

# Preferred Modes of Opioids Abuse and their Psycho-Social Determinants among Male Psychiatric Out-Patients Attending a Tertiary Care Facility

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## ABSTRACT

**BACKGROUND:** It is estimated that during last 12 months 6.7 million adults used drug. Route of administration of opioids has important consequences on user's health outcomes as well as risk of dependence and susceptibility to infection. In particular injection drug users are at heightened risk for HIV and hepatitis C infection and also risk of over dose. The factors that may influence opioids route or change of route administrations include unemployment, insecure source of income, homelessness, school dropout and early start of substance use.

**OBJECTIVES:** To determine the frequency of preferred mode of opioids administration by drug abusers and the associated socio-demographic factors with mode of drug administration.

**METHODOLOGY:** This cross-sectional study was conducted at out-patient facilities of Sir Cowasji Jahangir Institute of Psychiatry (CJIP) Hospital, Hyderabad during Jan-June 2016. Using non-probability consecutive sampling 200 male patients aged between 18-60 years, with history of using opioids for at least last 6 months, were recruited.

**RESULTS:** Median age of the participants was  $32 \pm 9.82$  years ranging between 18 to 60 years. The commonest method of opioids administration was inhalation (n=150, 75%) followed by sniffing (n=25, 12.5%) and oral (n=15, 7.5%). The least reported (n=5, 2.5%) route was smoking. Socio-demographic risk factor like not formally educated (87.5%), employed (75%), married (69.23%) and joint family systems (65.38%) were associated with inhalation as a preferred method of opioids use. Among employed participants, n=80 (66.66%) were married and used inhalation as a frequent method of opioids use (p=0.001).

**CONCLUSION:** Inhalation was the most common route of opioids use, being employed and married is associated with opioids use by inhalation (p-value 0.001).

**KEY WORDS:** Opioids, Preferred route, Risk factor, Inhalation.

*This article may be cited as:* Naqvi SQH, Ahmed N, Channa S, Jaffery MH, Ansari MA. Preferred Modes of Opioids Abuse and their Psycho-Social Determinants among Male Psychiatric Out-Patients Attending a Tertiary Care Facility. J Liaquat Uni Med Health Sci. 2017;16 (04):213-7. doi: 10.22442/jlumhs.171640536

## INTRODUCTION

Pakistan's population is estimated to be living on less than US \$ 1.25 a day income<sup>1</sup>, and our population aged 15 to 64 suffer from the devastating consequences of substance abuse<sup>1</sup>. It is estimated that during last 12 months, 6 percent or 6.7 million adults used drug, however treatment facility was available for less than 30000 drug users in a year<sup>1</sup>. Route of administration of opioids has important consequences on user's health outcomes as well as risk of dependence and susceptibility to infection<sup>2</sup>. Injection drug users are at heightened risk for HIV and hepatitis C infection<sup>3-4</sup> and also risk of over dose<sup>5</sup>. Factors associated to influence route of drug used include unemployment, insecure source of income,

homelessness, school dropout and early onset of substance use<sup>6-12</sup>. Among recent user of heroine, the time interval between first heroin use by smoking and switched to start injection of heroin is significantly less, a fact that increases the risk for the exposure to HIV earlier after start of heroin<sup>13</sup>.

In Spain, among drug user, the preferred route of administration is heroin injection<sup>14</sup>. Among those who use injection the prevalence of HCV is 71%<sup>15</sup>, in contrast the intranasal use carries low risk of HCV transmission<sup>15</sup>. Heroin has destructive orofacial effects in drug abuse<sup>16</sup>. Among heroin abusers the development of spongiform leukoencephalopathy although rare but may lead to death<sup>17</sup>. Co-morbid psychiatric disorders are common in heroin addicts and routes of drug administration affect their

severity<sup>18</sup>. Heroin smokers and inhalers had more craving and desire when they expose to cigarette smoking cues in compared to heroin injection<sup>19</sup>.

The data regarding prevalence of different route of administration used by drug abusers' is not available in our country; consequently, it is hard to estimate the risk of associated medical complications among drug abuser and appropriate allocation of health budget for the purpose.

Therefore this study aims to identify preferred mode of drug abuse and their respective frequency so that risk assessment for medical complication can be predictable.

**OBJECTIVES**

To determine the frequency of preferred mode of drug administration by drug abusers and the socio demographic factors associated with preferred mode of drug abuse.

**METHODOLOGY**

A Cross Sectional Study was conducted at the Psychiatric out-patient facilities of Sir Cowasji Jahangir Institute of Psychiatry (CJIP) Hospital, Hyderabad from 1<sup>st</sup> January 2016 to 30<sup>th</sup> June 2016. Total of 200 patients were recruited in the study through OPD by Non-probability consecutive sampling. Prior approval was sought from the ethical review committee of Sir CJIP. Written informed consent was obtained from eligible participants and it was made explicit that non-participation in this would not result in any loss or benefit. Data was collected on semi structured proforma by collecting the relevant information from the study participants/parents. Data collection tools used are Readiness to Change Questionnaire<sup>20</sup>, DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders)<sup>21</sup>. Data analyzed by using SPSS-version-18(PASW), with the help of biostatistician. Frequency and percentage computed for categorical variables like gender, level of education, marital status, occupation, family type, catchment area, route of abuse. Mean standard deviation is computed for numerical variables. Stratification with respect to age duration of illness and gender has been done. Post stratification chi square test applied.  $P \leq 0.05$  has been taken as significant.

**Inclusion criteria**

- Patients using opioid more than 6 months.
- Male gender
- Patient aged 18-60years, attending psychiatric clinic (OPD) at Sir CJIP were included in the study.

**Exclusion criteria**

- Cases with head injury.
- Cases who deny/withdraw consent.

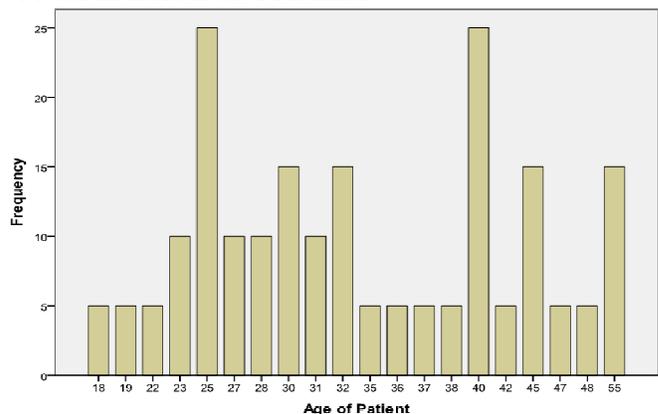
**RESULTS**

A total of 200 male participants were enrolled during the specified time. The median age of the participants was  $32 \pm 9.82$  years with an age range from 18 to 60 years Figure I. Two peaks of age were identified 25 and 40 in which opioids use was seen commonly. Descriptive characteristics of the sample (n=200) are tabulated in Table I. For mode of opioids administration, inhalation was primary method in n=150 (75%) participants, followed by sniffing n=25 (12.5%), oral (7.5%) and least reported was (2.5%) smoking. Those not formally educated were 40% (n=80), those educated up to primary level were 42.5% (n=85), 15% (n=30) were educated to secondary level, while those achieved bachelor degree were 2.5% (n=5), among those who were not formally educated 87.5% were using inhalation as a mode of opioids administration. Most of the participants were married (65%), while single and divorced were 32.5% and 2.5% respectively. Among married individuals' majority (69.23%) were using inhalation as common mode of opioids administration whereas 11.53% were using oral and sniffing as a route of opioid administration. Among 200 participants 80% were employed and 20% were unemployed. Among those employed participants 66.66% participants were married and using inhalation as frequent methods (p-value 0.001) of opioid administration as shown in Table II.

Majority of the participants belonged to urban areas n=170 (85%) and n=30 (15%) belonged to rural area. Most common route of opioids administration in both urban and rural is inhalation. Participants from urban n=125 (73.52%) and n=25 (83.33%) from rural used inhalation as a common method of opioids administration.

Considering family structure; n=130 (65%) of the participants were from joint family system and n=70 (35%) were from nuclear family. Participants belonging to joint family n=85 (65.38%) used inhalation as a frequent method of opioids.

**FIGURE I: AGE OF PATIENT**



**TABLE I:**

| Descriptive Characteristics   | Urban n (%) | Rural n (%) | Total n (%) |
|-------------------------------|-------------|-------------|-------------|
| MALE                          | 170 (85%)   | 30 (15%)    | 200         |
| <b>Marital Status</b>         |             |             |             |
| Single                        | 55(84.61%)  | 10(15.38%)  | 65          |
| Married                       | 110(84.61%) | 20(15.38%)  | 130         |
| Divorce                       | 5(100%)     | 0           | 5           |
| <b>Occupation</b>             |             |             |             |
| Employed                      | 145(90.6%)  | 15(9.3%)    | 160         |
| Unemployed                    | 25(62.5)    | 15(37.5%)   | 40          |
| <b>Route of Substance Use</b> |             |             |             |
| Oral                          | 10(66.66)   | 5(33.33%)   | 15          |
| Inhalation                    | 125(83.33%) | 25(16.66%)  | 150         |
| Smoke                         | 5(100%)     | 0           | 5           |
| Sniff                         | 25(100%)    | 0           | 25          |
| Intravenous                   | 5(100%)     | 0           | 5           |

**TABLE II:**

| Route of substance use | Marital status | Occupation of patient |            | P-Value |
|------------------------|----------------|-----------------------|------------|---------|
|                        |                | Unemployed            | Employed   |         |
| Oral                   | Married        | 5                     | 10         | -       |
| Inhalation             | Single         | 20                    | 35         | -       |
|                        | Married        | 10                    | 80         | 0.001   |
|                        | Divorce        | 0                     | 5          | -       |
| Smoke                  | Married        | 0                     | 5          | -       |
| Sniff                  | Single         | 5                     | 5          | -       |
|                        | Married        | 0                     | 15         | 0.002   |
| Intravenous            | Married        |                       | 5          | -       |
| <b>Total</b>           |                | <b>40</b>             | <b>160</b> |         |

**DISCUSSION**

The current study examined the mode of opioids use in male patients with respect to various Sociodemographic factors. The median age of the participants was 32 years ±9.82 years, ranging from 18 to 60 years. Two peaks ages were identified 25 and 40 in which opioids use seen commonly and 130 (65%) participants were married. The relation between age and route of substance abuse is statistically significant (P=0.025)<sup>21</sup>.

Our study found that inhalation was the most common (75%) route of opioids use followed by sniffing (12.5%), and oral (7.5%). The least reported (2.5%) mode was smoking. Young AM et al found different

preferred route of administration by rural/urban status. Among urban participants, oral (77.2%) was the most common route of administration. Among rural participants, the preferred route of administration was snorting (74.3%)<sup>22</sup>. Development of dependence on opioids has also been the subject of particular attention, the development of heroin-smoking and then 'chasing the dragon', move from a traditionally through heroin smoking to heroin injecting<sup>2</sup>. Similarly, participants from current study started opioid use from smoking then with time they convert on inhalation to obtain desirable effects. Inhalation and intravenous route is more dependable then others route of administration<sup>2</sup>.

In addition, various personal and social consequences seen more frequently with use of the drug by an alternative route<sup>2</sup>, like in our study from married participants 69.23% using inhalation as frequent method, whereas 11.53% utilize oral and sniffing. From those Participants who are employed and married, 66.66% (p-value = 0.001) used inhalation as frequent method of opioids use. Personal and social consequences significantly affect the route of opioids use. Dertadian G et al<sup>23</sup> identified that social and structural factors in opioids user had significant affect on quantity and route of opioids use, factors like stable housing and family relationships, disposable income and close social networks associated with oral use and low dose. In fact, our study finding also prove that participants from joint family system use lower dose of opioids (53.07%) (p-value = 0.001), in contrast participants from nuclear family uses higher doses of opioids (71.4%) (p-value = 0.001). Oral users were coming from affluent and urban areas in contrast intravenous users come from rural areas<sup>23</sup>. Our study also supports this notion that oral opioids users are mostly from urban areas and they are married. Oral user reports few social and health consequences in contrast intravenous report adverse social consequences like over dose, viral illness and infections<sup>23</sup>.

**CONCLUSION**

Inhalation was the most common route of opioids use, being employed and married is associated with opioids use by inhalation (p-value 0.001).

**REFERENCES**

1. Narcotics Control Division, Government of Pakistan. UNODC survey report 2013;P.3. Available from <https://www.unodc.org/ documents/>

- pakistan/ Survey\_Report\_Final\_2013.pdf
2. Strang J, Bearn J, Farrell M, Finch E, Gossop M, Griffiths P et al. Route of drug use and its implications for drug effect, risk of dependence and health consequences. *Drug Alcohol Rev.* 1998;17(2):197–211.
  3. Xia X, Luo J, Bai J, Yu R. Epidemiology of hepatitis C virus infection among injection drug users in China: Systematic review and meta-analysis. *Public Health.* 2008;122(10):990–1003. doi: 10.1016/j.puhe.2008.01.014
  4. Alter MJ. Prevention of spread of hepatitis C. *Hepatology.* 2002; 36(5 Suppl 1):S93–8.
  5. Gossop M, Griffiths P, Powis B, Williamson S, Strang J. Frequency of non-fatal heroin overdose: Survey of heroin users recruited in non-clinical settings. *BMJ.* 1996; 313(7054):402.
  6. Neaigus A, Miller M, Friedman SR, Hagen DL, Sifaneck SJ, Idefonso G, et al. Potential risk factors for the transition to injecting among non-injecting heroin users: a comparison of former injectors and never injection. *Addiction.* 2001; 96(6):847–60.
  7. Abelson J, Treloar C, Crawford J, Kippax S, van Beek I, Howard J. Some characteristics of early-onset injection drug users prior to and at the time of their first injection. *Addiction.* 2006;101(4):548–55.
  8. Roy E, Haley N, Leclerc P, Cédras L, Blais L, Boivin JF. Drug injection among street youths in Montreal: Predictors of initiation. *J Urban Health.* 2003;80(1):92–105.
  9. Neaigus A, Gyarmathy A, Miller M, Frajzyngier VM, Friedman SR, des Jarlais DC. Transitions to Injecting Drug Use Among Noninjecting Heroin Users: social network influence and individual susceptibility. *J Acquir Immune Defic Syndr.* 2006;41(4):493–503.
  10. Fischer B, Manzoni P, Rehm J. Comparing Injecting and Non-Injecting Illicit Opioid Users in a Multisite Canadian Sample (OPICAN Cohort). *Eur Addict Res.* 2006;12:230–239.
  11. Fuller CM, Vlahov D, Ompad DC, Shah N, Arria A, Strathdee SA. High-risk behaviors associated with transition from illicit non-injection to injection drug use among adolescent and young adult drug users: a case-control study. *Drug and Alcohol Dependence.* 2002;66:189-98. doi: 10.1016/S0376-8716(01)00200-9.
  12. Bravo MJ, Barrio G, de la Fuente L, Royuela L, Domingo L, Silva T. Reasons for selecting an initial route of heroin administration and for subsequent transitions during a severe HIV epidemic. *Addiction.* 2003;98(6):749–60.
  13. Clatts MC, Goldsamt LA, Giang le M, Colón-López V. Accelerated transition to injection among male heroin initiates in Hanoi, Vietnam: implications for early harm reduction interventions. *J Community Health.* 2011 Dec;36(6):999-1003. doi: 10.1007/s10900-011-9400-8.
  14. Sánchez-Niubò A, Aalen OO, Domingo-Salvany A, Amundsen EJ, Fortiana J, Røysland K. A multi-state model to estimate incidence of heroin use. *BMC Med Res Methodol.* 2013; 13:4. doi: 10.1186/1471-2288-13-4.
  15. Des Jarlais DC, Hagan H, Arasteh K, McKnight C, Semaan S, Perlman DC. Can intranasal drug use reduce HCV infection among injecting drug users? *Drug Alcohol Depend.* 2011; 119(3):201-6. doi: 10.1016/j.drugalcdep.2011.06.020.
  16. Peyrière H, Léglise Y, Rousseau A, Cartier C, Gibaja V, Galland P. Necrosis of the intranasal structures and soft palate as a result of heroin snorting: a case series. *Subst Abus.* 2013; 34(4):409-14. doi: 10.1080/08897077.2013.781565.
  17. Bach AG, Jordan B, Wegener NA, Rusner C, Kornhuber M, Abbas J, et al. Heroin spongiform leukoencephalopathy (HSLE). *Clin Neuroradiol.* 2012; 22(4):345-9.
  18. Wang QL, Liu ZM. Characteristics of psychopathology and the relationship between routes of drug administration and psychiatric symptoms in heroin addicts. *Subst Abuse.* 2012; 33(2):130-7. doi: 10.1080/08897077.2011.630945.
  19. Liu S, Zhou W, Zhang J, Wang Q, Xu J, Gui D. Differences in cigarette smoking behaviors among heroin inhalers versus heroin injectors. *Nicotine Tob Res.* 2011; 13(11):1023-8. doi: 10.1093/ntr/ntr115.
  20. Rollnick S, Heather N, Gold R, Hall W. Development of a short 'readiness to change' questionnaire for use in brief opportunistic interventions among excessive drinkers. *Br J Addict* 1992; 87(5):743-54.
  21. Asayesh H, Jahahgir F, Qorbani M, Badeleh MT, Rezapour A, Soleimani MA, et al. Substance abuse and correlation between of route of administration and age factors in substance abuser. *JGBFNM.* 2013; 9:82-9.
  22. Young AM, Havens JR, Leukefeld CG. Route of administration for illicit prescription opioids: a

comparison of rural and urban drug users. Harm Reduct J. 2010; 7:24. doi: 10.1186/1477-7517-7-24

23. Dertadian G, Iversen J, Dixon TC, Sotiropoulos K, Maher L. Pharmaceutical opioid use among

oral and intravenous users in Australia: A qualitative comparative study. Int J Drug Policy. 2017 Mar; 41:51-58. doi: 10.1016/j.drugpo.2016.12.007.



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