



## ATTITUDES TOWARDS BUPRENORPHINE: COMPARISON BETWEEN SERVICE USERS AND NON-USERS

<b>Dr. Rohit Garg</b>	Department of Psychiatry, Government Medical College & Rajindra Hospital, Patiala
<b>Dr. Khushbinder Singh*</b>	Department of Psychiatry, Government Medical College & Hospital, Amritsar*Corresponding Author
<b>Dr. Kriti Anand</b>	Department of Psychiatry, Government Medical College & Rajindra Hospital, Patiala
<b>Dr. B.S. Sidhu</b>	Department of Psychiatry, Government Medical College & Rajindra Hospital, Patiala
<b>Dr. P.D. Garg</b>	Department of Psychiatry, Government Medical College & Hospital, Amritsar

### ABSTRACT

**Introduction:** Buprenorphine is a very effective drug for treatment of patients with opioid dependence. However, negative attitudes towards the drug may hinder patients from entering or retaining in treatment.

**Aims and objectives:** The present study was done to compare the attitudes towards drug of patients taking buprenorphine to those who are not taking it.

**Material and methods:** 200 opioid dependent patients (group 1) taking buprenorphine from opioid substitution therapy centers were compared to 100 patients (group 2) who had never taken the drug but were aware of it. After taking written informed consent, sociodemographic performance, clinical performance and attitudes towards buprenorphine questionnaire (Punjabi translated version) were applied. Appropriate statistical analysis were used.

**Results:** Nearly 60% patients in each group had less than 12 years of formal education, more than half were married and more than 60% were residing in joint families. The mean age was between 30 and 35 years in both the groups. Table 2 shows that patients in the OST group had significantly higher positive attitudes than the other 2 groups on 26 out of 28 items of the attitudes towards buprenorphine questionnaire. Significantly higher number of patients in group 1 endorsed positive attitudes towards the drug and responded that buprenorphine causes benefits to patients, reduces craving and withdrawal, helps to stay away from addiction and does not cause side effects.

**Conclusions:** The actual experience of using buprenorphine significantly alters attitudes towards the drug. Education regarding buprenorphine among out of treatment individuals is of paramount importance to remove myths and misconceptions about the drug. This will help to reduce the gap between patients who require treatment for opioid dependence and who receive it.

**KEYWORDS :** attitudes, buprenorphine, opioid substitution therapy, users

### Introduction

Opioid substitution therapy (OST) with buprenorphine is effective in reducing illicit opiate use, HIV risk behaviors, death from overdose and criminal activity, stress on drug users and their families and improve the physical and mental health of injecting drug users (Rao et al., 2013). In spite evidence of effectiveness of buprenorphine, the use of the drug remains very low in India. The reasons for this are cost of drug, ineffective health services in some areas, strict regulations, and residual scepticism about its value, a lack of in depth knowledge, awareness and education about OST among policymakers, community members, drug users and the health sector (Kermode et al., 2011; Petersen et al., 2013).

Ambivalent and negative attitudes towards buprenorphine are a major reason for many patients not opting for buprenorphine. Negative perceptions towards OST have been found to adversely affect treatment outcomes, enrollment and retention rates among former or current injection drug users (Liu et al., 2013). To impact public health, it is important to increase the percentage of opioid-dependent individuals enrolled in effective drug treatments (Kelly et al., 2012; Schwartz et al., 2008). No Indian study has assessed attitudes of patients towards buprenorphine. Two studies from elsewhere have shown that patients taking buprenorphine have more positive attitudes than those who are not taking it (Kelly et al., 2012; Schwartz et al., 2008). In the present study, for the first time in India, the attitudes of patients taking buprenorphine were compared to those opioid dependent individuals who are not taking buprenorphine.

### Methods:

**Study design and settings:** Cross sectional study conducted at Opioid substitution therapy centres and de-addiction of two medical colleges in Punjab. The sample comprised of two groups of patients. Group 1 comprised of 200 patients (100 from each centre) receiving buprenorphine at the OST centers and not receiving any simultaneous treatment from any other place. Group 2 comprised of 100 consecutive patients visiting the de-addiction OPDs for treatment of opioid dependence syndrome and were not taking buprenorphine (but had heard about the drug). The data was collected in June 2017. Patients were included if they had opioid dependence, were at least 18 years old and willing to participate in the study and give written informed consent. Exclusion criteria were comorbid psychiatric disorder and refusal to give written informed consent.

### Tools

**Sociodemographic and clinical Performance:** a semi structured performance was prepared to record the age, education, occupation, marital status, locality, family type, monthly income, current substance use (within the past 1 month), lifetime substance use (for at least 1 year during the lifetime), duration of buprenorphine use, dose of buprenorphine, duration between last injection and assessment.

**Attitudes towards buprenorphine questionnaire:** the attitudes towards buprenorphine questionnaire (Schwartz et al., 2008) was translated in to Punjabi using standard procedure after taking written consent from the authors. It is a 28 item scale having good

internal consistency. Each item is rated on a likert type scale from 1 – 5 (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree). Higher score on the individual items and the total scale means more positive attitudes. The negatively worded items are reverse scored. The items measure attitudes towards buprenorphine in terms of potential helpfulness, aid to behavior change, side effects of buprenorphine, safety and efficacy and the perceived purpose of buprenorphine administration. In addition, an item to assess buprenorphine abuse and diversion as perceived by patients is there.

**Study protocol**

After the scale was finalized, all the consecutive patients coming to the OPD were screened to assess whether they fulfilled inclusion and exclusion criteria. Patients fulfilling criteria were invited to participate in the study. The purpose and design of the study were explained to the participants, written informed consent for the study was obtained and the rating instruments were applied. Approximately 30 – 40 minutes were spent on the assessment of each patient.

**Ethical considerations**

All the ethical guidelines were adhered to. The study was approved by the ethics committee of the institute. Written informed consent was taken from all the participants. The Indian Council of Medical Research ethical guidelines for biomedical research on human participants were adhered to.

**Statistical analysis:**

Analysis was conducted using IBM SPSS STATISTICS (version 22.0). Continuous data, (QOL and other variables) assumed to be normally distributed, was written as mean and standard deviation. When data was skewed, it was written in the form of median and interquartile range, as per the requirement. Pearson correlation was used to calculate correlation between attitudes towards buprenorphine questionnaire with different variables. Cronbach's alpha was used to assess the reliability and internal consistency of the instrument. All the statistical tests were two-sided and were performed at a significance level of  $\alpha=.05$ .

**Results**

Table 1 shows the sociodemographic data and the attitudes to buprenorphine questionnaire scores of the 2 groups. The groups were similar to each other regarding years of formal education, marital status, family type, age and monthly income. In each group, nearly 60% patients in each group had less than 12 years of formal education, more than half were married and more than 60% were residing in joint families. The mean age was between 30 and 35 years in both the groups. However, majority (76%) of patient in group 1 came from urban areas and nearly 60% patients in group 2 came from rural areas (p value.  $.000^{***}$ ).

**Table 1: Sociodemographic variables of the groups**

Variable	Category	Group 1, n = 200	Group 2, n = 100	P
Education (years of formal)	Illiterate n (%)	26 (13)	10 (10)	.384
	< 12 n (%)	136 (68)	61 (61)	
	> 12 n (%)	38 (19)	29 (29)	
Marital Status	Single n (%)	78 (39)	33 (33)	.052
	Married n (%)	111 (55.5)	66 (66)	
	Divorced n (%)	11 (5.5)	1 (1)	
Locality	Rural n (%)	48 (24)	64 (64)	.000***
	Urban n (%)	152 (76)	36 (36)	
Family Type	Nuclear n (%)	61 (30.5)	31 (31)	.437
	Joint n (%)	139 (69.5)	69 (69)	
Age (years)		34.44 ± 10.113	32.33 ± 7.952	.076
Monthly Income (INR)		10037 ± 9571.342	10781 ± 13301.711	.413

Attitudes to BPN Questionnaire Score (Mean ± sd)	100.69 ± 16.304	85.34 ± 13.835	.000***
Aid to Behavior Change Subscale (Mean ± sd)	34.9600 ± 5.59977	28.9844 ± 7.02714	.000***

Attitudes to Buprenorphine Questionnaire Score (table 1): The score on the Punjabi translated version of the attitudes to buprenorphine questionnaire was significantly different between the groups. In group 1, patients having less than 12 years of formal education had significantly lower scores than persons with higher education and those who were illiterate. Married persons had significantly higher score than single and divorced. In group 1, the duration between last injection of opiates and current assessment was  $21.99 \pm 15.852$  months. The duration of buprenorphine use was  $26.07 \pm 14.556$  months. The mean current dose of buprenorphine was  $6.38 \pm 3.252$  mg/day. Out of 200 patients in group 1, 25 were HIV positive (12.5%). In group, age was significantly positively correlated with duration between last injection and current assessment (pearson correlation coefficient 0.257; p .000\*\*\*), duration of buprenorphine use (pearson correlation coefficient 0.200; p .005\*\*\*), and attitudes to buprenorphine questionnaire score (pearson correlation coefficient 0.238; p .000\*\*\*). The duration of buprenorphine use was significantly positively correlated with duration between last injection and current assessment (pearson correlation coefficient 0.723; p .000\*\*\*). Duration of buprenorphine use was significantly negatively correlated with dose of buprenorphine (pearson correlation coefficient -0.148; .037\*). Age was not significantly correlated to attitudes to buprenorphine questionnaire in groups 2 and 3.

Current substance use (during the past 1 month): In group 1, 13.5% patients had used injectable in the month prior to enrolment in the study. Current use was highest for alcohol at 31.5%. 11% patients had used an opioid in the past 1 month, 10% had used cannabis and 9% had used benzodiazepines. In group 2, nearly 75% patients were users of opioids in group 2. 12.5% were current users of injectables. The current usage of alcohol, cannabis and benzodiazepines was 25%, 4.7% and 10.9% respectively.

Lifetime substance use (use for at least 1 year in the past): In group 1, all the patients in the OST group had used injectables in the past which is a necessary criteria for starting OST. More than 80% had used injectables for at least 1 year. Nearly 75% patients had used opioids in the past either before starting injections or along with it. 23% had used smack, 17% had used dextropropoxyphene, 12.5% bhukki, 11.5% afeem, 8% tablet lomitol and 4.5% cough syrups. 22% had used alcohol in the past for at least 1 year and 6% had been using benzodiazepines. In group 2, 14.1% patients in the group 2 had used injectables for at least 1 year in their lifetime and more than 90% had used opioids in one form or another. Lifetime use of alcohol in this group was 34.4%. It was 7.8% for benzodiazepines and 6.3% for cannabis.

**Table 2: Comparison between the two groups on the Attitudes to Buprenorphine Questionnaire Items**

	Group	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	P
BPN takes away the craving for heroin	1	2	0.5	1	16.6	79.9	.000*
	2	0	10.9	4.7	51.6	32.8	**

BPN allows ex addicts to lead a normal life	1	2	5	3	30.2	59.8	.000*
	2	6.3	17.2	15.6	31.3	29.7	**
With BPN, you can eventually get off drugs if you want to	1	4	2.5	1.5	32.2	59.8	.000*
	2	12.5	26.6	6.3	26.6	28.1	**
BPN has done a lot more good to people than bad	1	4.5	3.5	2.5	21.6	67.8	.000*
	2	6.3	15.6	7.8	39.1	31.3	**
A person is better off taking BPN than heroin	1	5.5	4	1.5	22.6	66.3	.000*
	2	7.8	21.9	10.9	26.6	32.8	**
BPN has proven to be the best way of quitting heroin	1	3	2	2.5	21.1	71.4	.000*
	2	3.1	17.2	10.9	37.5	31.3	**
In the long run, BPN is more helpful than harmful	1	9	15.1	4.5	27.1	44.2	.000*
	2	7.8	31.3	21.9	21.9	17.2	**
Heroin addiction is worse than BPN addiction	1	5	6	2.5	20.1	66.3	.000*
	2	7.8	10.9	6.3	37.5	37.5	**
People's reflexes and coordination are not good when they are taking BPN	1	43.2	25.1	3.5	15.6	12.6	.000*
	2	12.5	32.8	10.9	31.3	12.5	**
BPN decreases the sex drive for those use it	1	38.7	21.1	7.5	20.1	12.6	.000*
	2	6.3	28.1	39.1	14.1	12.5	**
BPN can rot your bones	1	46.2	21.1	15.1	10.6	7.0	.000*
	2	7.8	32.8	34.4	14.1	10.9	**
Its harder to concentrate when you are taking BPN	1	40.2	24.1	5.5	19.1	11.1	.000*
	2	4.7	26.6	25	28.1	15.6	**

BPN is as dangerous as heroin	1	45.2	26.1	9	12.6	7.0	.000*
	2	9.4	42.2	9.4	17.2	21.9	**
Buprenorphine can make you sleepy	1	44.2	28.6	4.5	14.6	8.0	.000*
	2	12.5	7.8	18.8	35.9	25	**
Buprenorphine is a safe drug	1	2	4.5	2.5	27.1	44.2	.000*
	2	6.3	23.4	10.9	37.5	21.9	**
Taking BPN is only replacing one addiction with another	1	12.1	46.2	5.5	26.6	9.5	.000*
	2	14.1	18.8	3.1	42.2	21.9	**
BPN in a treatment program gives you a high just like heroin	1	25.1	27.6	4.5	28.6	14.1	.039*
	2	6.3	28.1	9.4	40.6	15.6	*
Once you are on BPN, you have to keep taking it	1	3.5	15.1	2	32.7	46.7	.000*
	2	6.3	23.4	6.3	34.4	28.1	**
Its harder to get off BPN than it is to get off heroin	1	31.2	28.6	5	22.6	12.6	.000*
	2	14.1	39.1	26.6	9.4	10.9	**
The sooner a person stops taking BPN, the better	1	5	8.5	3.5	46.2	36.7	.216
	2	1.6	4.7	6.3	53.1	34.4	
BPN is a crutch	1	4.5	8	3	68.8	15.6	.000*
	2	7.8	10.9	15.6	40.6	25	**
The worst thing about BPN is having to take it everyday	1	7.5	12.1	1	29.6	49.7	.049*
	2	9.4	14.1	3.1	35.9	37.5	
A reason why BPN has caused problems is because people can get it too easily	1	6	59.3	4.5	17.6	12.6	.000*
	2	4.7	34.4	14.1	28.1	18.8	**
BPN is more of a problem than heroin ever was	1	44.7	29.1	5	13.6	7.5	.000*
	2	15.6	39.1	21.9	15.6	7.8	**

Buprenorphine abuse is happening more and more	1	29.1	27.1	9	19.1	15.6	.000*
	2	3.1	17.2	3.1	43.8	32.8	**
BPN has been used more to stop crime than to help addicts	1	5	15.6	5.5	39.2	34.7	.167
	2	4.7	28.1	9.4	32.8	25	
BPN programs sometimes acts as agents for police	1	57.8	14.1	7.5	13.6	7.0	.000*
	2	14.1	42.2	20.3	15.6	7.8	**
BPN represents an oppression of an African American minority by a white majority	1	60.3	23.6	8.5	3.5	4.0	.000*
	2	18.8	31.3	48.4	1.6	0	**

Table 2 shows that patients in the OST group had significantly higher positive attitudes than the other 2 groups on 26 out of 28 items of the attitudes towards buprenorphine questionnaire. Significantly higher number of patients endorsed that buprenorphine causes benefits to patients, reduces craving and withdrawal, helps to stay away from addiction and does not cause side effects. There were 2 items on the attitudes towards buprenorphine questionnaire on which the patients in the group 1 did not differ significantly from the patients who were not taking buprenorphine. In both the groups, more than 50% patients agreed that buprenorphine has been used more to stop crimes than to help addicts and more than 80% agreed that the sooner a person stops taking buprenorphine, the better.

### Discussion

To our knowledge, this is the first Indian study to compare attitudes towards buprenorphine between patients taking the drug and those not taking it. The study has used a reliable and well standardized questionnaire in the local language. The value of cronbach's alpha in the present sample suggests that the scale is reliable in our population. Two previous studies using same scale have found internal consistency  $\alpha$  value of 0.76 (Schwartz et al., 2008) and 0.87 (Kelly et al., 2012). This implies that the scale reliability taps the attitudes towards and experience with buprenorphine among patients coming from different social and cultural backgrounds.

It is highly encouraging that most patients taking buprenorphine had positive attitudes and experiences with the therapy. In previous studies, majority of patients who had taken buprenorphine or knew someone who had taken buprenorphine expressed positive attitudes towards the drug (Shah et al., 2013), were satisfied with buprenorphine (Egan et al., 2011; Sohler et al., 2013). Further, the attitudes among patients taking buprenorphine were more positive as compared to patients not taking buprenorphine in the present study. Previous studies have reported that participants entering buprenorphine therapy have more positive attitudes than out of treatment participants (Kelly et al., 2012). This implies that actual experience of using buprenorphine can significantly change attitude of patients to positive. These patients can be important source of advertising the drug to bring more out of treatment

patients in to the treatment net. Since patients' views on treatment can greatly influence their medical compliance and treatment outcomes, patients' concerns with the medications should be taken care of with education. An effort should be made to understand patients' thinking and clarify any prevailing myths and misconceptions regarding the drug (Schwartz et al., 2008). Treatment programs should offer a choice of medications when possible to new patients, and future comparative effectiveness research should incorporate patient preferences into clinical trials. Higher number of patients in the OST group endorsed the view that buprenorphine does not cause much side effects as compared to patients in the other 2 groups. This clearly reflects the misconceptions that patients having opioid dependence keep regarding buprenorphine. As they take this drug and realize its benefits and safety, their attitudes become more positive. Duration between last injection and current assessment was significantly positively correlated with attitudes to buprenorphine. This suggests that with lapse of time, the attitudes were becoming more favorable. A previous study has also shown that patients who have longer duration of buprenorphine intake show more positive attitudes (Prakash and Balhara, 2016).

The findings of the study have some important implications for mental health professionals and policy makers. There is an urgent need to educate out of treatment opioid dependent individuals regarding buprenorphine and other treatment alternatives. Looking at the wide gap between number of patients who might benefit from buprenorphine and those who actually receive it, education regarding myths and misconceptions related to buprenorphine are of paramount importance. Attitudes towards a particular medication and experience with it may profoundly shape retention rates and outcome with therapy. This information can guide the development of interventions and policies to improve access to buprenorphine treatment, and ultimately improve individual and public health outcomes.

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