World Applied Sciences Journal 31 (6): 1072-1077, 2014
ISSN 1818-4952
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DOI: 10.5829/idosi.wasj.2014.31.06.263

Coorelates of Needle Sharing among Injecting Drug Users

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Abstract: In this study correlates of needle sharing were observedamong injecting drug users in Chiniot, Pakistan. Snowball sampling was used to select a sample of 243 injecting drug users. Information was collected through questionnaire on demographical variables, drug use behaviors and awareness of the IDUs towards HIV. Logistic regression analysis was used to identify the significant variables, with dependent variable as shared needle. 141 (58%) IDUs showed the tendency of sharing of syringe. Sharing of syringe was increased by Age of the IDUs, Migration for drug by the IDU, Cost of the drug used by the IDU, Time spent with one syringe by the IDU, Injecting place of the IDU, Introduce someone to injection by the IDU, How spare the syringe by the IDUs and Present Occupation of the IDUs. Since data was collected from cross sectional design so causation cannot be determined. Some of the introduced variables that were associated of syringe sharing perhaps used in the interruption of HIV with the objective of reducing sharing of syringe among IDUs.

Key words: IDU · HIV · Needle sharing · Snowball sampling · Logistic regression · SPSS

INTRODUCTION

A range of studies have examined the factors related to needle sharing among injection drug users. However most of them are conducted in the developed world. Drug injecting behaviors has increased enormously in the rising world from Lagos to Lahore Roy *et al.* [1] in the last decade. Chiniot a newly built and a smallest district of Punjab is characterized by ethnic conflict, lack of education and high unemployment. Human immunodeficiency virus infection (HIV) / acquired immunodeficiency syndrome (AIDS) has shown a fast growing tendency. Injecting drug users (IDUs) are associated with this problem very closely in Pakistan. Sharing of injecting equipment is the main routes of spread of HIV/AIDS Altaf *et al.* [2]. In one study, due to the syringe sharing 88% IDUs were HCV positive Altaf *et al.* [2]. HIV infection among the IDUs has reached an all-time high of 21% in Pakistan. There are several reasons given for this included the lack of resources to screen donations at blood banks, the use of unsterilized medical equipment and the high prevalence of unnecessary medical injections where needles and syringes are often reused without proper sterilization Azim *et al.* [3]. In the world recently HIV outbreaks are found in Indonesia, China, Vietnam, Eastern Europe and Central Asia due to injection drug use Rodriguez *et al.* [4]. It is necessary to identify the associated factors with needle and syringe sharing among IDUs (injecting drug users) for the prevention of HIV. Aim of the study was to determine the prevalence and associates of needle and syringe sharing among a sample of IDUs in Chiniot. The objective of this study was to increase understanding of the associated factors linked with beginning into injecting drug use in Chiniot and the domination of these factors on succeeding initiation of others into injecting. In the long run, the findings of this study will also call attention to opportunities for providing harm reduction interventions earlier in the 'career' of IDUs and can be used to inform and improve social and political support for HIV escaping. By the knowledge of the related factors to injecting drug use and needle sharing will help with detection of groups at risk of initiation into injecting, as well as mechanisms of initiation, so that prevention interventions can be better designed and targeted.

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Data Collectionand Analysis: Study participants completed a planned questionnaire based on variables from previous studies and few others relevance to the study area. Data was collected from February 2011 to June 2011. An IDU was defined as a person who has injected illegal drugs at present. The sampling approach used a blend of convenience and snowball sampling. Snowball sampling technique is a link tracing technique. It was helpful to find IDUs on link base. Demographical information included variables such as age, education, marital status, occupation, income, living area, accommodation stability. Those IDUs who reported spending twenty four hours a day on the streets were declared as homeless. HIV awareness was obtained through questions that asked if IDU had ever heard of HIV before. Drug used information included variables such as age at injection initiation, frequency of injection daily used, injecting place of the IDUs, time spent with one syringe, how spare the syringe, substance being used, needle sharing, ever introduced someone to injection and cost of the drug. Variables including Income, age at injection start, cost of the drug, frequency of the injection daily used by the IDU and time spent with one syringe were categorized by using Quartile analysis. The data was analyzed using Statistical Product and Service Solutions (SPSS). Variables associated with needle sharing were investigated using logistic regression. Odds ratios and 95% confidence intervals (C.Is) were calculated Agresti [5].

Findings of the Study: An associate of needle and syringe sharing data includes socio demographic data demographic information and current life situation Day *et al.* [6] had shown that needle sharing was common among Urban IDUs in South Wales. Current study depicting same situation with 155(63.8%) urban IDUs with 90(63.8%) needle sharing. The IDUs received more injections were more likely to be infected with hepatitis c Khan *et al.* [7]. In current study 155(63.8%) IDUs were using more than two injections daily.Diego *et al.* [8] and Savana *et al.* [9] had studied that in spite of free distribution of syringes needle sharing is common in Africa and Canada respectively. Same is in current study 59% were needle sharing. Closing of some fix places of drugs caused needle sharing in Canada Rafiey *et al.* [10]. These problems are also in current study areas. Kerr *et al.* [11] had observed in Thailand midazolam was commonly used by (67.5%) of the IDUs. In this study morphine is commonly used by 70.8% of the IDUs. Milloy *et al.* [12] had shown that in Thailand over dosing was a common problem. (29.8%) of the IDUs were overdosing. In current study 39.8% were over dosing using more than 4 injections daily. All the IDUs were Muslims due to Muslim society. In marital status 117(48.1%) were married, 102(42.0%) were unmarried, 13(5.3%) were divorced and 11(4.55%) were separated. In education 110(45.3%) were illiterate not attended school, 22(9.1%) were matric, 85(35.0%) were between primary and middle education and 14(5.8%) were of higher education below masters. 54(22.2%) of participants were employed (government and private). Then average monthly income was Rs. 4000 (range 1000-7000, S.D.1568.34). IDUs were asked the means of their income other than through employment and many of them get money from their relatives 38 (15.6%) and through beggary earning of the money 118 (48.6%). Migration for drug includes 155(63.8%) migrated for drug. Availability of the choice of the drug after migration include 182(74.9%) IDUs reported easy availability of the drug.

Substancerelatedand Injection Related Information: 140 (57.6%) out of 243 were IDUs and both IDU and DU were 103 (42.4%). Frequency of the injection daily used include 2 injections daily 71(29.2%), 3 injection daily used include 84(34.6%) and 4 injection 61(25.1%). Shared syringe include 141(58.0%) sharing injecting equipment. From table 1 and 2: 229 (94.2%) of the IDUs are injecting in open places and 139(98.6%) are needle sharing, total percentage of the IDUs with relation to the acquaintance were 182(75.2%) among them 105(75.0%) were needle sharing. The total percentage of the IDUs with introduction to the acquaintance were 126(51.9) among them 98(69.5%) were needle sharing. Substance being used include 172(70.8%) using morphine and Avil tablet, 32(13.2%) were using diazepam tablet and injections and 38(15.6%) were using Heroin.HIV/AIDS awareness include 200(82.3%) have knowledge of the threat. In present study 60% of the IDUs were started drugs from marijuana and 47% of the IDUs were using drugs due to the peer pressure.

Correlates of Needle Sharing: In current research from Table 3 Stepwise regression with likelihood criterion provides needle sharing was correlated with Age of the IDUs (OR =1.725; C.I, 1.031~2.885) means the IDUs with age less or equal than thirty have 1.725 times more chances of needle sharing compared to those with age

APPENDIX:

Table 1: IDUs characteristics related to drugs

			Yes	No
Age	≤30	112(46.1)	57(40.4)	55(59.6)
	>30	131(53.9)	84(53.9)	47(46.1)
Living area	Rural	88(36.2)	51(36.2)	37(36.3)
	Urban	155(63.8)	90(63.8)	65(63.7)
Marital status	Married	141(58.0)	88(62.4)	53(37.6)
	Unmarried	102(42.0)	53(52.0)	49(48.0)
education	Illiterate	110(45.3)	62(44.0)	48(47.1)
	Literate	133(54.7)	79(56.0)	54(52.9)
Occupation	Street survival	118(48.6)	70(49.6)	48(47.1)
	Daily wages	18(8.5)	5(27.8)	13(72.2)
	Family support	38(15.6)	18(12.8)	20(19.6)
	Job	54(22.2)	33(23.4)	21(20.6)
Accommodation stability	Yes(own)	179(73.7)	108(76.6)	71(69.6)
	No(temporary)	64(26.3)	33(23.4)	31(30.4)
Shooting gallery	Streets	147(60.5)	108(76.6)	39(38.2)
	Home	12(4.9)	2(1.4)	10(9.8)
	Other	84(34.6)	31(22.0)	53(52.0)
Live on street at night	Yes	100(41.2)	56(39.7)	44(43.1)
	No	143(58.8)	85(60.3)	58(56.9)
Juvenile arrested	Yes	133(54.7)	81(57.4)	52(51.0)
	No	110(45.3)	60(42.6)	50(49.0)
Migration for drug	Yes	155(63.8)	105(74.5)	50(49.0)
	No	88(36.2)	36(25.5)	52(51.0)
Income	≥4000	129(53.1)	75(53.2)	54(52.9)
	<4000	114(46.9)	66(46.8)	48(47.1)

Table 2: Demographical and injecting drugs characteristics of IDUs

			Needle sharing	
Characteristics	N%		Yes	No
Age at injection start	≤27	141(58.0)	75(53.2)	66(64.7)
	>27	102(42.0)	66(46.8)	36(35.3)
Frequency of injection	≤2	86(35.40)	50(35.5)	36(35.3)
	>2	155(63.8)	89(63.1)	66(64.7)
Cost of drug	≤100	155(63.8)	85(60.3)	70(68.6)
	>100	88(36.2)	56(39.7)	32(31.4)
Days spent with a syringe	≤2	187(77.0)	90(63.8)	97(95.1)
	>2	56(23.0)	51(36.2)	5(4.9)
Injecting place	street	147(60.5)	108(76.6)	39(38.2)
	Others*	96(39.5)	33(23.4)	63(61.8)
IDU relation	acquaintance	182(75.2)	105(75.0)	77(75.5)
	Others*	60(24.8)	35(25.0)	25(24.5)
Substance being used	morphine	172(70.8)	104(73.8)	68(66.7)
	Others*	71(29.2)	37(26.2)	34(33.3)
Availability of drug	Easy	182(74.9)	109(77.3)	73(71.6)
	Difficult	61(25.1)	32(22.7)	29(28.4)
Introduce others to injection	Yes	126(51.9)	98(69.5)	28(27.5)
	No	117(48.1)	43(30.5)	74(72.5)
Sex partner	Yes	73(30.0)	42(29.8)	31(30.4)
	No	170(70.0)	99(70.2)	71(69.6)
HIV awareness	Yes	200(82.3)	116(82.3)	84(82.4)
	No	43(17.7)	25(17.7)	18(17.6)

Table 3: Logistic Regression Analysis related to correlates of needle sharing among IDUs

Characteristics		b	S.E	Wald test	Sig	OR	C.I
Age	≤30	.545	.263	4.310	.038	1.725	1.031~2.885
	>30					1	Reference
Migration for drug							
	Yes	1.110	.277	16.089	.000	3.033	1.764~5.217
	No					1	Reference
Cost of the drug							
	≤100	.478	.267	3.203	.05	1.613	1.02 ~2.724
						1	Reference
Time spent with syringe							
	>2	2.397	.491	23.844	.000	6.993	4.2~11.776
	≤					1	Reference
Injecting place							
	Street	1.665	.285	34.201	.000	5.287	3.026~9.238
	Others*					1	Reference
Introduce other to injection							
	Yes	1.796	.288	38.993	.000	6.023	3.42 ~10.58
	No					1	Reference
How spare the syringe							
	Throw	1.652	.976	2.862	.041	5.216	.77~35.35
	Others*					1	Reference
Present occupation of the IDU							
	Street worker	1.999	.865	5.342	.021	7.384	1.35~40.235
	Others*					1	Reference

b=regression coefficient, S.E= standard error, Sig= significance, OR=odds ratio, C.I= class interval

greater than thirty, Migration for drug by the IDU (OR= 3.033; C.I, 1.764~5.217) means that those IDUs which migrate for drugs have three times more chances of needle sharing as compared to those which don't move. Cost of the drug used by the IDU (OR = 1.613; C.I, 1.02~2.724) means that IDUs which uses drug of 100 or less rupees have 1.61 times more chances of needle sharing as compared to those which uses drugs of more than 100 rupees, Time spent with one syringe by the IDU (OR=6.993; C.I,4.2~11.776) explains that those IDUs that have the habit of using syringe for a long period of times have seven times more chances of needle sharing, Injecting place of the IDU (OR=5.287; C.I, 3.026~9.238) means that IDUs that uses drugs at open places have five times more chances of needle sharing as compared to those that not uses drug at open places, Introduce someone to injection by the IDU (OR= 6.023; C.I, 3.42 ~10.58) means that those IDUs which introduce others to injection have six times more chances of needle sharing, How spare the syringe by the IDUs (OR=5.216; C.I,. 77~35.35) means five times more chances of needle sharing for those IDUs that through syringes after use or not spare in a proper manners and Present Occupation of the IDUs (OR=7.384; C.I, 1.35~40.235) means IDUs with no job have seven times more chances of needle sharing as compared to those which have job or work to do.

DISCUSSION

In District Chiniot, Punjab, 1 of 2 IDUs reports lifetime needle and syringe sharing. The likelihood of lifetime needle and syringe sharing was increased by being jobless, having illegal income, drug use by friends and acquaints, pleasure/enjoyment as reason of first injection, first injection in public places, cost of the drug, frequency of injection daily used, time spent with one syringe, age at injection initiation and ever arrested. About the literature on syringe sharing worldwide, according to a study in Mexico, 80% of the IDUs reported that they share syringes regularly with other IDUs Magis *et al.* [13]. In Canada 27.6% of the IDUs reported sharing needles during the past 6 months Robertson *et al.* [11]. In Iran 33.33% IDUs were needles sharing Rafiey *et al.* [14]. In this study, IDUs using injection at open places and IDUs with low income had higher rate of needle and syringe sharing. Review of literature had shown a link between unemployment of IDUs and needle and syringe sharing behavior Robertson *et al.* [15]. Similarly, syringe sharing has been reported to be linked to age at injection initiation. Cost of the drug is also the reason of needle sharing. These may be due to the financial strains to buy sterile syringes and free syringes should be given to these IDUs. In this study, drug

injectors with drug user friends or acquaints members were at higher risk for needle and syringe sharing. Needle and syringe sharing is reported to be higher in IDUs with acquaints network for drug use Strathdee *et al*. [16]. One study reported that the role of family network on the needle sharing behavior is more severe in women in comparison with men Evans *et al.* [17], not the case in this study. In present study, first drug use at public places was linked to more syringe sharing. By the view of literature it is observed that those IDUs who are injecting at public places are in more danger of needle sharing as compared to those who are injecting lonely Savanna *et al.* [18]. A study at Iran and US also confirms this association Azim *et al.* [3]. Injection lonely in comparison to injection with someone else is linked to the less opportunity of needle and syringe sharing. A study conducted in US, indicated less needle and syringe sharing in IDUs who injecting alone Azim *et al.* [3]. In this study there is a high rate of needle sharing among those IDUs who are injecting in public places. In another study there is a high rate of needle sharing in social and ancestral networks Strathdee *et al.* [16]. Same is the case in study at hand. In another study it was funded that those IDUs who inject in alone have less danger of needle sharing Azim *et al.* [3]. In present study a link is obtained between needle sharing and substance being used, which are both high risk behaviors. In one study in USA it was showed that overdosing may be associated with borrowing syringes Bluthenthal *et al.* [19], but in England in a study conducted 1994 to 1995 showed that needle sharing and more use of drug are not related Magis *et al*. [13]. Morphine was commonly used among a 70.8% of the IDUs. The current research suggested that AIDS prevention efforts should focus on approaches to reduce needle sharing. Needle exchange programs, HIV counseling and testing and bleach distribution may reduce levels of needle-sharing risks.

Limitations of the Study: It includes the following. First, Response biasedness may affect the results. Because the results rely on IDUs' self-report data, so there may be response bias. They may not like to give right information about their drug use behaviors. Second, because the study design was cross- sectional, it is not possible to illustrate the causation in the direction of the associations. Thirdly, in this study for the collection of the data non probability sampling technique was used so testing and drawing inferences may not be possible.

CONCLUSION

The variables which are found significant in the study must be consider in designing interventions for HIV prevention in Chiniot. Further studies in this regard are needed.

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