PATTERNS OF HEROIN USE AND RISK BEHAVIORS AMONG PRISONERS, COLOMBO, SRI LANKA

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ABSTRACT:

Background: All drug users and abusers who end up with significant health and social complications are not known. Heroin use patterns and risk behaviors can cause adverse results for users as well as society. The purpose of this study is to assess the patterns of heroin use and heroin user's, risk behaviors in prisoners, Colombo, Sri Lanka.

Methods: This is a cross-sectional study conducted in 334 heroin users aged 18 years and above. A face to face interview questionnaire was administrated purposively sampling.

Results: The majority (51.2%) of interviewees were aged 39–58years. Prominent percentage of them were received grade 5 to 10 of education (70%). Drug use was largely introduced from friends and obtained from friends (86.2% and 85.5% respectively). Peer pressure was the main reason to take heroin (96.3%). There were significant number of heroin used their friends (96.1%). Polydrug use and overdose experience were less common. Tobacco smoking and alcohol use were more prominent (62.6%, 76% respectively). The prevalence of injecting drug use was remained as previous reported percentage (2.1%). Out of 96.1% heroin everyday used. Out of 56.6% were used twice a day. The majority of had experienced of early arrested history (93.9%).

Conclusion: The pattern of drug use was equal to those indicated in nearby countries. However, the high prevalence of smoking heroin use, tobacco smoking, alcohol drinking and criminal behaviors is a concern. There is an urgent need to launch new laws and policies, proper rehabilitation requirements to control and eradicate heroin threat in Sri Lanka.

Keywords: Heroin use; Risk behaviors; Prisoners; Sri Lanka

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INTRODUCTION

The world drug report 2015 mentioned that in the world, there were 246 million of people used an illicit drug. It was estimated about 5% of people utilized drugs in the world wide. Most of them were in between 15 to 64 years aged group in 2013. Majority of people use to inject drugs (14 million). Prevalence of drug addicts' men were three times higher than women. The number of 187,100 million drug related deaths were reported in 2013 as well as not changed relatively in 2014 [1].

Estimated number of 9.5 million of people use heroin in worldwide [2]. The cultivation of opium was increased by 17% in 2007 [3] .The annual prevalence of heroin use remained at 0.2% of the population age 14 and above since 2001[4]. Heroin users in prison were more common than other substance use such as cocaine, amphetamines or ecstasy [1]. Further, among heroin use prisoners most of heroin users were injecting heroin use [1]. Comparing with other substance use youths, heroin-using adolescents have the highest rate of injection drug use [5]. However, younger heroin users less

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likely to inject as well as prefer to use small amount and for a short time [6].

Heroin and non-medical use of prescription opioids overdose use is the primary cause of drug related death in worldwide [1]. Most of heroin addicts were current smokers [7]. It was estimated that more than 60% of drug related to opiates specially heroin addiction treatment demand in Asia and Europe [8]. Main thing is this heroin addict's people lead wide ranging social and health complications in many countries of the world [2]. It was note that significantly injecting cocaine users' heroin used regularly [9]. Those who consumed heroin, they use to take polydrug such as alcohol marijuana, benzodiazepam, tobacco and caffeine [10]. Heroin by using combing with other drugs like cocaine or alcohol for increasing of reaction [11].

In Sri Lanka, there are nearly 240,000 opiate users [12]. It estimates that there are about 45,000 heroin users and 20,000 cannabis users in Sri Lanka [13]. Further, heroin smoking was the main method [14]. The reason of heroin is not accessible in appropriate quality therefore they used as smoked. Law quality heroin commonly use with paracetamol or pain killers [15]. Most of heroin users preferred to use combination of cannabis. Apart from fewer heron users use valium. All drug users were current tobacco smokers and they compel to use tobacco in their earlier or adolescence. Majority of heroin users using alcohol as well as current smokers [16].

In Sri Lanka, cannabis and heroin are the most preferred drugs in prison population (61.3% and 37.4% respectively). Apart from heroin was the most desire drug of subsequent regular use [14]. High risk of criminal behavior was known from heroin users [17].In Sri Lanka, drug users had experienced of criminals [14]. According to Handbook of drug abuse information in National Dangerous Drug Control Board (NDDCB), Sri Lanka 2016, there were 8570 of people arrested for drug related offences in first six months of 2015. Heroin related arrested were increased by 14% in 2015 by compare with 2014. Major problem is most of countries use Sri Lanka as a transit point of drug trafficking. Considering of drug use arrested in first six months in 2015, there were 1795 of persons were heroin users. Consider about whole year 2015, 26539 were arrested as drug related corruptions. Majority of cases recorded in western province (60%), 10% of southern province and 10% of central province. According to imprisonment data, there were11,171people in prison in 2015 due to drug related arrested [18]. Out of 32% was heroin cases [13].

However, there were difficult to collect data in community regarding heroin users as well as not enough sample in rehabilitation centres in Sri Lanka. Therefore, this study was conducted among incarcerated heroin users. Further, it was not particular evidence of recently done researches about heroin use prisoners. Therefore, not enough information about heroin user's risk behaviors, patterns of heroin use. Thus, the purpose of this study is to assess the patterns of heroin use and heroin user's, risk behaviors in prisoners, Colombo, Sri Lanka.

METHODS

The cross-sectional study was conducted in Welikada prison, Colombo, Sri Lanka. Purposively sampling among 334 heroin users aged 18 years and above. Further include those who were willing to participate males. Severe depressive people, deaf people, dumb people were excluded in this study. Face to face interview was applied for data collection. Administrated questionnaire was used. The questionnaire consists of two parts. The first part contains sociodemographic characteristics. The second part include patterns of heroin use and risk behaviors. The range of questionnaire content validity was 0.7 - 1.0 and reliability of Cronbach's alpha was 0.618 (moderate correlation range, 0.54–0.79 were considered and acceptable [19]. Independent variables were age gender, marital status, ethnicity, religion, educational status, area of residence, occupation, living status, economic status, early arrested status. Dependent variables were patterns of heroin use and risk behaviors. Each variables of heroin use patterns and health risk behaviors are assessing independent of the other. The data were analyzed by using SPSS. Before start the data collection, written consent was obtained from participants. Ethical consideration was obtained from the ethic review committee, University of Colombo, Sri Lanka (N0: ERC 17/70).

RESULTS

Socio-demographic characteristics

The study sample consisted of 334 heroin used incarcerated people. Participants were 22 -58 years and average of age was 37.85 $\pm$ 6.1 years. The most of heroin users were 39 - 58 years of age (51.2%). The most of heroin users interviewed were Buddhist and Sinhalese from Colombo. Out of 84.4%

Table 1 Patterns of heroin use

Variables		Age group (years)		
		22-38 n=163 n(%)	**39-58 n=171 n(%)**	**Total n=334 n(%)**
Frequency of heroin use per week	Every day	158(96.9)	163(95.3)	321(96.1)
	2 times per week	3(1.8)	7(4.1)	10(3.0)
	3 times per week	0	1(0.6)	1(0.3)
	4 -5 times per week	2(1.2)	0	2(0.6)
Amount per session	25 - 30 mg	137(84.0)	140(81.9)	277(82.9)
	50 - 150 mg	26(15.9)	31(18.1)	57(17.1)
Amount per day	0.25g - 1g	162(99.4)	170(99.4)	332(99.4)
	>1g - 3g	1(0.6)	1(0.6)	2(0.6)
Frequency of one day use	One time	13(8.0)	21(12.3)	34(10.2)
	Two times	97(59.5)	102(59.6)	199(59.6)
	Three times	41(25.2)	43(25.1)	84(25.1)
	More than three times	12(7.4)	5(2.9)	17(5.1)

Table 2 Overdose

Variables		Age group (years)		
		22-38 n=163 n(%)	**39-58 n=171 n(%)**	**Total n=334 n(%)**
Overdose experience	Yes	9(5.5)	8(4.7)	17(5.1)
Overdose frequency	1	1(11.1)	0	1(5.9)
	2	5(55.6)	4(50)	9(52.9)
	3	2(22.2)	3(37.5)	5(29.4)
	8	0	1(12.5)	1(5.9)
	9	1(11.1)	0	1(5.9)

heroin used prisoners married. Most of them had low educated background (70%) which were participated at grade 5 to 10 only. Due to reluctant to go to school (72%) and had less economic issues (46%) there were 72.2 % of them were gave up their education. Out of 99.1% of heroin users were not doing permanent job as well as they had low income (55.7%). Majority of them were living with their wives and their friends were introduced heroin (86%).

Family and friends drug use history

Majority of parents not used drugs specially 100% mothers not used. Out of 96.1% of friends were drug users and they were heroin users too (77.5%). Main heroin introducer was their friends (86.2%).Consider in prison heroin users, almost 70% were living with wives.

Patterns of heroin use

Lifetime heroin use defined as any use heroin throughout the person's life and recent used consider during last twelve months. Current used consider as last thirty days and last seven days used [20]. In this study, all life time heroin users were recent and current users. Majority of heroin used as peer pressure (93.4%) as well as they received heroin from friends (86.2%). Most of in heroin users in prison used heroin as smoked (97.9%) and fewer of used inject heroin (2.1%). Out of 96.1% were heroin used every day. Almost 60 % heroin used times per day. Majority of users were used 0.25g – 1 g per day and 25mg used for one session (82%). Among heroin users, 62.6% of tobacco smokers.76% of were used arrack as alcohol. There were not reported polydrug used among heroin users. Very less prevalence of overdose experience indicated among heroin users (5.1%), Table 1.

Table 2, out of 52.9% had two times overdose experienced among overdose heroin users.

Table 3, almost 99%, not shared heroin user's needles or their equipment. Out of 37.7% had experienced of tattoos made. Majority of made tattoos by using separate needles (32.5%).

Table 4, out of 62.6% were tobacco smoked among heroin used prisoners. Among them, 56% used 1-5 cigarette per day.

Table 3 Risk behaviors

Variables		Age group (years)		
		22-38 n=163 n(%)	39-58 n=171 n(%)	Total n=334 n(%)
Have tattoo	Yes	61(37.4)	65(38.0)	126(37.7)
Method used for tattoo making	Used separate needle	17(27.9)	24(37.0)	41(32.5)
	Machine	24(39.3)	13(20.0)	37(29.4)
	Pen	12(19.7)	4(6.1)	16(12.7)
	Blade	4(6.5)	9(13.8)	13(10.3)
	Same needle	3(5.0)	6(9.2)	9(7.1)
	Knife	1(1.6)	5(7.7)	6(4.8)
	Others (safety pins, hair clips, nails)	0	4(6.1)	4(3.2)

Table 4 Tobacco smoking

Variables		Age group (years)		
		22-38 n=163 n(%)	39-58 n=17 n(%)	Total n=334 n(%)
Tobacco smoking	Yes	106(65.0)	103(60.2)	209(62.6)
Cigarette smoking per day	1 - 5	59(55.7)	58(56.2)	117(56.0)
	6 - 10	34(32.1)	37(36.0)	71(34.0)
	11 - 15	10(9.4)	7(6.8)	17(8.1)
	16 - 20	2(1.9)	1(1.0)	3(1.4)
	26 - 30	1(0.9)	0	1(0.5)

Table 5 Alcohol drinking

Variables		Age group (years)		
		22-38 n=163 n(%)	39-58 n=171 n(%)	Total n=334 n(%)
Alcohol drinking	Yes	125(76.7)	130(76.0)	255(76.3)
Times per day used alcohol	One time	117(93.6)	122(93.8)	239(93.7)
	Two times	5(4.0)	8(6.2)	13(5.1)
	Three times	3(2.4)	0	3(1.2)
Quantity per day used	1 Standard drink	17(13.6)	21(16.2)	38(14.9)
	2 Standard drink	4(3.2)	5(3.8)	9(3.5)
	3 Standard drink	61(48.8)	60(46.1)	121(47.5)
	5 Standard drink	4(3.2)	3(2.3)	7(2.7)
	More than 5 standard drink	39(31.2)	41(31.5)	80(31.4)

Table 5, almost 76% of both age group were alcohol drinkers. Nearly 47% used 3 standard drink per day.

Table 6, out of 92% had experienced of early arrested history. Considering age almost 52% early arrested between 26 – 30 years. Nearly 34% were arrested three times Drug trafficking was the most prominent reason to early arrest. Mean age at first arrested was 28.2±4.7.

DISCUSSION

Sociodemographic factors of heroin used prisoners

The study of the patterns and risk behaviors were described incarcerated heroin used population in Sri Lanka. The participants were mainly of 22-58 age. All heroin users were male who was the large part of workforce in country. Previous studies have mentioned that heroin users in same age groups in worldwide [1]. Majority of heroin users had initiated their heroin during late adolescence. Life time drug use was associated with age [21]. The most of injecting heroin users were males, aged group between 20 to 40 years [22].This study also reavealed the same age group was the most prominent. Lifetime heroin used and age significantly associated. High prevelence of heroin users got married and

Table 6 History of arrested

		Age group (years)		
		22-38 n=163 n(%)	**39-58 n=171 n(%)**	**Total n=334 n(%)**
Arrest before	Yes	152(94.4)	157(93.5)	309(93.9)
Frequency of arrested	One time	36(23.7)	5(3.2)	41(13.3)
	Two times	48(31.6)	26 (16.6)	74 (24.0)
	Three times	37(24.3)	67(42.6)	104(33.6)
	More than 3 times	31(20.4)	59(37.6)	90(29.1)
Reason to previous arrest	Drug trafficking	92(62.5)	78(50.0)	170(55.0)
	Heroin use	8(5.2)	21(13.3)	29(9.4)
	Crime	12(7.8)	15(9.5)	27(8.7)
	Drinking arrack	10(6.5)	14(8.9)	24(7.8)
	Seller - ganja	7(4.6)	13(8.2)	20(6.5)
	Seller - heroin	9(5.9)	10(6.3)	19(6.1)
	Ganja trafficking	10(6.5)	4(2.5)	14(4.5)
	Ganja use	4(2.6)	2(1.3)	6(1.9)

they lived with wives. Drug used and educational back ground related to each other [23]. According to this study, involvement of most heroin users have low educational back ground (99%) and not a permanent job (99%). Majority of heroin users came from poor employment back grounds, specially labors and drivers. Previous studies mentioned heroin used and ethnicity affected each other [24]. Age, gender, ethnicity, income and education most predictable to heroin used [21]. In Sri Lanka, according to this study high percentage of heroin used to Sinhalese among incarcerated heroin users due to main ethnicity. Majority of them were came from low income background (130-195USD).

According to this study, the most prominent reason given for initiation of heroin was peer pressure. Majority of heroin user's friends were drug users (96.1%) and their heroin introducer also friends (86.2%) as well as they obtained heroin from friends (96%). Further their friend's prominent used drug was heroin among both two age groups (86.9%). Earlier studies mentioned peer pressure affect to heroin used too [25]. Heroin users' behaviors control by external person positively then they continue their drug use and get confidence about heroin used good for their life [26]. Apart from some researches elicit poor parent childhood relationships [27], and parent who were used drugs more prone to affect their children [23]. According to this study there were less evidence of drug used family members, especially no reported any female family members.

Previous study mentioned majority of heroin users in Colombo district [22], as well as this study remained the same result because it is very easy to accessible as capital city [22].

According to this research, in Sri Lanka among prisoners, all heroin users were lifetime heron used in prison. Majority of lifetime heroin users were 39 to 58 age group adults (51.2%). However, all lifetime heroin users were recent and current heroin used individuals in prison. Prominent number of heroin users used heroin everyday (96%) two times per day (60%). Previous studies shows non injecting heroin users more like to injecting heroin use [28]. Majority of imprisonment heroin users were injecting [1]. However in Sri Lanka still limited injecting heroin users [12]. The study also elicits majority of heroin users' heron used as smoking (97.8%) and injecting heroin users remained as same (1.2%). There was no any female heroin user reported in prison. Usually injecting heroin users use between 1/4g and 1g per day and it chases between o.5g to 3g at the maximum abusers [29]. In this study, heroin used prisoners normally 0.25g to 1g heroin were used per day (99.4%) and majority of 25mg used as per one session (82.3%). They were received heroin as a 25mg packets. Each of heroin packet was obtained from 1300 to 1400 rupees.

Heroin users most commonly cannabis used as polydrug [10].Considering this study there were no any poydrug users among heroin used prisoners. The reason of not used any other drug because of they spend more money for heroin and not enough money to buy other drug. Instead of heroin, some of heroin users used codeine consist drugs (18.3%) and pain killers (13.5%). Fewer number of people used cocaine and alcohol due to not available of heroin.

However very fewer reported overdose experience in the study. Only 17 subject had over dose experienced and recovered within short times.

It was high prevalence of tobacco smoking and alcohol drinking among heroin users [30]. In Sri Lanka also among heroin used prisoners with high prevalence of tobacco smoking and alcohol drinking [16]. In this study mentioned a same trend has been indicated elsewhere. At least one cigarette was used extra per day during heroin smoking. Majority of alcohol drinking heroin used prisoner prefer to use arrack and they used to drink 3 standard drink per day. There were association of age and tobacco smoking.

Risk behaviors

Previous studies reported injecting heroin users with sharing needles were very common [24]. Considering this study, due to less prevalence of inject heroin used, there were not available significant number of both shared needles (1.5%) and other equipment (3.6%). Tattoo making and use of opioids were related [31]. Incarcerated individuals with tattoos are common and they often use unsterile devices which may lead to transmit HIV [32]. However considerable amount of heroin users made tattoos (62.3%) which were made mostly by separate needles (32.5%).

High risk of criminal behavior was known from heroin users [17]. Drug users had experienced of criminals [14].This study shows majority of heroin users had early arrested background. It indicated most of heroin users were arrested three times. Greater part of arrested due to drug trafficking. Ethnicity residency and education associated with arrested status (*p*-value; 0.039, 0.037, <0.01 respectively).

CONCLUSION

The study provides patterns and risk behaviors of heroin used prisoners. Disrupted education, age, tobacco smoking, alcohol consumption, previous arrested status, profession and income affected to heron used. Smoking is the main route of heroin administration (98.2%) and it is very effective trend because of injecting heroin users with more risk than smoking heroin. Most of them used heroin two times (60%) per everyday (96%). However, if heroin used with less injecting probability, substantial heroin users were more prone to make tattoos (37.7%). Further, only seventeen subject had over dose experienced with heroin used in the study. Drinking alcohol (76.3%) and tobacco smoking among (62.6%) heroin users with prominent another important matter. Majority of heroin users had experienced of many times of arrested history. Drug and crime involvement was the main reason to before arrest. It would be a considerable problem. If they have not a permanent job they spent more money for drug requirements.

RECOMMENDATION

It should be need new policies (e.g. after releasing from prison, need to follow up program) and rules (e.g. when they arrest repeatedly regarding heroin use, then need to increase their imprisonment duration) for heroin users. It is essential public education highlighting the sexual transmitted disease associated with engaging multiple partners, Man who have Sex with Man (MSM). Further, importance of implementing preventive issues targeting risk population. It should be considering many times of arrested. As there are an increasing number of heroin users being imprisoned every year, it would be significant problem. Therefore, require to new treatment and rehabilitation issues. Unprotected tattoo making trend also necessary to identify and want improve knowledge about how it will be a risk.

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