Prevalence and Determinants of Substance Abuse Among Slum Dwellers in Islamabad- Pakistan

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ABSTRACT

Background: The slums are illegal settlements and are always left out in health surveys. However, studies around the world show that substance or drug abuse is higher among slum dwellers and may have different patterns and determinants which need to be studied in order to frame targeted programs and policies. The present study was aimed at estimating the magnitude as well as determinants of substance/drug abuse among slum dwellers in Islamabad, the capital city of Pakistan.

Methodology: This community-based cross-sectional study was conducted among the residents of slums/nomadic settlements of Islamabad. A total of 207 statistically calculated sample size comprised of adults from both genders aged 15 years and above, consenting to participate from the randomly selected 9 clusters in Islamabad was needed for the study. From each cluster, 23 households, and from each household one individual was randomly selected for estimating the prevalence. All those who were abusing substances were counted as cases and others as controls for case-control analysis. A structured questionnaire was used to gather information on demographics, trends, types of substances abused, risk factors for getting engaged in substance abuse, whether they had tried to quit at any stage and what difficulties they faced when trying to quit. Results were entered and analyzed using Epi-info version 7.2.

Results: A total of 204 participants were enrolled in this study. Among these 68 (33%) were substance or drug abusers. For the case-control study, substance/drug users were considered as cases 68 and rest as controls. Bivariate analysis of the risk factors indicated that easy of availability of drugs in slum areas (OR: 20.3, p= 0.000); exposure to tobacco smoking (OR: 8.8, p= 0.000); and being a working child (OR: 6.0, p= 0.000) were the strong predictors of high substance abuse. Education (OR: 0.2, p= 0.000) and living with own parents during childhood (OR: 0.7 p= 0.2) had protective effects against substance abuse.

Conclusion and Implications for Translation: The study concludes that the following were the determinants of substance/drug abuse among the slum dwellers in the study: easy availability due to unregulated sales of drugs, high rate of tobacco consumption, poverty, low level of literacy, and being a working-child. Specific policies and plans focused on law enforcement for curbing the illegal drug sales and reduction of child labor along with the provision of education should be devised and implemented to help these neglected communities and modify the determinants.

Key words: • Substance abuse • Drug abuse • Slum dwellers • Case-control • Islamabad • Pakistan

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1. Introduction

Substance abuse is one of the preventable causes of morbidity and mortality and receives a lot of unacceptance among different cultures. Substance abuse in Pakistan is one of the major causes of concern that affects almost all segments of society. According to the country report, in 2013, an estimated 6% or 6.4 million adults in Pakistan were abusing drugs or substances.\(^3\)

It not only has devastating effects on the physical and psychological wellbeing but also has adverse effects on manpower and economic growth of the country. Substance abuse particularly heroin abuse is spreading at a high rate especially among youth that are between the ages of 15 and 39 years.\(^3\) Pakistan has extensively been exposed to illegal opium trafficking and abuse especially the emergence of methamphetamine use.\(^3\) Cannabis use is highest among the age group of 30 to 34-year old individuals and heroin was the highest among 35 to 39 years old.\(^4\)

According to a study by Khalily\(^5\) on developing a coordinated response to drug abuse in Pakistan, the average age of initiation of drug use is 18 years and drugs are more prevalent among the lower and lower-middle classes of the society in some areas of the country.\(^5\) Cannabis was found to be the most commonly used drug in Pakistan effecting 3.6 percent of the adult population.\(^5\) Opiates are used by almost one percent of overall drugs users.

The increasing point of concern is the high prevalence of non-medical use of prescription drugs nationwide, particularly amongst women. Among the addicts, women have the higher prevalence of drug use when compared to men in Pakistan. Almost all women who reveal they used drugs resort to misusing opioid-based painkillers, and to a lesser extent tranquilizers and sedatives, which are readily available in pharmacies.\(^5\) Alcohol, cocaine, hallucinogens, heroin, inhalants, ketamine, marijuana (Cannabis/bang), methamphetamine (white crystalline powder), prescription opioids, prescription Sedatives (Tranquilizers, Depressants) steroids (Anabolic), tobacco, nicotine, niswar are reported substances that are abused.

The situation is of concern because there is a high prevalence of Hepatitis B and C, which is due to injection drug use. As indicated by the same report, the number of people who inject drugs is estimated to be 4.3(0.4%) million across the country.\(^3\) The factors responsible for the expanding drugs in Pakistan that included the easy accessibility of drugs at very low prices, unemployment, economic frustration, low education, lack of drug education within the family and in educational institutions, peer pressure and negligence of parents.\(^6,7\)

Pakistan is situated in the northwestern part of the south Asian subcontinent, comprising a total land area of 796,096 square kilometers. Administratively, Pakistan has four provinces naming Punjab, Sindh, Khyber Pakhtunkhwa and Baluchistan along with the Federally Administrative Tribal Areas (FATA) and the Gilgit Baltistan region.\(^8\) According to 2017 census report, Pakistan has a total population of almost 207 million.\(^9\) Pakistan is an agricultural country, and more than 70% of the population used to live in rural areas but since the last few decades, the country is facing rapid urbanization. The share of urban population was 28.3% in 1981 which rose to 32.5% during 1998 and 37.9 percent during 2017 in Pakistan.\(^10\) High urbanization trends arise mainly because of poor agricultural policies by the government, inadequate employment avenues, and low quality of life in rural areas.\(^11\)

Rapid urbanization has generated some public health issues due to limited urban infrastructure and housing facilities in the country. People from low socioeconomic class are unable to build appropriate shelters in the large cities. Consequently, forced to build squatter housing settlements and these squatter settlements are called slums. According to Encyclopedia of Britannica, a slum is defined as “a residential area that is physically and socially deteriorated and where satisfactory family life is impossible”.\(^12\) Poor housing is the main index of slum populations which includes bad dwellings, poor infrastructure, absence of family privacy and no space for recreational facilities.\(^13\) In addition to these, poor literacy, unemployment, poverty, poor health and poor sanitation are the common features of the people living in these slums.\(^13\) In most
Substance Abuse Among Slum Dwellers in Pakistan

Though the living conditions, health facilities, and health services are not optimal in general population, yet they are far superior compared to those in the slums because they have better housing, employment, education and health services. As the settlements are illegal and temporary so they are unable to become a focus when it comes to facilitation in terms of infrastructure, facilities including health and education and more so in terms of law and regulation enforcement. All these factors make the slum dwellers “underserved population” and thus vulnerable. Growing number of slum areas in Pakistan is a major issue owing to multiple issues such as floods, growing urbanization, and unplanned growth of cities and concentration of earning opportunities within the urban settlements. These slums have many similarities compared to other low- and middle-income countries (LMICs), such as overcrowding, lack of houses, lack of hygiene, extremely poor sanitation, poor economic situation, low education, and limited to no access to healthcare. Also, there is no healthcare delivery system focused on these underserved populations. Literature shows that the slums are at the worst of the conditions especially concerning their healthcare. They are missed in health and other global surveys of Pakistan. However, the studies around the world show that substance abuse is relatively high among the slum dwellers and may have different patterns which need to be studied so that information can be used to target programs and policies. Therefore, the purpose of this study was to provide an insight into the gravity of substance/drug abuse and identify its determinants among such vulnerable populations.

2. Methodology

This was a community-based, cross-sectional study involving the populations living in slums/nomadic settlements of Islamabad. All the adults from both sexes aged 15 and above, consented to participate were enrolled from selected clusters. People that were mentally unstable or could comprehend the questions were excluded from the study.

The survey was planned in a two-staged cluster sampling manner, to ensure adequate coverage. According to the latest list from Islamabad’s (Federal Capital of Pakistan) Capital Development Authority (CDA), almost 18 settlements were present, with an estimated population of 80,000. We randomly selected 9 of these 18 settlements to cover almost 50% of the area. We used Epi info software (CDC Epi Info 2010) to calculate sample size for the population-based survey, there was a 95% confidence limit and 5% margin of error, and 5% prevalence of substance abuse. Assuming a design effect of 2.00, the minimum sample size was 154, adding 20% non-response rate the sample size became 207. From each cluster, 23 households and one individual from each of them was selected randomly for estimating the prevalence. All those were counted who were substance abusers as cases and others as controls for case-control analysis.

A structured questionnaire was used to gather information on demographics, trends, type of substance abuse and risk factors for getting engaged in this, and whether they tried to quit at any stage and what difficulties do they face when trying to quit. The questionnaire was administered by a team of trained data collectors who use to have a prior meeting with the community head for permission to carry out the survey. Questionnaire contained both close-ended and open-ended questions on demographic characteristics, type and pattern of use of illicit drugs (alcohol, cocaine, hallucinogens, heroin, inhalants, ketamine, marijuana (Cannabis/
bang), methamphetamine (white crystalline powder), prescription opioids, prescription sedatives (tranquilizers, depressants) steroids (anabolic), tobacco use, nicotine, naswar, time of initiation, reason for continuing with this abuse, and efforts of quitting, if attempted at any time.

2.1. Ethical considerations

Ethical clearance was obtained from Internal Review Board (IRB) of Pakistan Health Research Council (PHRC), the agency of Pakistan’s National Health Research Council with the mandate to issue ethical clearances to in-country research studies. Informed written consent was obtained in Urdu (national language) from the respondents. There were a majority of uneducated members in the population, thus a community member accompanied the researchers while taking consent who would explain and help understanding the research study to the respondents. Participants were assured of the confidentiality of the information by not using personal identifiers. They were also given a choice to leave the study at any point if they wanted to.

3. Results

3.1. Sociodemographic characteristics

A total of 204 participants were enrolled in this study. Among these, 68 (33%) were found to be drug abusers. For the case-control study, these drug users were considered as cases (68) and rest (136) as controls. Majority of the participants were male (178 (91.7%)) while only 36 (8.3%) were females. The mean age of the respondents was 39.5±14 years (range 16-85 years) and the mean age of drug users was 35.3 ± 13.7 (range 17-41.5 years) (Table 1). The age wise distribution showed the highest prevalence of substance abuse in age 30-44 years followed by 15-29 years. The use of substance is less in older age groups (Figure 1).

Drug abuse was reported by 33 % (n= 68) of the respondents; 38% of these abusers were addicted to two or more types of drugs. Out of total study participants, 83% of the drug users were working since their childhood and 67% of drug users were earning money to meet their drug addiction.

Majority (67%) of the substance abusers were also tobacco smokers. Easy availability of illegal drugs was reported by 38.2% of the cases.

3.2. Risk factors for substance/drug abuse

Of all the drug addicts, almost 55% were independently living as compared to 45% of the participants that were living with parents during their childhood while 12% were forced to live with their relatives to earn money in Islamabad and 6% of participants were belonging from split families and were living on their own (Table 2).

Bivariate analysis of the risk factors indicated that easy availability of drugs in slum areas (OR: 20.3; p= 0.000), exposure to tobacco smoking (OR: 8.8; p= 0.000), being a working child (OR:6.0;p= 0.000) and use of drugs by a family member (OR: 2.2; p= 0.005) were the strong predictors of high substance abuse among slum area residents. It was further determined that education (OR: 0.2; p= 0.000) and living with parents during childhood (OR: 0.7; p= 0.2) had a protective effect against substance abuse (Table 3).
4. Discussion

The study found a high prevalence of substance abuse of 33% among dwellers in slum settlements in Islamabad. This is much higher compared to the estimated country report in 2013.\(^1\) Higher than expected prevalence of substance abuse in special communities like slums are also reported in other studies across the globe such as in India where it is reported to be 43%.\(^{19-21}\) Our study observed that earlier exposure to tobacco smoking makes a person more prone to indulge in illicit drug abuse which is strongly supported by the study by Ghulam et al.\(^{22}\)

There are numerous reasons for engaging in substance abuse like the influence of friends or peer pressure, social and family stresses, someone else in the family using drugs.\(^{7,21}\) In addition, the study indicated that living with parents as a child had a protective effect against substance abuse. However, having a broken family, living on your own, or living as a working child, proved to be strong predictors and responsible factors also supported by prior study by Kabir et al which described problems with parental or marital relations or breakup of a relationship, escape from stressful life events, or feelings of failure being contributors of addiction.\(^{23}\) Another important finding of this study was that easy availability was also one of the strongest predictor of substance abuse in the slums. In illegal and unregulated communities, these are the hub of illegal activities and drugs, which are freely and easily available and increase the population for exposure.\(^{23}\) Our study also showed the protective effect of education, which is largely supported by other studies thereby further strengthening the argument that education has a special place while addressing such issues.\(^{19-24}\)

4.1. Limitations

The study was a non-funded activity therefore the lack of resources was a major limitation to going beyond a specified geographical location, namely Islamabad. Although the key characteristics of the slum areas remain the same, a study with limited geographical representation is a limitation and our results lack the element of generalizability for the slum areas of the entire Pakistan. However, this pilot study provides some insight to the gravity of situation and warrants further large-scale interventional studies to address the modifiable determinants of this menace.

5. Conclusions and Implications for Translation

Our study concludes that the substance abuse among slum residents is alarming. The determinants of substance abuse include unregulated and illegal drug sales, high rate of tobacco consumption poverty, low level of literacy, social and family issues, and being a working child. Though these determinants

### Table 2: Distribution of risk factors among cases and controls

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Percentage among cases (%)</th>
<th>Percentage among controls (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever attended the school</td>
<td>32</td>
<td>67</td>
</tr>
<tr>
<td>Lived with parents in childhood</td>
<td>48</td>
<td>57</td>
</tr>
<tr>
<td>Has any other family member who uses drugs</td>
<td>45</td>
<td>27.2</td>
</tr>
<tr>
<td>Easy availability of drugs</td>
<td>61</td>
<td>7.3</td>
</tr>
<tr>
<td>Working child</td>
<td>84</td>
<td>46.3</td>
</tr>
<tr>
<td>Smoking status</td>
<td>66</td>
<td>18</td>
</tr>
</tbody>
</table>

### Table 3: Risk factors analysis of substance abuse among slums in Islamabad 2016

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Odds Ratios (OR)</th>
<th>95% Confidence Interval</th>
<th>P- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy availability</td>
<td>20.3</td>
<td>9.0-45.6</td>
<td>0.000</td>
</tr>
<tr>
<td>Smoking status</td>
<td>8.8</td>
<td>4.5-17.3</td>
<td>0.000</td>
</tr>
<tr>
<td>Working child</td>
<td>6.0</td>
<td>2.8-12.4</td>
<td>0.000</td>
</tr>
<tr>
<td>Use of Drugs by family member</td>
<td>2.2</td>
<td>1.2-4.1</td>
<td>0.005</td>
</tr>
<tr>
<td>Ever attended school</td>
<td>0.2</td>
<td>0.1-0.4</td>
<td>0.000</td>
</tr>
<tr>
<td>Lived with parents in childhood</td>
<td>0.7</td>
<td>0.3-1.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>
are inherent to slum settlements, they are largely modifiable. It is recommended that the menace of substance abuse among such vulnerable population require strategic interventions like enacting laws for curbing the illegal drug and tobacco sales and easy availability, regulating child labor practices and provision of health and behavior change education.

**Compliance With Ethical Standards**

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**Key Messages**

- The prevalence of substance abuse and early age of initiation of abuse among slum residents in Islamabad is alarming.
- Unregulated and illegal sales, high rate of tobacco consumption poverty, low level of literacy, social and family issues especially being working child need special consideration and an urgent attention.
- Such vulnerable population needs strategic interventions like devising laws for curbing the illegal drug and tobacco sales and easy availability, regulating child labor practices along with provision of health and behavior change education.

**References**


