-Fischer Codependency Scale. Pearson's correlation was used to find the relationship between quantitative variables. Bi-variate analysis (Chi-square test and Fischer's exact test) were used to test the relationship between research variables and the socio-demographic factors and problems encountered. Testing of all hypotheses was performed at a 5% level of significance.

RESULTS

A total of 166 patients were screened, out of which 34 (20.5%) were excluded for not meeting the criteria due to the non-willingness of the patients (10.8%) and followed by caregivers (4.8%) non-willingness to participate. So, a total of 132 caregivers were included in the study.

Socio-demographic profile of patients and caregivers

Most of the patients were 29 to 38 years of age, with a mean of 34.4±10.0. The majority of the patients were male (97.4%), had an intermediate level of education (n=36, 27.3%), and most of them were unemployed (n=44, 33.3%). Most caregivers were over 49 years of age, with a mean age of 39.7 ± 12.2 years.

Most of the caregivers were wives (36.4%), from urban areas (78%), Hindu religion (79.5%), and living in a joint family (63.6%). Most of the caregivers were illiterate (25%), unemployed (34.1%), and had a monthly income of below 10,000 rupees/month (39.4%), £103.

Clinical profile of patients

Most patients were 21 to 30 years of age at the onset of drug dependency (53%), had a duration of illness of 1 to 5 years (47.7%), and had taken <6 months (40.9%) treatment. A total of 63.6% of patients were on methadone, 36.4% on buprenorphine, 18.9% had medical morbidity, and 44.7% had tobacco use. Family history of any mental disorder was present in 15.2% of patients. See table 1.

Assessment of co-dependency, anxiety, depression, and family burden among the caregivers of patients with opioid dependence syndrome

A total of 132 (100%) caregivers had a high level of family burden on FBIS, of which (96.22%) had a financial burden, (98.5%) had a disruption in the level of routine family activities, (81.82%) had a disruption in everyday family interaction, (88.6%) had a disruption in the level of routine family leisure, (81.82%) had an effect on physical health, and (75.8%) had an impact on mental health domains. Socio-demographic factors associated with domains of family burden were religion, relationship with patients, educational status of patients, occupational status of patients, duration of illness, and any other substance misuse. See table 2.

On assessment, most caregivers showed a severe level of anxiety (75.6%), and few had a moderate level of anxiety (24.4%) on GAD-7. Socio-demographic factors associated with anxiety were occupation, religion, and duration of illness.

On PHQ-9 (54.54%) caregivers showed a moderately severe level of depression, (28.04%) had a severe level of depression, and very less (17.42%) had a moderate level of depression. A socio-demographic factor found to be associated with depression was age.

A very extreme and moderate level of co-dependence (50%) was observed among the Spann-Fischer Codependence Scale caregivers.

Table 1: Sociodemographic and clinical profile of caregiver and patient with opioid dependence syndrome

Sample characteristics	(f) (%)
Caregivers age (years)	32 (24.24)
18 years – 28 years	30 (22.72)
29 years – 38 years	27(20.46)
39years – 48 years	43(32.58)
Above 49 years	5 (3.80)
Educational status	
Profession or honours	27 (20.40)
Graduate or postgraduate	26 (19.70)
Intermediate or post-high school diploma	26 (19.70)
High school certificate	12 (9.10)
Middle school certificate	3 (2.30)
Primary school certificate	33 (25.00)
Illiterate	12 (9.10)
Occupation	
Profession	3 (2.30)
Semi-professional	3 (2.30)
Clerical, shop owner, farmer	4 (3.00)
Skilled worker	23 (17.40)
Semi-skilled worker	7 (5.30)
Unskilled worker	8 (6.10)
Unemployed	45 (34.10)
Private sector	30 (22.70)
Family monthly income	
Below ₹10,000	52 (39.40)
₹10, 001- ₹20,000	36 (27.30)
₹20, 001- ₹30,000	17 (12.90)
Above ₹30,000	21 (20.40)
Area of living	
Urban	103 (78.00)
Rural	29 (22.00)
Religion	
Hindu	105 (79.50)
Muslim	26 (19.50)
Others	1 (8.00)

Type of family	
Joint family	84 (63.60)
Nuclear family	48 (36.40)
Relationship with patient	
Father	28 (21.20)
Mother	20 (15.20)
Husband	2 (1.50)
Wife	48 (36.40)
Brother	17 (12.90)
Sister	8 (6.10)
Patient's age (years)	
18 years – 28 years	39 (29.60)
29 years – 38 years	52 (39.40)
39 years – 48 years	29 (22.00)
Above 49 years	12 (9.10)
Gender	
Male	128 (97.00)
Female	4 (3.00)
Educational status	
Profession or honours	5 (3.80)
Graduate or postgraduate	19 (14.40)
Intermediate or post-high school diploma	36 (27.30)
High school certificate	27 (20.50)
Middle school certificate	16 (12.10)
Primary school certificate	3 (2.30)
Illiterate	26 (19.60)
Occupation	
Profession	12 (9.10)
Semi-professional	1 (8.00)
Clerical, shop owner, farmer	2 (1.50)
Skilled worker	35 (26.50)
Semi-skilled worker	17 (12.90)
Unskilled worker	20 (15.20)
Unemployed	44 (33.30)
Private sector	1 (8.00)

Family H/O psychiatric illness	
Yes	20 (15.20)
No	112 (84.80)
Duration of illness	
1– 5 years	63 (47.70)
6 – 10 years	28 (25.00)
More than 10 years	41 (30.30)
Any other substance misuse	
Tobacco	59 (44.70)
Alcohol	33 (25.00)
Others	40 (30.30)
Age of onset of mental illness	
Less than 20 years	42 (32.0)
21– 30 years	70 (53.00)
31 – 40 years	15 (11.00)
41 – 50 years	5 (4.00)
Duration of treatment	
< 6 months	54 (40.9)
6 months – 1 years	28 (21.1)
1 years – 2 years	17 (13.0)
> 2 years	33 (25.0)
Presence of medical morbidity	
Present	25 (18.9)
Absent	107 (81.1)
Medication used	
Methadone	84 (63.6)
BPN (Buprenorphine)	48 (36.4)

Socio-demographic factors associated with co-dependency were caregivers' age and relationship with the patient.

Association between co-dependency, anxiety, depression and family burden among caregivers of patients with opioid dependence syndrome

A positive correlation was found between co-dependence and anxiety (r=0.216), co-dependence and depression (r=0.205), family burden and co-dependence (r=0.300), anxiety and depression (r=0.300), family burden and anxiety (r=0.271), and family burden and depression (r=0.1).

Table 3 shows that there is mild positive correlation among co-dependency and anxiety by 0.21, co-dependency and depression by 0.0205, co-dependency and family burden by 0.300, anxiety and depression by 0.300, anxiety and family burden by 0.271 and depression and family burden by 0.1.

Table 2: Assessment of co-dependency, anxiety, depression, family burden among caregivers of patients with opioid dependence syndrome. (n=132)

S. No	Category	f (%)
1.	Level of anxiety	
	Mild anxiety (0 – 7)	0 (0.00)
	Moderate anxiety (11 – 15)	32 (24)
	Severe anxiety (16 – 21)	100 (75.60)
2.	Level of depression	
	Minimal depression (1 – 4)	0 (0.00)
	Mild depression (5 – 9)	0 (0.00)
	Moderate depression (10 – 14)	23 (17.42)
	Moderately severe depression (15 – 19)	72 (54.54)
	Severe depression (20 – 27)	37 (28.04)
3.	Level of co-dependency	
	Mild co-dependency (0 – 24)	0 (0.00)
	Moderate co-dependency (25 – 48)	0 (0.00)
	Severe co-dependency (49 -72)	66 (50.00)
	Very severe co-dependency (73 – 96)	66 (50.00)
4.	Level of family burden (overall)	
	Less burden (0 – 24)	0 (0)
	More burden (25 – 48)	132 (100.00)
5.	Level of family burden (domain wise)	
A	Level of financial burden	
	Less burden (0 – 6)	5 (3.78)
	More burden (7 – 12)	127 (96.22)
B	Level of routine family Activity disruption	
	Less burden (0 – 7)	2 (1.50)
	More burden (8 – 14)	130 (98.50)
C	Level of disruption in routine family leisure	
	Less burden (0 – 4)	15 (11.37)
	More burden (4 – 8)	117 (88.63)
D	Level of disruption in routine family interaction	
	Less burden (0 – 3)	24 (18.18)
	More burden (3 – 6)	108 (81.82)
E	Level of effect on physical health on others	
	Less burden (0 – 2)	37 (28.03)
	More burden (2 – 4)	95 (71.97)
F	Level of effect on mental health on others	
	Less burden (0 – 2)	32 (24.24)
	More burden (2 – 4)	100 (75.76)

Table 3: Level of correlation between co-dependency, anxiety, depression and family burden (n=132)

Correlation Co-efficient	Anxiety		Co-dependency		Depression		Financial Burden		Routine Family Activity		Family Leisure		Effect on physical health		Effect on Mental health	
	Rho	'P' * Value*	Rho	'P' * Value	Rho	'P' * Value	Rho	'P' * Value	Rho	'P' * Value	Rho	'P' * Value	Rho	'P' * Value	rho	'P' * Value
Anxiety	1		0.216	0.013	0.300	0.000	0.106	0.224	0.145	0.097	0.211	0.015	0.239	0.006	0.123	0.164
Co-dependency	0.216	0.013	1		0.205	0.019	0.225	0.010	0.270	0.002	0.325	0.000	0.164	0.060	0.045	0.616
Depression	0.300	0.000	0.205	0.019	1		0.258	0.003	0.044	0.614	0.143	0.102	0.034	0.702	0.119	0.178
Financial Burden	0.106	0.224	0.225	0.010	0.258	0.003	1		0.205	0.019	0.418	0.000	0.395	0.000	0.094	0.287
Routine Family Activity	0.145	0.097	0.270	0.002	0.044	0.614	0.205	0.019	1		0.392	0.000	0.072	0.411	0.138	0.118
Family Leisure	0.211	0.015	0.325	0.000	0.143	0.102	0.418	0.000	0.392	0.000	1		0.339	0.000	0.012	0.894
Effect on physical health	0.239	0.006	0.164	0.060	0.034	0.702	0.395	0.000	0.072	0.411	0.339	0.000	1		0.052	0.559
Effect on Mental health	0.123	0.164	0.045	0.616	0.119	0.178	0.094	0.287	0.138	0.118	0.012	0.894	0.052	0.559	1	

*(p< 0.05)

Association between selected socio-demographic and clinical variables with co-dependency, anxiety, depression, and family burden among caregivers of patients with opioid dependence syndrome

Duration of illness had a significant negative association with anxiety (r=-0.114, p=0.046) and depression (r=-0.1814, p=0.037). The age of onset had a significant negative correlation with co-dependence (r=-0.17, p=0.061) and depression (r=-0.233, p=0.007). Higher patient's age had a significant negative correlation with depression (r=-0.175, p=0.044) and family burden (r=-0.235, p=0.06). Caregiver's age had a significant negative correlation with co-dependence (r=-0.219, p=0.011).

Additionally, we compared the co-dependency, anxiety, depression, family burden between caregiver who is the wife of the patient versus a caregiver who is other than a wife of the patient. See table 2.

A caregiver who is the wife of the patient had significantly higher level of very severe co-dependency, in comparison to a caregiver who is other than the wife of the patient. There were no other differences of statistical significance between the two groups.

Supplementary Table 1: Correlation of selected socio-demographic and clinical variables with co-dependency, anxiety, depression and family burden among caregivers of patients with ODS

Variables	Co-dependency	Anxiety	Depression	Family burden
Caregiver's age				
Rho	-0.219	-0.056	-0.060	0.053
P-value	0.011*	0.526	0.494	0.380
Patient's age				
Rho	-0.122	0.018	-0.175	-0.235
P-value	0.163	0.830	0.044*	0.006*
Age of onset of illness				
Rho	-0.17	-0.233	0.124	0.045
P-value	0.016*	0.007*	0.15	0.606
Duration of treatment				
Rho	-0.021	0.083	-0.047	-0.032
P-value	0.811	0.339	0.059	0.715
Duration of illness				
Rho	-0.0903	-0.114	-0.181	-0.090
P-value	0.304	0.046*	0.037*	0.304

*(p<0.05)

Supplementary table 2: assessment of co-dependency, anxiety, depression, family burden between caregivers of patients with opioid dependence syndrome

S. No	Category	Caregiver who is wife of the patient	Caregiver who is other than wife of the patient	Test of significance
1.	**Level of anxiety**			
	Mild anxiety (0 – 7)	-	-	
	Moderate anxiety (11 – 15)*	08	24	0.144
	Severe anxiety (16 – 21)*	40	60	
2.	**Level of depression**			
	Minimal depression (1 – 4)	-	-	-----
	Mild depression (5 – 9)*	0	1	
	Moderate depression (10 – 14)*	14	22	
	Moderately severe depression (15 – 19)	-	-	
	Severe depression (20 – 27)*	34	61	
3.	**Level of co-dependency**			
	Mild co-dependency (0 – 24)	-	-	
	Moderate co-dependency (25 – 48)	-	-	
	Severe co-dependency (49 –72)*	15	51	<0.0001
	Very severe co-dependency (73 – 96)*	41	25	
4.	**Level of family burden (overall)**			
	Less burden (0 – 24)	-	-	-------
	More burden (25 – 48)	48	84	
	Level of family burden (domain wise)			
A	**Level of financial burden**			
	Less burden (0 – 6)	1	4	0.653
	More burden (7 – 12)	47	80	
B	**Level of routine family activity disruption**			
	Less burden (0 – 7)	2	0	----------
	More burden (8 – 14)	48	82	
C	**Level of disruption in routine family leisure**			
	Less burden (0 – 4)	8	7	0.163
	More burden (4 – 8)	40	77	
D	**Level of disruption in routine family interaction**			
	Less burden (0 – 3)	10	14	0.640
	More burden (3 – 6)	38	70	
E	**Level of effect on physical health on others**			
	Less burden (0 – 2)	13	24	1.000
	More burden (2 – 4)	35	60	
F	**Level of effect on mental health on others**			
	Less burden (0 – 2)	10	22	0.533
	More burden (2 – 4)	38	62	

A comparison of co-dependency, anxiety, depression, family burden among caregivers of patients with opioid dependence syndrome who are on OST versus those on methadone, was also done [Supplementary table 3].

Patients with opioid dependence syndrome who are on OST, had significantly lower-level burden related to "effect on physical health on others" domain of FBIS in comparison to those on methadone.

Table 3: Assessment of co-dependency, anxiety, depression, family burden among caregivers of patients with opioid dependence syndrome who are on opiod substitution therapy versus those on methadone

S. No	Category	Opioid dependence syndrome who are on OST	Opioid dependence syndrome who are on methadone	Test of significance (p value)
1.	**Level of anxiety**			
	Mild anxiety (0 – 7)	-	-	
	Moderate anxiety (11 – 15)*	14	18	0.399
	Severe anxiety (16 – 21)*	34	66	
2.	**Level of depression**			
	Minimal depression (1 – 4)	-	-	0.956
	Mild depression (5 – 9)*	8	15	
	Moderate depression (10 – 14)*	27	45	
	Moderately severe depression (15 – 19)	-	-	
	Severe depression (20 – 27)*	13	24	
3.	**Level of co-dependency**			
	Mild co-dependency (0 – 24)	-	-	
	Moderate co-dependency (25 – 48)	-	-	
	Severe co-dependency (49 -72)*	24	42	1.000
	Very severe co-dependency (73 – 96)*	24	42	
4.	**Level of family burden (overall)**			
	Less burden (0 – 24)	-	-	-------
	More burden (25 – 48)	48	84	
	Level of bamily burden (domain wise)			
A	**Level of financial burden**			
	Less burden (0 – 6)	0	5	-------
	More burden (7 – 12)	48	79	
B	**Level of routine family activity disruption**			
	Less burden (0 – 7)	0	2	-------
	More burden (8 – 14)	48	82	
C	**Level of disruption in routine family leisure**			
	Less burden (0 – 4)	10	74	1.000
	More burden (4 – 8)	5	43	
D	**Level of disruption in routine family interaction**			
	Less burden (0 – 3)	6	18	0.245
	More burden (3 – 6)	42	66	
E	**Level of effect on physical health on others**			
	Less burden (0 – 2)	24	24	0.0002
	More burden (2 – 4)	13	60	
F	**Level of effect on mental health on others**			
	Less burden (0 – 2)	11	21	0.836
	More burden (2 – 4)	37	63	

DISCUSSION

The current study included patient diagnosed with opioid dependence syndrome carried out over approximately three months, at a tertiary care centre in North India. Patients of other psychiatric illnesses were excluded, as the co-existence of other psychiatric illnesses would have affected the outcome of this study.

Socio-demographic and clinical profile

Out of 132 patients in the study, most patients were males (97.4%). More than 300 hundred registered patients are taking treatment in the de-addiction and opioid substitution centre daily. Most males seek treatment for de-addiction, similar to many other studies in other parts of the country (Sarkar and others, 2013; Sharma and others, 2019).

In this study, most of the patients were Hindus, unemployed, and had no history of other substance misuse (except tobacco) apart from opioids (84.80%), which is similar to study conducted by (Sharma and others, 2019; Pradhan and others, 2012; Ahmad-Abadi and others, 2017). The mean age of onset of opioid use was 24.9± 6.9 years, and commonly had a dependency period of 1-5 years (47.70%). The majority of patients belonged to 28-38 years, similar to an Indian study (Sharma and others,2019). Though most of our subjects came from an urban background, most of them belonged to the lower class to the lower-middle-income group. In general, the demographic and clinical profile of the caregivers was similar to that reported in previous studies (Sarkar and others, 2013, Moore and others,2011, Sharma and others, 2019). The average family monthly income in India is ₹16,000; similarly, in our study, the majority of the caregivers had a family income below ₹10,000. Most of the caregivers were spouses, which was also reported in other Indian studies (Sharma and others, 2019; Pradhan and others, 2012; Ahmad-Abadi and others, 2017; Askian and others, 2018). In India, people often live in a joint family, unlike the western population, and shift to their family members and disrupt their daily activities. This leaves a heavy burden on caregivers, leaving them anxious and depressed (Moore and others, 2011).

Association of caregiver burden, co-dependency, depression, and anxiety

For India and other developing countries, the drug dependence-related family burden is significant because of the common trend of living in joint families. The majority of caregivers in this study had high burden, and a similar result was found in other Indian studies (Mattoo and others, 2013; Choudhary, 2010; Kaur and others, 2018, Shekhawat and others, 2015). Our study found that the caregivers of patients with opioid dependence had a severe burden on all FBIS domains, similar to this study (Li and others, 2013). Higher scores indicate more strain in domains. The effect of mental health had a higher mean score (1.68±0.47) in this study, which was unexpected for studies in which significant financial burdens were reported more among all domains (Choudhary, 2016; Kaur and others, 2018; Shekhawat and others, 2015) it may be due to the high rate of depressive and anxiety symptoms in our study population.

Most of the caregivers in this study had severe co-dependency levels (50%). They had a mean co-dependency score of 72.5 ±4.6 which was observed by many other studies (Bortolon and others, 2016; Panaghi and others, 2016; Abadi-Ahmad, and others, 2017). In a country like India, there is a cultural belief that men should be the family's breadwinner, and probably this would have shifted the responsibility of caring for the sick to the caregivers. This might be the reason why we found a higher level of co-dependency among the females (wives) in our study.

Many research studies find that caregivers were suffering from depression and had a strong correlation with patients' substance abuse behaviour, similar to our study's finding (Pradhan and others, 2012; Marcon and others, 2012). It may be due to differences in the socio-demographic characteristics of the study participants. Most of the patients in this study had a severe level of anxiety (75.6%) and similar results were shown many pieces of research (Soni, Upadhyay, and Jain, 2017; Niazi and others, 2005). This study revealed that the caregiving burden was associated with depressive and anxiety symptoms. The similar findings were consistent with many prior studies that demonstrated that stress in family relationships arises when caregivers provide care for a family member with substance misuse (Li and others, 2013; Soni, Upadhyay and Jain, 2017; Niazi and others, 2005; Pradhan and others, 2012; Marcon and others, 2012). The stress included worry, anger, guilt, shame, financial strain, physical effects of stress, and a diminished quality of life and hopefulness. In this study majority of the caregivers with stress and burden also showed signs of dependency (Mattoo and others, 2013; Choudhary, 2010; Kaur and others, 2018, Shekhawat and others, 2015). This is possible because, in most the families, patients were the sole earning member of the family, and the majority of the caregivers were unemployed (Bortolon and others, 2016; Panaghi and others, 2016, Abadi-Ahmad and others, 2017; Choudhary, 2016; Kaur and others, 2018; Shekhawat and others, 2015).

LIMITATION

There were several limitations to our study. The sample size was small and was recruited purposively from a tertiary care centre; therefore, it was hard to generalise the results to other treatment centres and drug users in the community. The other causes of burden (stressors, life events) have not been evaluated. Finally, all data was collected from a single caregiver, and multiple mediators were not assessed (coping, assessment, expressed feelings, and social support).

The results from this study have shown that the caregiver's scenario surrounding opioid dependents creates unnecessary suffering for them as a result of the effects of substance addiction. Also, all the research variables of the study were significantly correlated with each other. So, these data may be utilised in the clinical settings, where these variables should be diagnosed, and treatment programmes directed toward the caregivers of opioid abuse should include medical and psychological intervention.

CONCLUSIONS AND RECOMMENDATION

Most caregivers of patients with opioid dependence syndrome report severe co-dependency, severe anxiety, moderately severe depression, and higher burden.

A significant association exists between depression, anxiety, co-dependency, and burden among the caregivers of patients with opioid dependence syndrome. There is an urgent need to establish appropriate care and effective treatment interventions for the caregivers to alleviate the impact of anxiety, depression, co-dependency, and burden on them. From the above findings, it is necessary to act on recommendations to alleviate the depressive symptoms, anxiety, burden, and co-dependency among caregivers to ease their psychological pain.

The study needs to be replicated on a large sample to validate and generalise its finding. A comparative study can be conducted on other substance dependence with opioid dependence.

Longitudinal cohort studies can identify the causes of substance dependence and their relationship with the caregivers.

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