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

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เทรูวานิ นาร์มาดา ดิสซานายาเก : รูปแบบการใช้เฮโรอีนและพฤติกรรมเสี่ยงของผู้ต้องขังในโคลัมโบ ประเทศศรีลังกา (PATTERNS OF HEROIN USE AND RISK BEHAVIORS AMONG PRISONERS IN COLOMBO,SRI LANKA) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร.จิตรลดา อารีย์สันติชัย, 158 หน้า.

เฮโรอีนเป็นยาเสพติดให้โทษชนิดร้ายแรงที่อาจส่งผลต่อผู้ใช้และในสังคม อย่างไรก็ตามยังไม่มีข้อมูลล่าสุดเกี่ยวกับผู้เสพเฮโรอีนในกลุ่มผู้ต้องขังในประเทศศรีลังกา การศึกษานี้มีวัตถุประสงค์ เพื่อหารูปแบบการใช้เฮโรอีน พฤติกรรมเสี่ยงและระดับการเสพติดเฮโรอีนในกลุ่มผู้ต้องขังชายที่มีประวัติการใช้เฮโรอีนที่ถูกขังอยู่ในเรือนจำ อายุ 18 ปีขึ้นไป โดยใช้แบบสอบถามสัมภาษณ์ตัวต่อตัว ด้วยวิธีการสุ่มตัวอย่างแบบเจาะจงในผู้เสพเฮโรอีนจำนวน 334 ราย ผลการศึกษาพบว่า อายุเฉลี่ย 37.8±6.1 ในขณะที่อายุเริ่มใช้เฮโรอีนเฉลี่ย 30.8±4.2 การใช้สารเสพติดส่วนใหญ่ (ร้อยละ 86) เพราะเพื่อนแนะนำให้ใช้ และเมื่อสอบถามถึงเหตุผลการเริ่มเสพเฮโรอีน ร้อยละ 93 รายงานว่า เพื่อนชวน ร้อยละ 98 ใช้เฮโรอีนด้วยวิธีการสูบ ร้อยละ 96 รายงานว่า เคยเสพเฮโรอีนทุกวัน มีเพียงร้อยละ 5 เท่านั้นที่มีประสบการณ์เสพยาเกินขนาด และในกลุ่มนี้ร้อยละ 53 รายงานว่าตัวเองเคยมีประสบการณ์การเสพยาเกินขนาดถึงสองครั้ง ส่วนใหญ่รายงานว่าสูบบุหรี่และการดื่มเครื่องดื่มแอลกอฮอล์ (ร้อยละ 63 และ 76 ตามลำดับ) มีรายงานว่าเคยมีเพศสัมพันธ์กับคู่นอนหลายคน อยู่ในอัตราที่สูง (ร้อยละ 81) เคยมีประสบการณ์สักร้อยละ 37 เมื่อสอบถามเรื่องประวัติการถูกจับกุม ร้อยละ 94 เคยถูกจับมาก่อน ส่วนใหญ่เป็นคดีค้ายาเสพติด คดีเสพ และคดีอาชญากรรมอื่นๆ (ร้อยละ 55 ร้อยละ 9.4 และร้อยละ8.7 ตามลำดับ) ผู้ใช้เฮโรอีนส่วนใหญ่ (ร้อยละ 98) เสพติดเฮโรอีนระดับรุนแรง ดังนั้นจึงมีความจำเป็นอย่างยิ่งที่ผู้กำหนดนโยบายจะต้องให้การป้องกัน และการลดอันตรายเกี่ยวกับการเสพเฮโรอีน การใช้ยาเกินขนาดและพฤติกรรมเสี่ยงต่างๆ กับนักโทษกลุ่มนี้ก่อนที่จะพ้นโทษออกไปดำเนินชีวิตในสังคม

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THERUWANI NARMADA DISSANAYAKE: PATTERNS OF HEROIN USE AND RISK BEHAVIORS AMONG PRISONERS IN COLOMBO,SRI LANKA. ADVISOR: ASSOC. PROF. CHITLADA AREESANTICHAI, Ph.D., 158 pp.

Heroin is a highly addictive drug which affect a number of problems for users as well as society. However, there were no any recent data regarding heroin users among prisoner in Sri Lanka. This study aimed to identify the patterns of heroin use, risk behaviors and level of addiction among male prisoners in Sri Lanka. A face to face interview questionnaire was administrated purposively sampling among 334 heroin users aged 18 years and above. The average of age was 37.8 ± 6.1 while average age of heroin first used was 30.8 ± 4.2. Drug use was largely introduced from friends (86%) and peer pressure was the main reason to use heroin (93%). Smoking is the main route of administration (Almost 98%). Nearly 96% reported that they used every day. Only 5% reported drug overdose experience. Among them nearly 53% had two times of overdosing. Tobacco smoking and alcohol use were more prominent (62.6%, 76.3% respectively). There was a high prevalence (81%) of risk behavior with multiple partners. Tattoo making experienced was 37%. The majority (93%) had ever been arrested. Drug trafficking, heroin using and crimes were prominent reasons (55%, 9.4%, 8.7% respectively). Most heroin users were severely addictive (98%). It is essential for policy makers to provide prevention program and harm reduction for heroin use., overdose and risk behaviors among this group prior going out from the prison and living in the society.

Field of Study: Public Health Student's Signature .....

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AT - Attribution Theory

IDUs - Injection Drug Users

HBM - Health Belief Model

HepB, - Hepatitis B

HepC – Hepatitis C

MSM - Men who sex with men

NIU – Non Injecting Drug Use

PMT- Protection Motivation Theory

STD - Sexually Transmitted Disease

TP - Theory of Planned Behavior

TRA -Theory of Reasoned Action

NDDCB –National Dangerous Drug Control Board

CHAPTER I

INTRODUCTION

1.1 Background and rationale

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.

Estimated number of 9.5 million of people use heroin in worldwide (U. N. O. o. Drugs & Crime, 2016). The cultivation of opium was increased by 17% in 2007(Crimes, 2008). The annual prevalence of heroin use remained at 0.2% of the population age 14 and above since 2001(Berry, Pidd, Roche, & Harrison, 2007). Heroin users in prison were more common than other substance use such as cocaine, amphetamines or ecstasy (U. N. O. o. Drugs & Crime, 2015). Further, consider among heroin use prisoners, most of heroin users were injecting heroin use (U. N. O. o. Drugs & Crime, 2015). Comparing with other substance use youths, heroin-using adolescents have the highest rate of injection drug use (Hopfer, Mikulich, & Crowley, 2000). However, younger heroin users less likely to inject as well as prefer to use small amount and for a short time (N. I. o. D. Abuse, 2016).

Heroin and non-medical use of prescription opioids overdose use is the primary cause of drug related death in worldwide (U. N. O. o. Drugs & Crime, 2015). Most of heroin addicts were current smokers (Pajusco et al., 2012). It was estimated that more than 60% of drug related to opiates specially heroin addiction treatment demand in Asia and Europe (U. N. O. o. Drugs & Crime, 2010). Main thing is this heroin addict's people lead wide ranging social and health complications in many countries of the world (U. N. O. o. Drugs & Crime, 2016). It was note that significantly injecting cocaine users' heroin used regularly (Schütz, Rapiti, Vlahov, & Anthony, 1994). Those who consumed heroin, more prone to take polydrug such as alcohol marijuana, benzodiazepam, tobacco and caffeine (Leri, Bruneau, & Stewart, 2003). Using heroin combine with other drugs like cocaine or alcohol for increasing of reaction (Ciccarone, 2009).

Out of injecting drug users, 1.65 million of people living with HIV (U. N. O. o. Drugs & Crime, 2015). There were many risk factors mentioned among substances users, specially HIV/AIDS, Hepatitis C and other transmission of infectious disease (U. N. O. o. Drugs & Crime, 2015). It was indicated that the risk of above mentioned diseases 15 times higher than in the rest of population (U. N. O. o. Drugs & Crime, 2015). There were high damaging threat of HIV/AIDS with injecting heroin users (U. N. O. o. Drugs & Crime, 2010). In Sri Lanka, there are nearly 240,000 opiate users (WB, 2012). It estimates that there are about 45,000 heroin users and 20,000 cannabis users in Sri Lanka (NDDCB, 2016). However, it is slightly number of HIV/AIDS increased by using injecting drug users

(Senanayake, Kandiah, & Ratnayake, 2005). Among these, 1.7 % of the heroin users are known to inject (WB, 2012). In 2015, there were 4200 living with HIV/AIDS. Majority of HIV cases (50%) were indicated history of male to male sexual contacts (Programe, 2015). Apart from, most of the people who affected the in HIV/AIDS are heroin users (Hettige, 2016). In 2009, prevalence of HIV was 0.15% in STD clinic among sex workers, drug users and tuberculosis patients (Program, 2010) . Although, the knowledge of HIV transmission and that condom use were low (36.8%) among drug users (Rawstorne & Worth, 2007). The world Bank: HIV/AIDS in Sri Lanka 2012, mentioned men who sex with men, commercial sex workers, injecting drug users and law condom use is the high risk factors for HIV infection.

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 (Dissabandara et al., 2014). 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. Considering of drug use arrested in first six months in 2015, there were 1795 of persons were heroin users. Consider about whole year 2015, 26,539 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 were11171people in prison in 2015 due to drug related arrested (Satistical Division,

2016). Out of 32% was heroin cases (NDDCB, 2016). The majority of heroin was brought to Sri Lanka from India and Pakistan. Major problem is most of countries use Sri Lanka as a transit point of drug trafficking.

Sri Lankan government has to allocate large amount of money to launch treatment facilities and rehabilitation of people who were addict into the drug as well as control the problem. It includes healthcare cost, crime related cost, cost of institutionalize, incarceration cost (Sheron Hewawaduge & Dorabawila, 2015). It was estimated approximately 80,000 million of Sri Lankan rupee (53,5852.31USD) (Karunanayake, 2015). It is major issue for the country and problem for the future development (Jayasuriya, 1995) (De Silva & Fonseka, 2009), (Dissabandara, Dias, Dodd, & Stadlin, 2009).

Due to drug abuse, productivity loss through reducing the active labor force in a country and welfare loss. Not only that, it is major threat to a healthy society. In Sri Lanka, there is a clear deficiency of public health system as well as law success of rehabilitation because 55.1% of drug addicts were readmission to rehabilitate (De Silva & Fonseka, 2009). Further there were lack of treatment programs for heroin users (N. I. o. D. Abuse, 2007).

However, there were very few researches done in Sri Lanka, regarding heroin use. Although it was not particular evidence of recently done researches about heroin. Among those, there is not sufficient data on research regarding heroin users as well as not enough information about heroin user's health risk behaviors, patterns of use,

addictive level and infectious diseases threats for them. Therefore, the purpose of this study is to assess the patterns of heroin use, heroin user's, behaviors and health risk and severity of drug abuse problem in prisoners, Sri Lanka. Therefore, in this research will be helpful for the government to launch new policies and rules regarding patterns and risk behaviors of heroin users.

1.2 Research questions

1. What are the risk behaviors and patterns of heroin users among prisoners?
2. What are the addiction levels of heroin use in prisoners?

1.3 Research objectives

1. To identify the patterns of heroin use among prisoners
2. To identify the risk behaviors of heroin users among prisoners
3. To assess heroin addiction among heroin users in the prison

1.4 Operational definitions

1.4.1 Heroin

Heroin is extracted from the seed pod of the poppy plant. It is an opioid drug which is synthesized from morphine. Heroin available in white or brown powder or black sticky

which is known as black tar heroin. Heroin can be used as injected, inhaled or smoked. Heroin use as injection may very rapidly have affected in brain.

1.4.2 Heroin addiction

Using heroin repeatedly it leads to higher and higher doses requirement of drugs to get the same results. Therefore, the person's body to require the drug to working which cause to withdrawal symptoms within few hours. As a results of daily heroin used can develop physical and psychological dependence within a few weeks.

1.4.3 Patterns of heroin use

In this variables consider among heroin use prisoner's heroin use patterns of before arrest. Their administration route, frequency of heroin use, quantity of drug use, polydrug use and use of heroin over dose.

1.4.4 Male prisoner

Considering male prisoner one who arrest and legally punished due to heroin used.

1.4.5 Rout of administration

In prison heroin user's heroin use method. Consider whether they heroin use as injection, smoking or snorting/inhaling. Diluted heroin can be injecting into veins or

heated heroin smoke through the mouth like tobacco smoking or inhale through the nose (snorting).

1.4.6 Frequency of heroin use

Considering heroin users in prison usually how often heroin use per week. It was assessed whether everyday use, 2 times per week,3 times per week or 4-5 times per week use.

1.4.7 Quantity of heroin use

In prison heroin users were assessed how much they used per one session and per one day. Consider about how many mg/ g use per one session, one day and how many times use per one day (1 time,2 times,3 times, more than 3 times). Further, it was evaluated how to measure their heroin quantity.

1.4.8 Polydrug use

Heroin users in the prison, heroin mix with cocaine, benzodiazepines or other drug and Inject with same needle or heroin and other substance inject in separate needles in the same time.

1.4.9 Over dose

Heroin use people in prison sometimes take too much of drug and lead with experience of heroin overdose such as difficult in breath, dry mouth, drowsiness and uncontrolled muscles movement.

1.4.10 Heroin user's risk behaviors

In this research was assessed heroin users risk behaviors of before arrest status. Before arrest time consider as before one year of arrested. In the study consider variables of risk behaviors of heroin users in prison such as sexual risk behaviors, current smoking and drinking alcohol behaviors, injecting risk behavior, use of unsafe cleaning needles, sharing cleaning bowls, and sharing dilute heroin mixture, criminal behavior, and early arrested frequency.

1.4.11 Sexual risk behavior

Under the sexual risk behavior, consider about having unsafe sex, associated with more than one partner and having paid for sex among prisoners which were assessed before arrest of their life time.

1.4.12 Unsafe sex

Heroin use prisoners have sex without condom use.

1.4.13 Injecting risk behavior

Injecting heroin users use one needle each other to inject heroin. One who inject heroin then another person also uses same needle without cleaning or clean in same bowl. Considering among heroin use prisoners have sharing needles with their friends.

1.4.14 Sharing bowls

Heroin users in prison use to share one bowl each other to clean their needles. Most of them clean their equipment in same bowl and also preparing their drug solution in same bowl.

1.4.15 Sharing dilute drug mixture

All heroin users in prison prepare their heroin mixture in one bowl and then they share each other.

1.4.16 Tobacco smoking

In prisoners of heroin users with tobacco smoking behavior will be assess their smoking habit of before arrest.

1.4.17 Arrack (alcohol)

Heroin used prisoners, their family and friends used preferable alcohol variety.

1.4 18 Alcohol drinking

Heroin users among prisoners with alcohol drinking habit consider about before arrest.

1.4.19 Criminal behavior

Considering heroin users in prison with involvement of crimes. Considering how many times they had experienced of early arrest and when they were arrested, they had involvement of criminal cases and other reasons of arrested in their lifetime.

1.4 20 Reason to arrest

Consider about heroin used prisoners' previous arrested reasons.

1.4.21 Heroin addiction risk level

Heroin use risk levels consider as mild, moderate, and severe. It will be assessing as 0-3 mild, 4 -26 Moderate and 27+ severe by using ASSIST V3.0, WHO standard questionnaire.

1.5 Conceptual framework

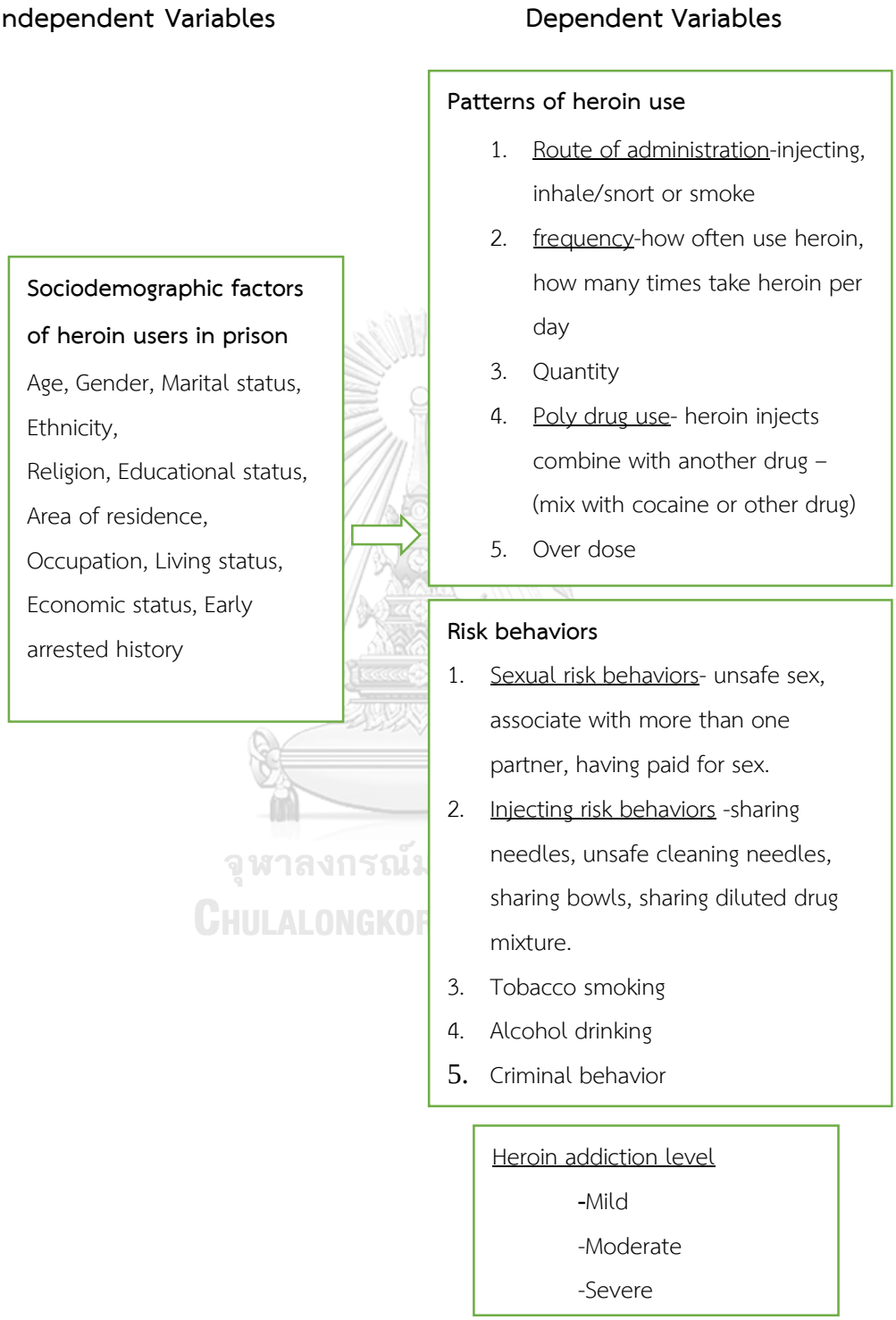


Figure 1:Conceptual frame work

CHAPTER II

LITERATURE REVIEW

2.1 Heroin use situation of the world

In the world, 0.7 % of adult population was consume of heroin and opium (U. N. O. o. Drugs & Crime, 2015). Among young adults between 18 - 25 age group of heroin use more than doubled in the past decades (CDC, 2015). The world possible opium production reached 7,554 tons in 2014 which was reported the second highest amount. Further, from 2012 to 2013 heroin seizures were increased by 8% (U. N. O. o. Drugs & Crime, 2015). The number of 153,000 present heroin users were reported in US in 2007(Services, 2008). In additional, four of every five drug related deaths were reported in Europe mainly due to heroin addiction (E. N. C. f. D. a. D. Addiction, 2008). The majority of people who had experienced of quantity of heroin use. Usually injecting heroin users use between 1/4g and 1g per day and it chases between o.5g to 3g at the maximum abusers (IDMU, 2017).

Polydrug use

Polydrug use refers as those who use more than one drug at the same time (E. M. C. f. Drugs, Addiction, & Portugal, 2002). Further, people use more than one substance within a specific time period is multifaceted (Boeri, Whalen, Tyndall, & Ballard, 2011).

It also mentioned that the concurrent consume of multiple drugs, of the combination of drugs (Swan & Ritter, 2001). People are using heroin, they also prone to abuse multiple other substance (cocaine, prescription opioid pain killers) (CDC, 2015). It was estimated that more than 9 in 10 individuals who used heroin with at least one another drug. There were 45% of people who used heroin were also addicted to prescription opioid painkillers (CDC, 2015). Majority of heroin users also use cocaine as a combination (Leri et al., 2003). Seeking of high effect from heroin, people prone to consume more cocaine which leads overdose too (Narconon, 2017).The combine of heroin and cocaine may lead to overdose. Injecting heroin users commonly use cocaine and methamphetamine also associated with overdose (Meacham et al., 2015).Further heroin users more prefer to have prior experience with hypnotics, glue, marijuana, and methamphetamine (Chiang, Chen, Sun, Chan, & Chen, 2006). There are many effects due to polydrug use: mainly it is maximized drug effect, maintain negative effects (balance or controls) and additional seek of effect. Further using polydrug to have and prolong, pleasurable experiences (European Monitering Center for Drugs and Drug Addiction, 2002). Especially use of large dose of alcohol and heroin combination were identified as a high risk of overdose and leads to increase mortality (European Monitering Center for Drugs and Drug Addiction, 2002).

Overdose

Overdose can be occurred when someone take too much of drug (MedlinePlus, 2016). The person who use excessive of drug and leads to toxic reaction may occur in serious, harmful or death (N. I. o. D. Abuse, 2016). Heroin is very high addictive opioid drug. Heroin users often use heroin with other drug or alcohol. This situation is specially very dangerous because it may lead to risk of overdose (N. I. o. D. Abuse, 2014). Heroin users can achieve strong euphoric effects very nearly due to use high dose of drug and combination of heroin (J. D. Jones, Mogali, & Comer, 2012) (C. M. Jones, 2013).

Patterns and risk behaviors

Heroin users use their drug by inject, smoke or inhale/snort (Brugal, Barrio, Regidor, Royuela, & Suelves, 2002). Although heroin administration main and most frequent mode was injection (N. I. o. D. Abuse, 2014). Comparing smoking and snorting method, heroin smokers were higher than snorters (Brugal et al., 2002). It was highly damaging threat of HIV/AIDS is directly related to heroin injection (U. N. O. o. Drugs & Crime, 2010). Most severe heroin abuses associated with sharing of needles and sharing of drug preparation can lead to infections of Hepatitis B and C, HIV and host of other blood bore virus (N. I. o. D. Abuse, 2014). Further, those who infected with viral infections, spread through their unprotected sexual contact (N. I. o. D. Abuse, 2014). It was estimate that,17000 new hepatitis C infections occurring in 2010 in USA (N. I. o. D. Abuse, 2014). Out of 53% were injecting drug users (N. I. o. D. Abuse, 2014). Hepatitis B

infection among injecting drug users were reported to be high as 20% in USA (N. I. o. D. Abuse, 2014). Majority of drug users (heroin, cocaine and alcohol) have high risk sexual behaviors such as inconsistent or no condom use, having sex for money and use multiple partners (Raj, Saitz, Cheng, Winter, & Samet, 2007). Further male life time injecting heroin users more likely to have men who have sex with men as well as high risk of HIV, Hepatitis C infections among them (Beyrer et al., 2005).

Most of drug abusers also likely to be cigarette smoked. It was mentioned more than 2/3 of drug users were regular tobacco smokers as well as abusing alcohol (Patrick Zickler, 2000). Heroin users use alcohol as intoxication (Raj et al., 2007). Chronic alcohol users more frequent with longer evidence of heroin abuse as well as heroin abuser also become a chronic alcohol abuse (Dobler-Mikola et al., 2005). Heroin users with alcohol drinking and cocaine use strongly related (Hasin, Fenton, Beseler, Park, & Wall, 2012). Smoking cigarettes were common with opiate and cocaine users (Epstein, Marrone, Heishman, Schmittner, & Preston, 2010). Most of illicit drug users smoke cigarettes to avoid bored in a party or release tired /stressed (Madu & Matla, 2003). It was reported that high prevalence of tobacco smoking among heroin users (90%) (Warner-Smith, Darke, Lynskey, & Hall, 2001). Cigarette smoking extremely related with heroin users. Those who use cigarettes were sixteen tines more prone to have tried heroin (Warner-Smith et al., 2001). Further, generally more than 80% of tobacco smoking, among heroin users (Pajusco et al., 2012).

In summary, heroin is high addictive drug and most of heroin users compel to use polydrug. Therefore, it may lead to overdose. Injecting is the most common administrating mode of heroin. Huge threat of sexually transmitted disease spread among heroin users associated with risk behaviors. Further out of drug users' high death rate were reported in heroin users in worldwide.

2.2 Heroin use situation of Sri Lanka

In Sri Lanka, the most common abused drugs are heroin and cannabis (Drug & Crime, 2000). Heroin is the second major addictive substance since 1980 (Drug & Crime, 2000). Majority of heroin uses were reported from Colombo district (NDDCB, 2016). Annually, it was estimated 40,000 to 50,000 heroin uses in Sri Lanka consumed throughout 763kg of heroin every year (NDDCB, 2013).In 2015, among drug users there were 32% of heroin users reported (NDDCB, 2016).

Patterns and risk behaviors

However, still limited in injecting heroin use in Sri Lanka (less than 2%) (WB, 2012). Therefore, heroin smoking was the main method (Dissabandara et al., 2014). Because of heroin is not accessible in appropriate quality. Low quality heroin commonly use with paracetamol or pain killers (Albertin, 2009). The most of injecting heroin users were males, aged group between 20 to 40 years (Senanayake et al., 2005). Majority of them from Colombo and close to metropolitans as well as lower social level, labors

(Senanayake et al., 2005). Most of heroin users preferred to use combination of cannabis (Dissabandara et al., 2009). Apart from fewer heroin users use valium (Dissabandara et al., 2009). All drug users were current tobacco smokers and they compel to use tobacco in their earlier or adolescence (Dissabandara et al., 2009). Majority of heroin users using alcohol (65%) as well as current smokers (Dissabandara et al., 2014). Involvement of criminals common in drug users.

The knowledge of HIV infection and condom use experience were very low among injecting drug uses (30.8%) (WB, 2012). Drug users having high risk of sex with commercial sex workers as well as regular condom use were very low (Dissabandara et al., 2009). Smoked heroin and alcohol using people with men who have sex with men were associated with sexually transmitted disease specially, most common in syphilis and less common in condom use (Ranatunga et al., 2014).

To sum up, heroin is the second common addictive drug in Sri Lanka as well as not available in proper quality. Therefore, heroin users more prone to use many polydrug such as pain killers. Cannabis also the commonly use combine with heroin. Most common route of heroin use is smoking in Sri Lanka. There were few injecting heroin users (2%) in Sri Lanka. Although, it may lead to threat of HIV/AIDS spreading through heroin users.

2.3 Health behavior theory

Social cognitive models

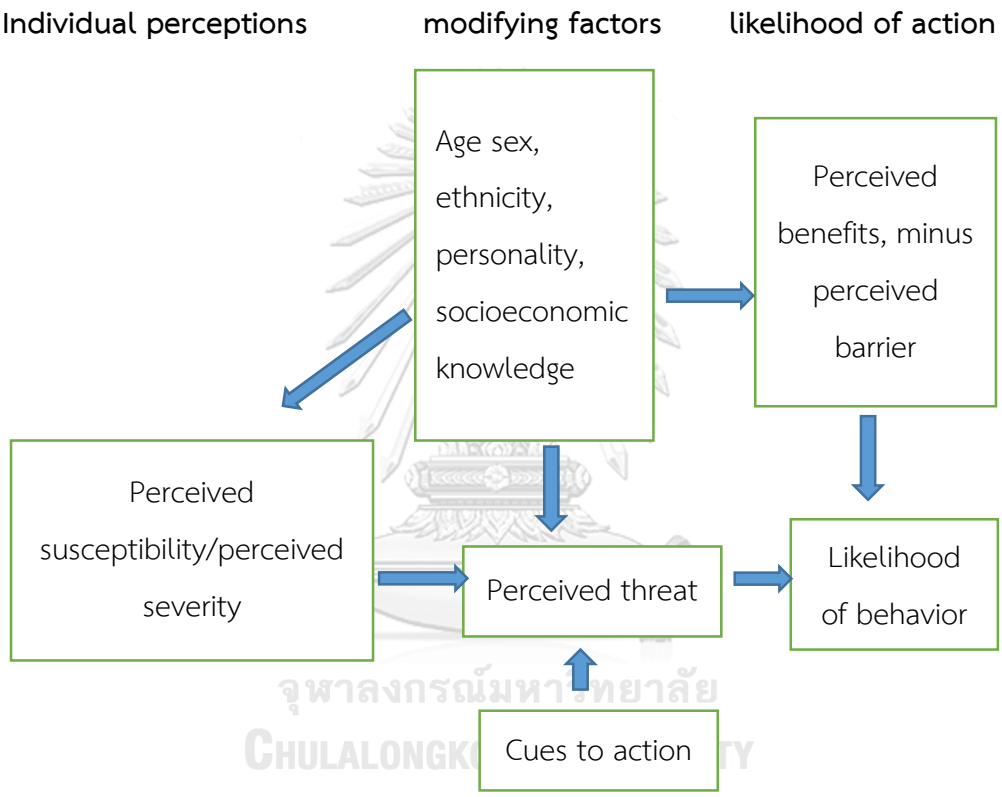
Social cognitive models refer to group of similar theories. This models specifies a small number of cognitive and effective factors (beliefs and attitudes) (Bandura, 1977). It consists with observational learning, self-regulation and self-efficacy. People who observe many things, it could process the new behavior, but their studying may not be influenced until a later point or never at all. Social-cognitive theory is behavior in due course comes to be self-regulated (Bandura, 1997).They believe that people ultimately start to restrict their self-learning and behavior. Expectations of consequences of future responses depend on how present reaction are reinforced or punished.

The social cognitive behavioral model point on an individual's reaction of high risk status. The person and environmental risk factors interact each other and individuals who select to involve in may be vulnerable to the avoidance of violation effect which is self-blame guilty and loss of self-control that individual often experience after the violation (Marlatt & Donovan, 2005).

According to the theory, heroin users their thoughts and attitudes use for negatively effect on the life. Therefore, they compel to their thoughts towards using heroin is good for them and can appear as a hero in the society. Thus, they continue their heroin use

Health Belief Model (HBM)

This is done by focusing on the attitude and belief of individuals.it has four constructs such as perceived susceptibility, perceive severity, perceived barriers and perceived benefits (Taylor, 2007).



Source: (Stretcher, Champion, & Rosenstock, 1997).

Figure 2: HBM

The foundation of this model is understanding that a person who take a health related action in future. If the person with negative health condition about HIV, they can have avoided in this situation. Further they have a positive thinking that by taking

a suitable action (i.e., using condoms) the person who believes that they can do the recommended health action successfully, she / he can use relevant action comfortably and with confidence.

Heroin users when they positively thinking about their health condition about HIV and other sexually transmitted diseases, they cannot avoid their risky sexual behaviors. Therefore, they continue risk behaviors.

Protection Motivation Theory (PMT)

This Theory was originally developed to explain how people react to fear inducing health threat communication or fear appeals (Maddux & Rogers, 1983). PMT an emphasis behavioral changes on cognitive process. According to PMT there were two source of information such as environmental (verbal encouragement and observational learning) and interpersonal information (prior experience).

This information reveals either and adaptive coping reaction (increase one's health) or maladaptive coping (decrease, avoidance).

If heroin users do not react (decrease avoidance) their health, they continue their heroin use and risk behaviors. It will be threat for their health in future.

Theory of Planned Behavior (TPB) and Theory of Reasoned action (TRA)

These theories elicit the relationship between behavior and belief, attitudes and intentions. Both theories assume behavioral intention is the most important determinant of behavior. According to TPB and TRA models, behavioral intention is affected by a personal attitude toward performing a behavior and by belief. Whether individuals who are important to the person accept or reject of the behavior. This mole assumes culture and environmental factors, operate through the models constructs and it is extremely not explaining the likelihood that person will trust a definite way (Ajzen & Fishbein, 1980).

The TPB differ from TRA in that it includes additional construct, perceived behavioral control. People's belief can control a specific behavior themselves.

Behavioral intention, attitudes, belief can measure as likely or unlikely, good, neutral or bad and agree or disagree respectively.

Heroin users' attitudes belief effect on their health. Their thoughts positive towards heroin use then they compel to use more and more.

Attribution theory

How to explain other's behavior or our own in their world. This theory shares out how the social perceiver utilize information to reach at causal clarification for events. It inspects what details is converged and how it is combined to form a causal judgment (Fiske & Taylor, 1991).

Weiner suggested that this theory can classify by three dimensions. Internal-External attribution, stable- unstable and controllable – uncontrollable (Weiner, 1972). Internal attribution – the procedure of promoting the cause of behavior to some inner characteristic rather than to exterior forces.

External attribution – some situation or event control by external person rather than interior characteristic.

Heroin users' behaviors control by external person positively then they continue their drug use and get confidence about heroin use good.

To conclude, these health behavior theories more effective to design intervention of behavioral changes, attitudes and belief as well as expectation of future events and outcomes. These theories also propose individuals will select the action that will create most likely to positive outcomes. Further, these theories useful for promoting treatment methods and improving health issues and settings.

2.4 Heroin use and Socio demographic factors

There were many factors associated with Heroin users such as social, behavioral and psychological factors highly affected. Apart from educational status also more common predictor. Most of them were reported as absence of parents during their childhood. There were many risks appear in their family people who addict with Heroin.

Specially due to less pay attention of their children leads to depression, anxiety, educational defects and family problems. Not only that suicide occasions are increased with Heroin addicts (Brown, 2004).

According to this study 34% consists of young heroin users (18-24years). Out of 60%were male. Tertiary education had competed only 26%. Majority of them were lived with their parents (42%).Involvement of criminals indicated as 28% and 20% of them were had employments. Nearly 24% of early arrested history (Mills, Teesson, Darke, Ross, & Lynskey, 2004).

In this study mentioned, of 42.8% heroin users' heroin started in prison. Among drug used prisoners nearly 40% were heroin users. Almost 62% ever used heroin in prison.20-30 age group were more prone to heroin use in prison than age 16-20 age group. It was indicated that, more than three times as desire to get heroin in prison. According to ethnicity, heroin uses white prisoners more than black (Boys et al., 2002).

The study shows heroin and other substance users with sex difference indicating their treatment requirements. According to sex different from pathways to heroin addiction and need different treatment methods. They had bad experienced of maltreatment of their childhood, parental substance uses and parental disagreements. Females were more possible than males to involvement in range of harmful situations

in childhood. Women were most desire to continue unwanted sexual activity and violence as adults after the age of 18. Their heroin introducer often their boyfriend or partner (Shand, Degenhardt, Slade, & Nelson, 2011).

The study identified factors that effect on ethnic minority drug abuse people. The most common addictive drug was heroin among them. There were many facts impact on drug use ethnic minorities. Majority of them have family problems and criminal behavior. They prone to drug abuse (40%) due to peer pressure and drug dealers. Further there were many barriers to avoid drug addicts of ethnic minority people. Some of factors are low educational status, law income and reluctant to prevent of addiction. Also after rehabilitation, they have lack of confidence to move with society (Tang, Wong, & Cheung, 2006).

The study sample was included in black and white adult drug users in United States (Maryland, Baltimore). This study reveals that, over 33 years old individuals more likely use nasal heroin than injecting heroin. Further, black more prone to snorting heroin than compare to white. According to this findings, there were high risk of infectious diseases among heroin and cocaine users. Among these participants with approximately high probabilities of snorting heroin and smoking crack but less probability of drug injecting. Although Canadians with low probability of injection drug use, but majority of them used injection drug. Baltimore sample also same. This

research indicates that, evidence of injecting drug use among both cocaine and heroin users drug uses who favor other methods of administration. Canadian sample revealed injecting heroin users with multiple drug consuming such as cannabis, alcohol. Heroin and cocaine users with high risk of infectious diseases (Harrell, Mancha, Petras, Trenz, & Latimer, 2012).

The study shows heroin use among 18- 25 year olds were increased in impact of public health. Because, most of young injecting heroin users with hepatitis C infection. Further, young people also abuse to opioid pain relievers. The high prevalence of HIV in white, non-urban young adults, those who followed by used opioid pain relievers, it may lead to consume heroin. However, there were association between heroin risk behaviors like routine of administration, abuse criteria, (associated with legal problems, relationship problems, interference with responsibilities), spending time for drug use, amount of taking drug, and heroin availability and past year nonmedical use of opioid pain relievers (C. M. Jones, 2013).

In this study mentioned non-medical use of prescription opioids influence more prone initiation of heroin. Heroin users were notably higher for males than for females. Consider about ethnicity most of black (62.5%) were more prone to heroin initiation than white. Most of black who were less educated, lower income and male aged 43-49 years more likely to initiate heroin than white. Past history of marijuana, stimulant and cocaine users were also more susceptibility to initiate heroin. They mentioned

that the transmission of infectious diseases may occur as a result of initiation of injection of heroin (Banerjee et al., 2016).

The study mentioned baseline measurement of health outcomes for parents and child relationship among people approaching intervention for opiate use. Children and adult outcomes were assessed by using standard questionnaire (becks Depression and anxiety intervention). Majority of alcohol drinkers followed by heroin (80%). Substance use adult with increase in anxiety, it may affect their family and children. Lack of parental and child relationship major issue of drug abuse in children. Parent care is most important to reduce their children's drug addiction such as use of heroin, illicit methadone and cocaine. Also those who living with drug users, it is associated with increase in heroin use (Comiskey, Milnes, & Daly, 2017).

The study identified treatment of heroin and opioid drug users needed to wide range of treatment efforts. ethnicity as well as income, insurance coverage affects on drug use and treatment On the other hand, their culture and infrastructure facilities must be developed. Due to no use of Opioid use disorder (OUD) treatment, most people accompanied by OUD. They mentioned that many sided interventions, comprising effects to access insurance coverage, are essential to change attitudes and knowledge regards addiction treatment. It is enable to treatment seeking better effects

could target adolescents, minority groups, and the uninsured to improve access to treatment (Wu, Zhu, & Swartz, 2016).

The family is an important cultural context that can have important implications for substance abuse treatment in the Mexican–American population. Stopping long-term heroin injection behavior is a significant challenge for any individual, and thus the enabling role of families is particularly concerning, especially in families with a legacy of drug use. In particular, one who use drug it may affect on other family members to initiate drug use. Additionally, they identified that women were prominently featured in men's experiences in this study, and thus special attention should be given to how these family members' influence can be successfully leveraged in existing drug treatment plans (Applewhite et al., 2016).

The study data were obtained from national survey on drug use and health. It shows United States participated recent drug users of adolescents of age 16 to 17 (47%) years old, including females, school gave up and youth who have experienced of inhalants and marijuana, which have significantly high odds of heroin use and injection drug use. Sociodemographic factors including gender, ethnicity, and incarceration history associated with heroin use. Drug users who started cigarettes smoking before the age of 15, as well as who engaged in recurrent criminals of who had history of incarceration had elevated odds of heroin use (Wu & Howard, 2007).

In this study mention that, most of young people compel to take heroin due peer pressure, lack of employment opportunities, and an abundance of unstructured free time. And also football playing as a leisure, has become an opportunity for initiation into heroin use. Most of youth first exposed to heroin and share cigarette smoking share with friends on the football pitch.

They exposed to four factors have made easy to change from non-injecting to injecting practices. First, transition point of drug consuming and the second culture, hangouts, and the peer pressure, desire, and cheating and build of relationships with young and introduce new experience of heroin. Third, it is realized that, easy way of using heroin. Further, easy to prepare as well as quickly gain action. This type of people with establish HIV/AIDS epidemic. But most of youth are aware themselves of the dangers of needle-sharing. In this study shows how they progress to injecting, and the importing role of local neighborhood hangouts in facilitating this process. In the football grounds, rented room, are the spaces where youth meet regularly in small and large groups. In these rented rooms and hangout places, rich and poor, educated and illiterate youth spend a lot of time observing and learning from one another. Poor and employers stay with youth and spend time in their hangout spaces. Dullness, depression, peer pressure, excitement, stress, and anxiety, curiosity all contribute to heroin addiction (McCurdy, Williams, Kilonzo, Ross, & Leshabari, 2005).

According to this study most of young heroin users from law economic neighborhood and nearby suburbs. Initiation of heroin between younger (aged 20-29) and older (aged 30) age group. Majority of them were unemployed, homeless or insecurely housed. Firstly, youngers started with opioids pills and followed by heroin but orders initiation with heroin and then followed by other drugs such as cannabis, cocaine or methamphetamine (Mars, Bourgois, Karandinos, Montero, & Ciccarone, 2014).

In this study revealed life time drug use was connected with age, ethnicity and gender family income education. It also depends on heroin administration route. At least 30.9% of adolescent have illicit drug experience. Adolescent drug users had progress to heroin use (1.4%) and injecting (1. 2%). Smoking of heroin more common. (0.17%) than injecting (0.1%) among adolescents. Most of heroin initiated were male than female and both heroin and cocaine users were more than only heroin users. Adolescents who have use inhalants of drugs, it was significantly increased in heroin used (Lejuez, Bornovalova, Daughters, & Curtin, 2005).

Heroin users had poor school attendance, their friends having with illicit drug use and experience of sexual abuse or physical abuse in childhood than non-heroin users. Further they have family problems, having negligence in childhood and family history of illicit drug use (Chiang et al., 2006).

In conclude, among heroin used prisoners socio demographic factors such as age gender, ethnicity, education, family background, economic status, marital status and culture affect on heroin use.

2.5 Patterns of heroin use

According to the cohort study, determined the predictors of transition to injecting heroin user among non-injecting users. The former injecting drug users more prone to continue injecting use (70%) than non-injectors. Although, it does not mean non injecting heroin user always transfer their administrating way. Heroin user's social status most important factor to transition to non-injecting to injecting. However, old age former injecting heroin users likely to follow drug treatments. People who were homeless and big communication with injecting drug promoter were more likely to start injecting. Heroin users who were abuse physically or sexually and had higher chance of exposure to injection drug use as a pain killer or self-medication (Neaigus et al., 2006).

In this study shows, 79% imprisonment heroin users were current users (one month before arrest). Out of 71% were lifetime heroin users (ever used).majority of heroin

used prisoners recent heroin used (one year)(80).among heroin used prisoners, 67% severely addict to heroin (Strang et al., 2006).

In this study mentioned, most injecting heroin users more prone to involve in polydrug use as well as overdoses. Heroin over dose cases were more prefer to have alcohol and benzodiazepines. The most usual pattern was taking heroin following heavy alcohol before go to bed. After using heroin then followed by heavy drinking. This study reported that heroin overdose cases were early 30s of age of injecting heroin users. Further, it was increasing homicide victims among overdose heroin users. Further there were more susceptibility of suicide attempts (36.5%) (Darke, 2016).

According to the study review of heroin and cocaine use as polydrug. A notable number of heroin users use cocaine. There were many different way and reasons to use polydrugs. Some people both heroin and cocaine inject simultaneously at the same time to enhance the effect. Some other users use cocaine and heroin mix together due to not enough heroin. However, they use as poly drugs as enhance their effect or decrease their withdrawal symptoms (Leri et al., 2003).

The qualitative and quantitative study shows most of heroin users were reporting injecting method. Apart from, they used to share common cocker (86%) and bowl to

prepare sharing drug (82%) with unbleached syringe. Most of them never clean before use to inject heroin as well as reported 22% of were sharing needles. HepC transmission has been found to be strongly associated with cooker sharing (Koester, Glanz, & Barón, 2005).

The majority of heroin users also use cocaine. Most of hereon with alcohol abusers were younger than older (Dobler-Mikola et al., 2005).

According to the study commonly use of heroin with other combination of drugs specially use cocaine (70%). Some of heroin users use diazepam (11%) and methadone (9%) as a combination. Male heroin users also more likely to use heroin with benzodiazepines. Majority of heroin users (65%) were injecting drug use. Using combined drugs with heroin among youngers more prone to psychologically distressed. Heroin and alcohol users of female less than males. Females mainly use heroin and cocaine. Further poly drug use including alcohol may lead to risk of overdose (Beswick et al., 2001).

The study mentioned frequency of heroin use can affect on the relation between overdose and administration route. The main route of heroin use was smoking (48%).Among heroin users with injecting and snorting were 34.8% and 6.3% respectively. Majority of snorting heroin user were early injectors (11.1%). Daily heroin

users with increasing frequency of affect on overdose (10%) than non-daily heroin users. Heroin with tranquillizers (43.5%), cocaine (32.8%) and alcohol (31.8%) usually used. Polydrug use mainly increased in overdose which was high risk of fatal (Brugal et al., 2002).

To sum up, there were many patterns of heroin use among prisoners. Heroin use as smoking, inhalation or injecting. Most of them use heroin with cocaine. Polydrug use is common with heroin users. Amongst alcohol and benzodiazepines also commonly used. Many of heroin users associated with frequency of heroin use and overdose use. These patterns also associated with sociodemographic status such as age and gender and ethnicity mostly affect on heroin use patterns.

2.6 Heroin users related risk behaviors

This study indicated hundred percentage of imprisonment heroin users were used injecting method. Out of 49% had shared needle habit. Among them 57% with tattoos experienced. Nearly 24% used common blade to tattoo making. Almost 23% of them had history of STD. Majority of used multiple sex partners (41%). Considering early arrest history, 56% had more than three-time arrest experienced (Rowhani-Rahbar, Tabatabaee-Yazdi, & Panahi, 2004).

The study shows risk behaviors among incarcerated drug users. Most of heroin users preferred to take combination of heroin and cannabis (79.1%) as well as use three times a day (37%). Polydrug users were mentioned that if combine two drugs which leads to increase the effect. Most of heroin users favor to inhaling smoke of heated heroin. According to this study, in Sri Lanka heroin users commonly use of benzodiazepines (94%) and fewer of use valium as combination. Those who use heroin and benzodiazepines has reported high risk of sexual behavior. Majority of drug users have experience of criminals (Dissabandara et al., 2009).

According to the study, smoking strongly related with heroin craving (50.3%) and heroin use (41.7%). This research reveals smoking increased of heroin and other drug craving (Epstein et al., 2010).

Most of drug adductors used heroin as a first drug use (50%). They commonly use method was snorting. Injecting heroin users were reporting very less (1%).Tobacco smoking is the high risk factor for drug addicts in adolescents in Sri Lanka. Many of adductors compel to rehabilitate themselves (75.8%). After rehabilitation, their parents should pay more attention because there have high tendency to take drug again. Most of addicts more than one time admitted to rehabilitation centres (55%) so that indicate less success in the process of rehabilitation (De Silva & Fonseka, 2009).

In this study revealed people who living in remote areas and lower level education associated with heroin users. Most of heroin users with Hepatitis B as well as they were older than 34 years. Further, hepatitis C, were higher among those that used the drug via injection and shared contaminated drug. In addition, it was an increased risk of hepatitis C in long term heroin use individuals. Various risk factors connected with blood born infectious diseases like hepatitis C, HIV and syphilis among heroin users. Syphilis had been associated with shared needles used multiple sex partners. Injection drug behaviors were notably associated with above mentioned diseases. Injecting heroin consumers were remarkably associated with their marital status. living in a remote district, may contribute to a lower level of educational among these heroin users (Wang, Lin, Chiang, Su, & Chen, 2013).

Robins et.al was deservedly considered to be seminal in the study of the epidemiology of heroin use. Despite being a study of a unique scenario, the study sets out in microcosm many of the key factors that play out in the development and maintenance of substance addiction beyond the pharmacology of the drug: price, availability, the route of administration of the addictive substance, the availability of other substances, social norms, education and life circumstances (Hall & Weier, 2017).

Heroin dependent people living with Heroin (PLWH) of this study scored significantly higher than HIV-negative group on different risk taking, impulsivity, and

sensation seeking dimensions, which may render them susceptible to the practice of riskier behaviors. Risky behaviors among opiate dependent HIV patients is the possible contribution of such behaviors to the spread of HIV to the general public. Since the prevalence of psychiatric disorders is quite high among PLWH. Considering that the main route of HIV acquisition in Iran is using drug and that current heroin addicts in both groups scored higher in non-planning impulsivity compared to former addicts (Paydary et al., 2016).

This study indicates that early Age At Onset (AAO) of opiate use and more rapid transition to regular use are two different dimensions of illicit drug misuse that share common risk factors and interact one with another. They are associated with the severity of the opiate dependence in methadone maintenance sample, confirming previous findings. They could lead to a higher risk of overdose (38%) and imprisonment and lower chance to ever get married. The study also mentioned they have mood (61%) and anxiety (53%), mood disorders and suicidal attempted (31%) (Karsinti et al., 2016).

According to the study of T.O Ihongbe demonstrates, in United States 2% of young adults ever using heroin. The study also shows a shift towards heroin use among young adults in higher socio economic status group. snorting is the most common administration route among young adults. Taking no prescribed opioid pain relievers

and use other illicit drugs, smoking cigarettes are the greatest odds of the young adults who used the heroin and they under offence according to the law (Ihongbe & Masho, 2016).

This national study of American adolescents identifies several subgroups of recent drug users, such as females, school dropouts, and youth who have used inhalants and marijuana, which have substantially increased odds of heroin use and Injection Drug Use (IDUs). Screening, prevention, and treatment interventions targeted to these groups might reduce medical and social complications of heroin use and IDUs. Generally, their findings suggest that adolescent drug users who have progressed to heroin use tend to initiate cigarette smoking early, use inhalants and marijuana as well as early school leaving, and engage in delinquent or criminal activities (Wu & Howard, 2007).

The study revealed heroin and cocaine users with high risk of HIV and HCV. According to the study nasal heroin users were more common than injecting. Injecting heroin users among poly drug users with sharing needles were very common (2.5 times more, OR=2.66). Subpopulations of cocaine and heroin users differed in demographic classifications, HIV-risk behaviors, and Hepatitis C infection. All subpopulations included substantial numbers of HIV-positive individuals. Findings provide further evidence that

significant infectious disease risk have among non-injection drug users. Further there were high susceptibility of cigarette smoking, drinking alcohol with snorting heroin (over 50%) (Harrell et al., 2012).

Preventing the transition to Injection Drug Use (IDU) among Non-Injective Drug Users (NIU) are fundamental to preventing and controlling HIV, HBV, and HCV epidemics among heroin users and from them to their sex partners. The prevention of transitions to injecting among infected NIUs can help prevent an increase in the number of infected IDUs, and reducing transitions to injecting among uninfected NIUs can help shrink the pool of drug users susceptible to parenterally transmitted infections and reduce the spread of infections to their sex partners. Preventing transitions to injecting among non-injecting heroin users (as well as non-injecting users of other hard drugs), by focusing on social network influence as well as individual susceptibility, is essential in helping to break the chain of drug injecting-related epidemics of HIV and similarly transmitted pathogens and in preventing other adverse health outcomes related to drug injecting (Neaigus et al., 2006).

The study revealed that, life time heroin injecting people (76.3%) with a high prevalence of HIV (19.2%), hepatitis C (89.9%), and pulmonary tuberculosis (15.7%) (Radiological evidence) among heroin dependent individuals of treatment seekers in

Malaysia. Injection drug use, sharing needles, less condom uses and ethnicity considerably associated with HIV. And also they have prolonged history of heroin use and history of imprisonment or arrest (Chawarski, Mazlan, & Schottenfeld, 2006).

Most of long term use of non-injecting heroin with HIV, HBV, or HCV infection. Sharing non injected instrument and risk sexual behaviors were significantly correlated with them. According to this study non injected heroin use males were more than (69.1%) female and were under the age of 30 years (34.7%). Consider about ethnicity African Americans were more likely to use heroin than others. Sexual risk also related with hepatitis B infection. Not only that having sex with MSM leads to occurs syphilis. However, many participants included in law socioeconomic factors and variety of ethnicity which were depend on drug addiction (Gyarmathy, Neaigus, Miller, Friedman, & Des Jarlais, 2002).

Among heroin use young people with criminal activities reported prominently (62%). Out of 46% had property crime experienced. Drug trafficking, fraud, violent criminals another reasons to early arrested (46%,17%,12% respectively). Most of males more prone to do committed property crimes than females heroin users. Among them, property crimes reported once per week consider about one month (47%). Majority of fraud and violent crime prominently occurred less than weekly (51%,65% respectively) (Mills et al., 2004).

According to the research, heroin users were compelling to join property crime. Among70% of West Sydney heroin participants were responded to active property offenders (Beyrer et al., 2005). In this study also shows only heroin users and heroin and cocaine users were associated with criminals (71.8%) and ever have been arrested at least once in their life (Farabee, Joshi, & Anglin, 2001).

To sum up, according to review on risk behaviors and heroin use, there were many risky behaviors among heroin used prisoners. Heroin users with many risk sexual behaviors such as unsafe sexual activities, associated with multiple sex partners, having paid for sex activities. Further they associated with unsafe cleaning equipment. Most of them use sharing needles, sharing drug mixture, and sharing drug preparation bowl and cleaning bowels. Heroin users also associated with smoking, alcohol drinking and criminal behaviors, especially property crimes and be arrested at least one time in their life. Further, heroin uses highly risk for HIV, Hepatitis, and syphilis. According to these findings, heroin use risk behaviors also associated with sociodemographic factors

2.7 Severity of heroin addiction

This research reveals there were no notable difference in between males and females in the diagnosis of mild, moderate and severe stages of heroin addiction.

Farther, there was no significant differences between sociodemographic factors and addiction severity except marital status (Clark, Masson, Delucchi, Hall, & Sees, 2001).

This study mentioned there were association between heroin addiction severity (mild, moderate and severe) and genetic influence(Xu et al., 2014).Those who use heroin long term 80% of severely dependent and considering amount per session and frequency of used 64% severely addicted. Out of 9% and 9% moderately mildly addicted respectively (Woody, Cottler, Cacciola, & Grant, 1993).

Addiction severity depend on gender and other socio economic background. According to the study African Americans and Hispanics were more prone to use heroin and tobacco than whites. Whites were mostly using other opioids than African Americans and Hispanics. HIV risk and injecting drug risk were high in whites than other ethnic groups. Male were more tent to use heroin than female. Family problems social problems and law quality life associated with heroin and other drug addiction severity (Wu et al., 2010).

This study demonstrates that typical heroin and methamphetamine (MA) users may experience a similar four-stage addiction process, which are experimentation, occasional drug use, regular drug use and compulsive use. But MA users might undergo a longer addiction process in days (McAndrews, Sarkar, & Wang, 2016).

To conclude, according to severity of heroin addiction, there are three stages such as mild moderate and severe. Severity of addiction also depend on gender, ethnicity and other socio economic back ground as well as patterns of drug use

CHAPTER III

METHODOLOGY

3.1 Study design

The cross sectional study was conducted in *Welikada* prison, Colombo, Sri Lanka.

There are three security prisons in Sri Lanka. Out of three, the largest as well as maximum security prison is *Welikada* prison. This prison was situated at capital city of Colombo. Other prisons are situated in away from Colombo such as *Bogambara* prison at Kandy and another one is *Mahara*. *Welikada* prison also has gallows and own hospital. Therefore, the study will be focused on *Welikada* prison, Colombo.

Population – There were 11171 substance use in prison. Data was collected by using drug related arrested people in the "*Welikada*" prison Sri Lanka.

3.2 Inclusion and exclusion criteria

Inclusion Criteria

- Heroin users
- Males
- Age group 18 years old and above
- Willing to participate in the study

Exclusion criteria

- Severe depressive people
- Deaf people
- Dumb people

3.3 Sample size calculation

In prison there were 11,171 substance used (in prison 2015), out of 32% heroin users. 32% is the expected value for heroin uses according to the existing data. Considering the feasibility and the accuracy of the estimation, it was decided to have 5% desired precision level. The calculation of the sample size for the study is given below.

Sample size was computed using the sample size formula $n = z^2 [p (1-p)]/d^2$ (Maddux & Rogers, 1983).

- $n = z^2[p(1-p)]/d^2$
- z = z value corresponding to the 95% confidence (1.96)
- P = expected proportion of heroin uses (32%)
- d = absolute precision (5%)
- n = 1.96*1.96(0.32*0.68)/ (0.05*0.05)
- n = 334

3.4 Sampling techniques

Sampling method

Purposive sampling method was used as sampling method. It was consisted of all the heroin users who age group18 years and above. Data was collected in all of who were arrested by using of heroin in the prison excepted in exclusion criteria.

Questionnaire translation

Firstly, questionnaire was constructed by English language. Then it was translated into Sinhala language. Using forward backward translation method for questionnaire translation (WHO - Management of substance abuse research tools) (Organization, 2009).

Forward translation step

Production of two independent forward translations of the original questionnaire by two professional translators, native speakers of the target language and fluent in the source language.

Production of a reconciled language version on the basis of the two forward translations and of a report in English explaining translation decisions.

Backward translation step

Production of a backward translation of the reconciled language version into the source language by one professional translator, native speaker of the source language and fluent in the target language.

Comparison of the backward translation and the original, analysis of the discrepancies encountered, resulting, if necessary, in changes in the reconciled translation in the target language, and subsequent production of a second language version. Production of a report in English explaining translation decisions.

Firstly, questionnaire was developed in English then it was translated into Sinhala (primary language in Sri Lanka). After that it was translated in to English and again be translated into Sinhala. The two English versions were compared for consistency. Sinhala version was used in this study.

3.5 Data collection

3.5.1 Procedure

Data was collected by using face to face interview. To collect the data from heroin users in prison Colombo. After getting permission from NDDCB and commissioner of prisons (Administration) and commissioner general of prison Sri Lanka, and be informed to meet administration commissioner of Colombo prison to discuss about data collection. Then time and date to be set for starting data collection. There were four to five interviewers were used for data collection. Data was carried out by medical doctors. To explain for interviewers about the research method survey procedure, ethics including confidentially in research prior to data collection and how to collect

data. Then they were trained how to interview heroin use prisoners by using questionnaire. Twenty to thirty minutes were spent for each of interviewee.

Participants had been provided with basic information such as purpose of study, instruction and expectation of the study. Written consent was obtained from participants before start of the data collection. After completing data collection and analysis, then to be completed the thesis and submitted for the exam.

3.5.2 Outcomes

According to the research, data was provided patterns of heroin use such as administration route, it was whether injecting, snorting/inhale or smoking, frequency of heroin use (life time use or not), quantity of use, polydrug use, overdose experience and level of addiction. Every one of heroin users in prison were assessed their patterns of heroin used of before arrest. Further in this research was provided risk behaviors among heroin use prisoners. Their sexual risk behaviors (unsafe sex, associated with more than one partner, having paid for sex, same sexual practice), injecting risk behaviors such as use of sharing needles, unsafe cleaning needles, sharing bowls, and sharing drug mixture with friends. Association of smoking and alcohol drinking among heroin users were also assessed. Early arrest status and history of involvement of criminals among heroin users in prison were given as outcomes.

3.6 Measurement tool

3.6.1 Tool

To collect data from heroin addicts in prison Colombo. Data was collected by using face to face interviewer administrated questionnaire. The questionnaire was composed in 3 parts.

Part 1- Sociodemographic characteristics

In the first part of the Questionnaire was consisted of questions relevant to demographic factors including gender, age, ethnicity, religion, marital status, educational status (when they leave from school, why they leave from school), area of residence (living with family, friends, girlfriend or another married woman), family background, occupation and monthly income.

Part 2 – Patterns of heroin use and risk behaviors

In the second part of questionnaire included in question related patterns of heroin use and risk behaviors. The patterns of heroin use section consist of eleven questions. The part of poly drug use and overdose experience in lifetime questionnaire obtained from technical paper of An Assessment of Harm Reduction Interventions among People who Inject Drugs in Thailand (Areesantichai C & Perngparn U., 2016). Considering patterns of heroin use, it was assessed life time heroin users had recent and current used situation, poly drug use, frequency and quantity of use and administrative route of heroin use.

The risk behavior part was consisted of ten questions. According to risk behaviors, consider about smoking and alcohol drinking status, sharing needles/equipment, drugs and bowls, sexual risk behaviors (condom use or not, multiple partners use and same sexual partners use), history of involvement of crimes and before arrest status were assessed.

Part 3 – heroin addictive severity- ASSIST V3.0

In the third part of questionnaire consists of heroin Abuse Screening Test. This standard questionnaire was obtained from ASSIST V3.0 (WHO -the alcohol, smoking and substance involvement screening test: guidelines for use primary care). This questionnaire was used for measuring heroin addictive severity. This test included 8-item brief screening tool that can be conducted by an interviewer or self-administered. Every question necessitates a yes or no response, and the tool can be completed. By using this tool to assesses drug use, in the past 12 months. The severity of addiction level interprets as 0-3- Low /4-26 - Moderate/ 27+ - High (WHO, 2002).

3.6.2 Validity

Used Item of Objective Congruence (IOC) to determine questionnaire content validity (Rovinelli & Hambleton, 1976).

Questionnaire validity of in this study was 0.7 -1. Questions with greater than 0.5 are considered as acceptable and question with 0.5 or less are unacceptable and rejected (Turner & Carlson, 2003).

3.6.3 Reliability

After reviewed, the questionnaire was revised in order to the expert recommendation. Then questionnaire was piloted on 30 heroin users in*" Boogambera"* prison Kandy, Sri Lanka since there are similarities in context as for the reliability of measurement tool. Scores calculation by using correlation coefficient formula. The Questionnaire part 2 reliability was 0.618. (reliability of Cronbach's alpha was 0.7 or higher (Tavakol & Dennick, 2011), or moderate correlation range, 0.54–0.79 were considered and acceptable (Chung, Pillsbury, Walters, & Hayward, 1998).

Questionnaire part 3 was used from WHO the alcohol, smoking and substance involvement screening test (guidelines for use primary care standard questionnaire) ASSIST V 3. Addiction Severity Index ($r=0.84$, $p<0.01$). Test - retest Kappa coefficients of agreement (K-values) were calculated for each question stem and drug category. K-levels ranged from 0.58 to 0.90 for question stems and from 0.61 (sedatives) to 0.78 (opioids) for substance categories, alcohol 0.7 and tobacco 0.84. K-levels greater than 0.4 are considered moderate, while levels above 0.6 are considered substantial. Test - retest reliability of the ASSIST questions is, therefore, substantial (W. H. O.-M. o. S.

Abuse & Abuse, 2006). Intraclass Correlation Coefficients (ICC) for drugs 0.965 (P<0.001) (McNeely et al., 2014).

3.6.4 Data Analysis

Using SPSS 17 statistical software package for data analysis. Descriptive analysis of the study population prevalence rates of heroin use were summarized and described by sample characteristics.

Data analysis by basis of the Pearson's Chi-square test to identify the relationship between dependent and independent variables. Each variables of Heroin use patterns and health risk behaviors are assessing independent of the other.

3.7 Ethical consideration

Ethical consideration was obtained from the ethic review committee, institute of Indigenous Medicine, University of Colombo, Rajagiriya, Sri Lanka.

3.8 Permission

The study was carried out by the permission of Chairman National Dangerous Drug Control Board Sri Lanka (NDDCB) and commissioner of prisons (Administration) and commissioner general of prison Sri Lanka.

CHAPTER IV

RESULTS

4.1 Demographics

The research sample consisted of 334 heroin used prisoners. The age range of participants were 22 -58 years and average of age was 37.85 $\pm$ 6.1 years (Table1). The age separated into two groups as 22-38 and 39-58 according to mean age. Out of 48.8% of heroin users were 22 to 38 years and 51.2% of were 39 to 58 years' age (Table2).

The majority of heroin users interviewed were Sinhalese from Colombo and their main religion Buddhism. Out of heroin used prisoners, 84.4% married. Considering about both age groups, most of 22-38 age group and 39-58 age group got married (85.3%,83.6% respectively) (Table 3). In Sri Lanka General Certificate of Advanced level (GCE A/L) is the highest level of school education. Almost 70% of them were low educated people which were participated at grade 5 to 10 only. There were 72.2 % of them their education was gave up due to reluctant to go to school and 14.1% had less economic issues. Nearly 99% of heroin users were not done in permanent job (labors) and 55.7% of their income in between 20000 to 30000 Sri Lankan rupees (1rupee = 0.0064USD) (Table 5). Majority of them lived with their wives.

Table 1: Mean and standard deviations

Variables	Total (n=334) Mean ± S.D	Range
Age	37.85 ± 6.1	22-58
Monthly Income	20,800 ±700	>10,000 - <30,000
Age at first use of heroin	30.8±4.2	16-42
Age at first arrest	28.2±4.7	16-51
Age at first tobacco used	25.1± 6.8	14-40
Age at first alcohol drinking	27.3± 5.4	17-45

4.1.1 Heroin used prisoner's sociodemographic characteristics

Indicating sociodemographic characteristics of incarcerated heroin users in Sri Lanka. Their ethnicity, religion, residency, marital status and educational levels interpret as their two age groups

Table 2: Age group among heroin used prisoners

Variable		n(%)
Age	22-38	163(48.8)
	39-58	171(51.2)
Total	22-58	334(100)

Table 3: Sociodemographic among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Ethnicity	Sinhala	132(81)	134(78.4)	266(79.6)
	Tamil	7(4.3)	23(13.5)	30(9.0)
	Muslim	24(14.7)	14(8.2)	38(11.4)
Religion	Buddhist	91(55.8)	77(45.0)	168(50.3)
	Christian	38(23.3)	52(30.4)	90(26.9)
	Islamic	24(14.7)	14(8.2)	38(11.4)
	Hindu	7(4.3)	23(13.5)	30(9.0)
	Catholic	3(1.8)	5(2.9)	8(2.4)
Residency place	Colombo	89(54.6)	109(63.7)	198(59.3)
	Gampaha	19(11.7)	20(11.7)	39(11.7)
	Kaluthara	23(14.1)	11(6.4)	34(10.2)
	Kurunegala	17(10.4)	13(7.6)	30(9.0)
	Galle	8(4.9)	11(6.4)	19(5.7)
	Puttlam	3(1.8)	4(2.3)	7(2.1)
	Anuradhapura	1(0.6)	1(0.6)	2(0.6)

	Kegalle	1(0.6)	1(0.6)	2(0.6)
	Hambanthota	1(0.6)	0	1(0.3)
	Matara	0	1(0.6)	1(0.3)
	Mathale	1(0.6)	0	1(0.3)
Marital status	Married	139(85.3)	143(83.6)	282(84.4)
	Divorced	8(4.9)	22(12.9)	30(9)
	Unmarried	16(9.8)	6(3.5)	22(6.6)
Educational Level	Below grade 5	17(10.4)	48(28.1)	65(19.5)
	Between grade 5 -10	117(71.8)	118(69.0)	235(70.4)
	General Certificate of Ordinary Level	26(16.0)	1(0.6)	27(8.1)
	General Certificate of Advanced level	3(1.8)	1(0.6)	4(1.2)
	No education	0	3(1.8)	3(0.9)

Considering sociodemographic, according to 22-38 age group 81% were Sinhalese, 55.8% were Buddhist and from Colombo district (54. 6%). Comparing 39 -58 age group, 78.4% were Sinhalese. Out of 45% were Buddhist and 63.7% also from

Colombo. According to educational status, 71.8% of 22-38 age group were obtained between grade 5 to 10 education and 16% had ordinary level education. There was less prevalence of both age reached to (GCE A/L) advanced level (1.2%). Only 4 persons of both age groups were obtained from advanced level education. Nearly 70% of 39-58 age group acquired grade 5 to 10 and only two persons reached ordinary level and advanced level. All of 22-38 age group of people at least obtained below grade 5 educations and 26 participated to O/L. Among 39-58 group, there were 170 people were not obtained higher education except 1 person. Further, they were unable to achieve ordinary level (GCE O/L) too.

4.1.2 Association between sociodemographic with patterns of heroin use, risk behaviors and level of addiction among heroin use prisoners

In accordance with test the null hypothesis regarding sociodemographic with patterns of heroin use, risk behaviors and addiction levels. Chi- square test was carried out for each factor separately and the results of chi square statistics and the corresponding p values are shown in table 4, 5, 6, 7, 8 and 9

Table 4: Association between sociodemographic and frequency of heroin used among heroin users in prison

Variables		Frequency of heroin use				
		1 time (n%)	2 times (n%)	3 times (n%)	Total (n%)	*P* - value
Ethnicity	Sinhala	27(79.4)	154(77.4)	85(84.1)	266(79.6)	0.578
	Tamil	4(11.8)	21(10.6)	5(4.9)	30(9)	
	Muslim	3(8.8)	24(12.1)	11(11.0)	38(11.4)	
Religion	Buddhist	16(47.1)	97(48.7)	55(54.4)	168(50.3)	0.288
	Christian	8(23.5)	53(26.6)	29(28.7)	90(26.9)	
	Islamic	3(8.8)	24(12.1)	11(10.9)	38(11.4)	
	Hindu	4(11.8)	21(10.6)	5(5.0)	30(9.0)	
	Catholic	3(8.8)	4(2.0)	1(1.0)	8(2.4)	
Resident	Colombo	18(52.9)	113(56.8)	67(66.3)	198(59.3)	0.09
	Gampaha	5(14.7)	22(11.1)	12(11.9)	39(11.7)	
	Kaluthara	7(20.6)	22(11.1)	5(5.0)	34(10.2)	
	Kurunegala	2(5.9)	20(10.1)	8(7.9)	30(9.0)	
	Galle	1(2.9)	12(6.0)	6(5.9)	19(5.7)	
	Puttlam	1(2.9)	6(3.0)	0	7(2.1)	
	Anuradhapura	0	2(1.0)	0	2(0.6)	

	Kegalle	0	1(0.5)	1(1.0)	2(0.6)	
	Hambanthota	0	0	1(1.0)	1(0.3)	
	Matara	0	1(0.5)	0	1(0.3)	
	Mathale	0	0	1(1.0)	1(0.3)	
Marital Status	Married	24(70.6)	174(87.4)	84(83.2)	282(84.4)	**0.035**
	Divorced	8(23.5)	12(6.0)	10(9.9)	30(9.0)	
	Unmarried	2(5.9)	13(6.5)	7(6.9)	22(6.6)	
Education	< Grade 5	11(32.4)	32(16.1)	22(21.8)	65(19.5)	**< 0.01**
	Grade 5 -10	21(61.8)	149(74.0)	65(64.3)	235(70.4)	
	GCE A/L	1(2.9)	2(1.0)	1(1.0)	4(1.2)	
	GCE O/L	1(2.9)	15(7.5)	11(10.9)	27(8.1)	
	No education	0	1(0.5)	2(2.0)	3(0.9)	

In order to test the null hypothesis: Ho: There is no significant association between sociodemographic and the frequency of heroin use (Table 4).

Results in table 4 indicate that Chi-square statistics was significant only for marital status and educational level. Confirming that among sociodemographic considered above only marital status and educational level are significantly associated with frequency of heroin use among heroin used prisoners.

Table 5: Association between sociodemographic and mode of heroin use heroin among heroin users in prison

		Mode of heroin use			
		Injecting (n%)	Smoking (n%)	Total (n%)	*P*- value
Ethnicity	Sinhala	7(100)	259(79.2)	266(79.2)	0.75
	Muslim	0	38(11.6)	38(11.4)	
	Tamil	0	30(9.2)	30(9.0)	
Religion	Buddhist	4(57.1)	164(50.2)	168(50.3)	0.669
	Christian	3(42.9)	87(26.8)	90(26.9)	
	Islamic	0	38(11.6)	38(11.4)	
	Hindu	0	30(9.2)	30(9.0)	
	Catholic	0	8(2.4)	8(2.4)	
Residency	Colombo	7(100)	191(58.4)	198(59.3)	0.897
	Gampaha	0	39(11.9)	39(11.7)	
	Kaluthara	0	34(10.4)	34(10.2)	
	Kurunegala	0	30(9.2)	30(9.0)	
	Galle	0	19(5.8)	19(5.7)	
	Puttlam	0	7(2.1)	7(2.1)	
	Kegalle	0	2(0.6)	2(0.6)	

	Anuradhapura	0	2(0.6	2(0.6)	
	Hambanthota	0	1(0.3)	1(0.3)	
	Matara	0	1(0.3)	1(0.3)	
	Mathale	0	1(0.3)	1(0.3)	
Marital status	Married	7(100)	275(84.1)	282(84.4)	0.517
	Divorced	0	30(9.2)	30(9.0)	
	Unmarried	0	22(6.7)	22(6.6)	
Education	< Grade 5	2(28.6)	63(19.3)	65(19.5)	0.905
	Grade 5 -10	5(71.4)	230(70.3)	235(70.4)	
	GCE O/L	0	27(8.3)	27(8.1)	
	GCE A/L	0	4(1.2)	4(1.2)	
	No education	0	3(0.9)	3(0.9)	

According to test the null hypothesis: Ho: There is no significant association between the mode of heroin use and each of sociodemographic factors (Table 5). The results show that there were no association with mode of heroin use and sociodemographic among heroin used prisoners.

Table 6: Association between sociodemographic and tobacco smoking among heroin users in prison

Variables		Tobacco smoking			
		No(n%)	Yes(n%)	Total(n%)	*P*- value
Ethnicity	Sinhala	98(78.4)	168(80.4)	266(79.6)	0.571
	Muslim	17(13.6)	21(10.0)	38(11.4)	
	Tamil	10(8.0)	20(9.6)	30(9.0)	
Religion	Buddhist	66(52.8)	102(48.8)	168(50.3)	0.644
	Christian	30(24.0)	60(28.7)	90(26.9)	
	Islamic	17(13.6)	21(10.0)	38(11.4)	
	Hindu	10(8.0)	20(9.6)	30(9.0)	
	Catholic	2(1.6)	6(2.9)	8(2.4)	
Residency	Colombo	75(60.0)	123(58.9)	198(59.3)	0.81
	Gampaha	18(14.4)	21(10.0)	39(11.7)	
	Kaluthara	14(11.2)	20(9.6)	34(10.2)	
	Kurunegala	10(8.0)	20(9.6)	30(9.0)	
	Galle	5(4.0)	14(6.7)	19(5.7)	
	Puttlam	2(1.6)	5(2.4)	7(2.1)	
	Kegalle	1(0.8)	1(0.5)	2(0.6)	
	Anuradhapura	0	2(1.0)	2(0.6)	

	Hambanthota	0	1(0.5)	1(0.3)	
	Matara	0	1(0.5)	1(0.3)	
	Mathale	0	1(0.5)	1(0.3)	
Marital Status	Married	108(86.4)	174(83.3)	282(84.4)	0.74
	Divorced	10(8.0)	20(9.6)	30(9.0)	
	Unmarried	7(5.6)	15(7.2)	22(6.6)	
Education	< Grade 5	26(20.8)	39(18.7)	65(19.5)	0.944
	Grade 5 -10	85(68.0)	150(71.8)	235(70.4)	
	GCE O/L	11(8.8)	16(7.7)	27(8.1)	
	GCE A/L	2(1.6)	2(1.0)	4(1.2)	
	No education	1(0.8)	2(1.0)	3(0.9)	

In order to test the null hypothesis: Ho: There is no significant association between the tobacco smoking and each of sociodemographic among heroin used prisoners. Table 6 indicates that here were no association with sociodemographic and tobacco smoking among heroin used prisoners.

Table 7: Association between sociodemographic and alcohol consumption among heroin users in prison

Variables		Alcohol consumption		Total(n%)	*P*- value
		No(n%)	Yes(n%)		
Ethnicity	Sinhala	58(73.4)	208(81.6)	266(79.6)	**0.014**
	Tamil	5(6.3)	25(9.8)	30(9.0)	
	Muslim	16(20.3)	22(8.6)	38(11.4)	
Religion	Buddhist	36(45.6)	132(51.8)	168(50.3)	0.074
	Christian	20(25.3)	70(27.5)	90(26.9)	
	Islamic	16(20.3)	22(8.6)	38(11.4)	
	Hindu	5(6.3)	25(9.8)	30(9.0)	
	Catholic	2(2.5)	6(2.4)	8(2.4)	
Residency	Colombo	42(53.2)	156(61.2)	198(59.3)	**0.015**
	Gampaha	4(5.1)	35(13.7)	39(11.7)	
	Kaluthara	9(11.4)	25(9.8)	34(10.2)	
	Kurunegala	11(13.9)	19(7.5)	30(9.0)	
	Galle	11(13.9)	8(3.1)	19(5.7)	
	Puttlam	2(2.5)	5(2.0)	7(2.1)	
	Kegalle	0	2(0.8)	2(0.6)	

	Anuradhapura	0	2(0.8)	2(0.6)	
	Hambanthota	0	1(0.4)	1(0.3)	
	Matara	0	1(0.4)	1(0.3)	
	Mathale	0	1(0.4)	1(0.3)	
Marital Status	Married	68(86.1)	214(83.9)	282(84.4)	0.495
	Divorced	8(10.1)	22(8.6)	30(9.0)	
	Unmarried	3(3.8)	19(7.5)	22(6.6)	
Education	<Grade 5	16(20.3)	49(19.2)	65(19.5)	0.91
	Grade 5 -10	56(70.9)	179(70.2)	235(70.4)	
	GCE O/L	6(7.6)	21(8.2)	27(8.1)	
	GCE A/L	1(1.3)	3(1.2)	4(1.2)	
	No education	0	3(1.2)	3(0.9)	

According to test the null hypothesis: Ho: There is no significant association between the alcohol drinking among heroin used prisoners and each of sociodemographic factors. Table 7 indicate that Chi-square statistics was significant only for ethnicity and residency. Therefore, among sociodemographic considered above two factors are significantly associated with alcohol drinking among heroin used prisoners.

Thus ethnicity and residency can be considered as associated factors for alcohol drinking among heroin used prisoners

Table 8: Association between sociodemographic and previous arrested status among heroin used prisoners

Variables		Previous arrested		Total(n%)	*P*- value
		No(n%)	Yes(n%)		
Ethnicity	Sinhala	19(76.0)	247(79.9)	266(79.6)	**0.039**
	Muslim	3(12.0)	35(11.3)	38(11.4)	
	Tamil	3(12.0)	27(8.7)	30(9.0)	
Religion	Buddhist	9(36.0)	159(51.5)	168(50.3)	0.069
	Christian	10(40.0)	80(25.9)	90(26.9)	
	Islamic	312.0()	35(11.3)	38(11.4)	
	Hindu	3(12.0)	27(8.7)	30(9.0)	
	Catholic	0	8(2.6)	8(2.4)	
Residency	Colombo	12(48.0)	186(60.2)	198(59.3)	**0.037**
	Gampaha	6(24)	33(10.7)	39(11.7)	
	Kaluthara	0	34(11.0)	34(10.2)	
	Kurunegala	3(12.0)	27(8.7)	30(9.0)	
	Galle	3(12.0)	16(5.2)	19(5.7)	

	Puttlam	1(4.0)	6(1.9)	7(2.1)	
	Kegalle	0	2(0.6)	2(0.6)	
	Anuradhapura	0	0.6	2(0.6)	
	Hambanthota	0	1(0.3)	1(0.3)	
	Matara	0	1(0.3)	1(0.3)	
	Mathale	0	1(0.3)	1(0.3)	
Marital					
status	Married	19(76.0)	263(85.1)	282(84.4)	0.089
	Divorced	1(4.0)	29(9.4)	30(9.0)	
	Unmarried	5(20.0)	17(5.5)	22(6.6)	
Education	< Grade 5	4(16.0)	61(19.7)	65(19.5)	**<0.01**
	Grade 5 -10	12(48.0)	223(72.2)	235(70.4)	
	GCE O/L	9(36.0)	18(5.8)	27(8.1)	
	GCE A/L	0	4(1.3)	4(1.2)	
	No education	0	3(1.0)	3(0.9)	

Test the null hypothesis: Ho: There is no significant association between the previous arrested history and each of sociodemographic among heroin use prisoners. Table 8 interprets that Chi-square statistics was significant only for ethnicity, residency and educational level. Confirming that among sociodemographic considered above factors

are significantly associated with previous arrested status among heroin used prisoners. Therefore, ethnicity, residency and educational level can be considered as associated factors for previous arrested among heroin used prisoners

Table 9: Association between sociodemographic and levels of addiction among heroin users in prison

		level of addiction			
		Moderate(n%)	Severe(n%)	Total(n%)	p value
Ethnicity	Sinhala	5(100)	261(79.3)	266(79.6)	0.523
	Tamil	0	30(9.1)	30(9)	
	Muslim	0	38(11.6)	38(11.4)	
Religion	Buddhist	1(20)	167(50.8)	168(50.3)	0.117
	Christian	4(80)	86(26.1)	90(26.9)	
	Islamic	0	38(11.6)	38(11.4)	
	Hindu	0	30(9.1)	30(9)	
	Catholic	0	8(2.4)	8(2.4)	
Residency	Colombo	0	198(60.2)	198(59.3)	**0.014**
	Gampaha	2(40)	37(11.2)	39(11.7)	
	Kaluthara	0	34(10.3)	34(10.2)	
	Kurunegala	3(60)	27(8.2)	30(9)	

	Gall	0	19(5.8)	19(5.7)	
	Puttlam	0	7(2.1)	7(2.1)	
	Kegall	0	2(0.6)	2(0.6)	
	Anuradhapura	0	2(0.6)	2(0.6)	
	Matara	0	1(0.3)	1(0.3)	
	Mathale	0	1(0.3)	1(0.3)	
	Hambanthota	0	1(0.3)	1(0.3)	
Marital status	Married	5(100)	277(84.2)	282(84.4)	0.626
	Divorced	0	30(9.1)	30(9)	
	Unmarried	0	22(6.7)	22(6.6)	
Education	< Grade 5	0	65(19.8)	65(19.5)	**<0.01**
	Grade 5 -10	2(40)	233(70.8)	235(70.4)	
	GCE O/L	2(40)	25(7.6)	27(8.1)	
	GCE A/L	1(20)	3(0.9)	4(1.2)	
	No education	0	3(0.9)	3(0.9)	

The null hypothesis: Ho: There is no significant association between the addiction levels and each of sociodemographic among heroin use prisoners. Table 9 indicates that Chi-square statistics was significant only for residency and educational level. It is confirming that among sociodemographic considered above two factors are significantly associated with addiction levels among heroin used prisoners. Thus,

residency and educational level can be considered as associated factors for addiction levels among heroin used prisoners.

Table 10: Reason to leave from school among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Reason to leave from school	Reluctant to go to school (unwilling to learn subjects)	118(72.4)	127(74.3)	245(73.4)
	Less economic issues	22(13.5)	24(14.0)	46(13.8)
	Exam failure	13(7.9)	14(8.2)	27(8.0)
	Brocken family	5(3.1)	4(2.3)	9(2.7)
	Others (i.e. Change their residence place, affected on flood etc.)	5(3.1)	2(1.2)	7(2.1)

According to age groups, table 10 mentions various reasons of left from school before complete the highest educational level (GCE A/L) among heroin used prisoners according to their age range.

In Sri Lanka, one who not reached to advanced level education, they consider as gave up their education due to many reasons. This table shows heroin used prisoners had many reasons to leave from school before attained A/L examination.

Both age groups gave up their studies due to reluctant to go to school (73.4%). Unwilling to learn and difficult to follow subjects were reasons to stop their studies. Fewer of them were unable to complete their education due to exam failure and economic problems (8% and 13.8% respectively). Furthermore, almost same results indicated both age groups.

Table 11: Monthly income of heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Monthly Income (SL Rupees)	Below 10,000	3(1.8)	2(1.2)	5(1.5)
	10,000 - 19,999	35(21.5)	70(40.9)	105(31.4)
	20,000 - 30,000	102(62.6)	84(49.1)	186(55.7)
	More than 30,000	23(14.1)	15(8.80)	38(11.4)

ǂ SL Rupees = Sri Lankan Rupees (1Rupee = 0.0064 USD)

Monthly income interprets according to 22-38 group, 62.6 % of had 20,000 to 30,000 income and most of 39-58 age group also above mentioned income level. Out of 14.1% of 22 -38 age group and 8.8% of 39-58 age adults had more than thirty thousand monthly incomes. Both age groups had very low percentage of below 10,000 monthly incomes (1.8% and 1.2% respectively).

Table 12: Permanent job status among heroin used prisoners

Variables		Age group 22-38 n=163 n(%)	Age group 39-58 n=171 n(%)	Total n=334 n(%)
Permanent job status	No	163(100)	168(98.2)	331(99.1)
	Yes	0	3(1.8)	3(0.9)
Permeant job category	Peon	0	2(66.7)	2(66.7)
	Clark	0	1(33.3)	1(33.3)
Temporary Job category	Labors	72(44.1)	87(51.8)	159(48.0)
	Drivers	36(22.1)	21(12.5)	57(17.2)
	Workers(multiple)	17(10.4)	23(13.7)	40(12.1)
	Street venders	15(9.2)	12(7.1)	27(8.2)
	Fishermen	7(4.3)	12(7.1)	19(5.7)
	Tourist guides	4(2.5)	5(3.0)	9(2.7)
	Sales persons	5(3.1)	3(1.8)	8(2.4)
	Bus conductors	6(3.7)	1(0.6)	7(2.1)
	Electricians	1(0.6)	4(2.4)	5(1.5)

According to table 12 majority of personals without done a permanent profession. 99.1% of were engaged with temporary job. Among 22-38 age group, 44.1% were labors and 22.1% were drivers. Comparing with 39-58 age adults, 51.8% were labors. Considering among 22-38 age, 10.4% done multiple works such as state workers, saw mill workers, plumbers, carpenters, welders, cashiers and mechanisms etc. Age 39-58 heroin users were very similar percentage with workers, fishermen, and self-business (street vendors).

Table 13 : History of living status among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Stay with	Both mother and father	38(23.3)	20(11.7)	58(17.4)
	Father	9(5.5)	13(7.6)	22(6.6)
	Mother	8(5.0)	6(3.5)	14(4.2)
	Wife	107(65.6)	126(73.7)	233(69.7)
	Uncle/Aunt	1(0.6)	6(3.5)	7(2.1)

According to the living status, table 13 mentions heroin used prisoner's characteristics of living status of before arrest as their age groups. It demonstrates 65.6 % of 22-38 aged people living with their wives. Out of 73.7% 39-58 age heroin users

also living with their wives. Considering both age group, 17.4% were living with their fathers and mothers. Comparing both two age groups, 29-58 age group living with fathers more than 22-38 age group (7.6% and 5.5% respectively).

4.1.3 Family and friends drug used history

Heroin used prisoners' family and friend's drug history and their prominent used drugs mention in table 14,15,16 and 17. Majority of parents were not used drugs (81.1%) especially 100% not used mothers. There were 96.1% of friends used drugs and among them, 80.7% were heroin used.

Table 14 : History of family drug used among heroin used prisoners

		Age group		
		22-38 n=163	39-58 n=171	Total n=334
Variables		n(%)	n(%)	n(%)
Family drug user	No	141(86.5)	130(76.0)	271(81.1)
	Yes	22(13.5)	41(24.0)	63(18.9)

Table 15 : Family history of drug used among heroin used prisoners

		Age group		
		22-38 n=22 n(%)	39-58 n=41 n(%)	Total n=63 n(%)
Family member	Father	10(45.4)	17(41.5)	27(43.0)
	Brother	4(18.2)	7(17.1)	11(17.4)
	Uncle	5(22.7)	8(19.5)	13(20.6)
	Cousin	3(13.6)	9(21.9)	12(19.0)
Family use drug	Arrack(Alcohol)	13(59.1)	25(61.1)	38(60.3)
	Ganja	5(22.7)	11(26.8)	16(25.4)
	Heroin	2(9.1)	3(7.3)	5(8.0)
	Others	2(9.1)	2(4.8)	4(6.3)

Among family members of heroin used prisoners, 43% had drug use history of father. Almost 60% used arrack. Out of 8% use heroin.

Table 16 : History of friend drug used among heroin used prisoners

		Age group		
		22=38	39-58	Total
		n=163	n=171	n=334
		n(%)	n(%)	n(%)
Friend drug user	No	6(3.7)	7(4.1)	13(3.9)
	Yes	157(96.3)	164(95.9)	321(96.1)

Table 17: History of friend used drug

		Age group		
		22=38	39-58	Total
		n=157	n=164	n=321
		n(%)	n(%)	n(%)
Friend use drug	Heroin	127(86.9)	132(86.8)	259(86.9)
	Cocaine	6(4.1)	7(4.6)	13(4.4)
	Others (arrack, painkillers, cough syrup)	13(9.0)	13(8.6)	26(8.7)
	NA	11	12	23

There were 96.3% of heroin user's friends also used drugs, among 22-38 age group. Considering 39-58 age group, 95.9% of their friends were used drugs (Table16). Their friend's prominent used drug was heroin among both two age groups (80.9% and 80.5% respectively).

Table 18: Reasons of heroin used among prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Reason to use Drug	Peer pressure	153(95.7)	159(97.0)	312(96.3)
	Problems	5(3.1)	1(0.6)	6(1.8)
	Children died	1(0.6)	1(0.6)	2(0.6)
	Left from wife	0	1(0.6)	1(0.3)
	For trying	1(0.6)	0	1(0.3)
	Relief tired	0	1(0.6)	1(0.3)
	Unawareness	0	1(0.6)	1(0.3)
	NA	3	7	10

All lifetime heroin users were current users. Majority of them heroin used as peer pressure (93.4%). Most of them used to take heroin as their friends. When their friends

take heroin, others desire improved to obtain heroin. Table 18 shows, high prevalence of both age groups heroin used as peer pressure (95.7% and 97.0% respectively). Comparing other reasons among two age groups are inconsiderable.

Table 19: History of drug obtained among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Drug Introducer	Friends	142(87.1)	146(85.4)	288(86.2)
	Relatives	7(4.3)	4(2.3)	11(3.3)
	Self	2(1.2)	6(3.5)	8(2.4)
	Foreigners	4(2.5)	3(1.8)	7(2.1)
	Sub contract dealer	8(4.9)	12(7.0)	20(6.0)
Drug received from	Friend	138(93.9)	141(97.9)	279(96.0)
	Sub contract dealer	7(4.7)	3(2.1)	10(3.4)
	Foreigner	2(1.4)	0	2(0.6)
	NA	16	27	43

According to the table imprisonment heroin user's main heroin introducer was their friends (86.2%). Considering among both age groups, most of them were heroin obtained from friends (96%). Among both age groups (22-38,39-58), out of 87.1% and 85.4% respectively heroin was introduced their friends as well as received from friends too (94% and 98%).

4.2 Patterns of heroin used

Considering of the patterns of heroin used consider poly drug use, frequency and quantity of use over dose status and administrative route of heroin use. All patterns were assessed by before arrest period.

Table 20: Mode of heroin administration among prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Mode of heroin use	Smoking	160(98.2)	167(97.7)	327(97.9)
	Injecting	3(1.8)	4(2.3)	7(2.1)

Most of heroin users in prison used heroin as smoked (97.9%) and fewer of used inject heroin (2.1%). Two age groups of heroin users of 98.2% and 97.7% respectively selected smoking as mode of heroin used. In Sri Lanka smoking heated heroin through

mouth by using some tubes or pipes. Very less prominent smoke through cigarettes because they believed that all heroin cannot smoke without waste.

Table 21: Other dug used history of instead of heroin

		Age group		
		22 -38	39- 58	Total
		n =163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Instead of heroin	Cough syrup (codeine)	38(23.3)	23(13.5)	61(18.3)
	Pain killers	35(21.5)	10(5.8)	45(13.5)
	Cocaine	11(6.7)	24(14.0)	35(10.5)
	Alcohol	13(7.9)	7(4.1)	20(5.9)
	Ganja	5(3.1)	17(9.9)	22(6.6)
	Sleeping tablets	5(3.1)	2(1.2)	7(2.1)
	Tobacco	8(4.9)	6(3.5)	14(4.2)
	Heroin (no any drug use)	48(29.5)	82(48.0)	130(38.9)

Mentions heroin used prisoners other drug used history if they not received heroin. These variables also interpret as their age groups. Age 22-38 group and 39-58 group were preferred to use cough syrup (consist of codeine) when they did not

received heroin (18. 2%). Among 22-38 age group, fewer percentage of heroin users took pain killers (21.5%) and cocaine (6.7%) instead of heroin. Consider about 39 -58 age, 14% prefer to cocaine. Comparing two age groups, 22-38 more prone to use codeine than other age group. Age 39-58 personals used more Ganja (9.9 %) than 22-38 age group. Less percentage of sleeping tablets used as instead of heroin among 38 -58 age group (1.2%). Table 15 shows, prominent number of heroin users not used other drugs instead of heroin. Almost 39% preferred heroin only.

4.2.1 Frequency of heroin used

Every variable was considered one year before arrest. Frequency of heroin used were assessed by during one week. Further, frequency per day used, quantity per one session and quantity per day (consider whole day) used were concerned.

Table 22: Frequency of heroin used before arrest

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	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	mg			
	25	136(83.4)	139(81.3)	275(82.3)
	30	1(0.6)	1(0.6)	2(0.6)
	50	22(13.5)	28(16.3)	50(15.1)
	75	1(0.6)	2(1.2)	3(0.8)
	100	1(0.6)	1(0.6)	2(0.6)
	150	2(1.2)	0	2(0.6)
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)

This table indicates frequency and quantity of heroin use per day, per session according to heroin used prisoners age group. Out of 96.1 % every day heroin used. Majority of heroin users were used 0.25 – 1 g per day (99.4%) and 25mg as for one session (82.3%). According to 22-38 age group, 95.9 % were every day used and 25mg were used (83.4%). Most of 39-58 age heroin users also indicated nearly same results. Considering about age 22 – 38 group, there were 59.5% of heroin users' heroin used twice a day as well as 39- 58 age group were indicated the same results.

4.2.3 Overdose

Among heroin used prisoners overdose experienced were assessed during their lifetime before arrested.

Table23: Over dose among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Overdose experience	No	154(94.5)	163(95.3)	317(94.9)
	Yes	9(5.5)	8(4.7)	17(5.1)

This table expresses overdose experience among heroin used prisoners. Age 22-38 group and 39-58 age group had fewer experienced of overdose. (5.5%,4.7% respectively).

Table 24: Overdose frequency among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=9	n=8	n=17
Variables		n(%)	n(%)	n(%)
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)
Drug mix	No	9(100)	8(100)	17 (100)

Last overdose				
taken	2014	1(20)	3(75)	4(44.4)
	2015	1(20)	0	1(11.2)
	2016	3(60)	1(25)	4(44.4)
	NA	4	4	8

According to 22-38 age range 55.6% had two times of overdose experienced and 39-58 age had 50% of two-time overdose experienced during their lifetime. Nearly 30% had three times overdose experienced. Considering both age groups there were no any heroin user had overdose experienced of heroin mix with other drugs. Among 22 -38 age with 60% of last overdose experienced in 2016. Compare with 39 -58 age, 75% had overdose experienced in 2014. All of them were told that no one helped when they had overdose experienced.

4.3 Risk behaviors of heroin used prisoners

Risk behaviors were assessed by before arrest time. According to risk behaviors, consider about sexual risk behaviors, (condom use or not, multiple partners use and same sexual partners use), sharing needles/equipment, smoking and alcohol drinking status and early arrested history.

4.3.1 Sexual risk behaviors

Sexual activities were assessed by lifetime before arrest. Both two age group (22-28, 39-58) had experienced of sexual activities of their lifetime (93.9% and 94.4% respectively).

Table 25: Sexual risk behaviors **among heroin used prisoners**

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Had sex	No	10 (6.1)	10(5.8)	20(6.0)
	Yes	153(93.9)	161(94.2)	314(94.0)

Almost 94% had sexual activities of both age group.

Table 26: Multiple partners used among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=153	n=161	n=314
		n(%)	n(%)	n(%)
Multiple sex partners used	No	24(16.2)	33(21.7)	57(19.0)
	Yes	124(83.8)	119(78.3)	243(81.0)
	NA	5	9	14

Partner type	All women	114(75.5)	125(79.6)	239(77.6)
	Only Wife	30(19.9)	27(17.2)	57(18.5)
	All men	5(3.3)	5(3.2)	10(3.2)
	Both men and women	2(1.3)	0	2(0.6)
	NA	2	4	6
Condom used	No	57(39.0)	56(36.6)	113(37.8)
	Yes	89(61.0)	97(63.4)	186(62.2)
	NA	7	8	15

Table 27: Regular condom used among condom used heroin used prisoners

		Age group		
		22-38 n=89 n(%)	39-58 n=97 n(%)	Total n=186 n(%)
Regular condom Use	No	41(54.7)	51(63.0)	92(59.0)
	Yes	34(45.3)	30(37.0)	64(41.0)
	NA	14	16	30

Out of 83.8% among 22-38 age group were had experienced of multiple partners and comparing 39-58 age adult group, 78.3% had same experienced. Both age groups were preferred to women (75.5% 79.6% respectively). Very less percentage of heroin users (both age groups) had sexual activities with only wives (18.2%). Among 22-38 age group, 61% were condom used. Out of 63.4% used condoms 39-58 age group (Table 26). Although, consider about condom used 54.7% of 22-38 age group were not use regularly. Among 39-58 age group, 63% also not used every time when they had sexual activities (Table 27).

Table 28 : STD/HIV test history among heroin used prisoners

		Age group		
		22-38 n=163 n(%)	39-58 n=171 n(%)	Total n=334 n(%)
Test STD/HIV	No	30(19.2)	39(22.9)	69(21.2)
	Yes	126(80.8)	131(77.1)	257(78.8)
	NA	7	1	8
STD/HIV Test results	Negative	126(100)	131(100)	257(100)
STD test year	2012	10(7.9)	25(19.1)	35(13.6)
	2013	16(12.7)	23(17.6)	39(15.2)
	2014	19(15.1)	35(26.7)	54(21.0)

2015	36(28.6)	26(19.8)	62(24.1)
2016	35(27.8)	22(16.8)	57(22.2)
2017	10(7.9)	0	10(3.9)

Majority of both age groups were done STD test before arrested in their life (80.8%, 77.1% respectively). All STD/HIV results were negative. From heroin used prisoners 21.2 % were not done the test during their life time before arrest. Although they were done STD/HIV test, some of them were done their test in 2012 (13.6%), and 24% of done 2015. Almost 4% STD /HIV test done 2017 only.

4.3.2 Injecting risk behaviors and tattoo making

Injecting risk behaviors were considering before one-year arrest period. It was assessed heroin injecting users' occurrence of sharing needles and equipment. Very less experienced of shared needles among heroin users.

Table 29: Shared needles among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Share needles	No	160(98.2)	169(98.8)	329(98.5)
	Yes	3(1.8)	2(1.2)	5(1.5)
Share bowls /equipment	No	158(96.9)	164(95.9)	322(96.4)
	Yes	5(3.1)	7(4.1)	12(3.6)

This table shows shared needles experience of heroin used prisoners. It interprets as their age groups. Both age groups were not used to share needles due to less of injecting heroin users in prison. Out of 1.2% and 2.2% respectively both 22-38 and 39-58 age groups had experienced of shared needles. Almost 4% were used to share their bowls/equipment.

Table 30: Risk behaviors among heroin used prisoners

Variables		Age group 22-38 n=163 n(%)	Age group 39-58 n=171 n(%)	Total n=334 n(%)
Have tattoo	No	102(62.6)	106(70.0)	208(62.3)
	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)

Heroin used prisoner's risk behavior of tattoo making incidents mention according to their age. Out of 37.7% had knowledge of tattoo made. Considering both 22-38age

range and 39-58 age range, there were 37.4% and 38% trend to make tattoos. Majority of tattoos were made by using separate needles (32.5%). According to 22-38 age group, 39.3% were used by machine to prepare tattoos. Although, 39-58 age group were more prone to make tattoos by using separate needles (37%). Very less amount of heroin users used same needle to make tattoos (7.1%).

4.4 Tobacco smoking

Heroin used prisoner's tobacco smoking status were assessed by one year before arrest. 62.6% had experienced of tobacco smoking. Average age at first tobacco smoking was 25.1± 6.6

Table 31: Cigarettes smoking status among heroin used prisoners

.		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Tobacco smoked	No	57(35.0)	68(39.8)	125(37.4)
	Yes	106(65.0)	103(60.2)	209(62.6)

Table 32: Quantity and frequency of cigarettes smoking

		Age group		
		22-38 n=106 n(%)	39-58 n=103 n(%)	Total n=209 n(%)
Cigarette smoked per day (Quantity)	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)
Frequency per day smoke				
	1	15(14.1)	14(14.0)	29(13.9)
	2	12(11.3)	9(8.7)	21(10.1)
	3	20(18.9)	18(17.4)	38(18.2)
	4	6(5.6)	16(15.5)	22(10.5)
	5	6(5.6)	1(0.9)	7(3.3)
	6	19(18.0)	18(17.4)	37(17.7)
	7	7(6.6)	10(9.7)	17(8.1)
	8	4(3.8)	5(4.8)	9(4.3)
	>10	17(16.1)	12(11.6)	29(13.9)

According to age group, 22-38 age heroin used prisoner were more prone to smoke than 39-58 age group. Table 31 shows, out of 65% among 22-38 age range and 60.2% of 39-58 age group were tobacco smoked. Most of 22-38 age group and 39-58 aged people used to smoke 1-5 cigarettes per day (56%). Among 22-38 group, 32% preferred to smoke 6 -10 cigarettes. Considering 39-58 age, 56.2% used to smoke 1 to 5 cigarettes as well as 36% used 6 – 10 cigarettes per day. However, 39-58 group more like to smoke than to 22-38 age group (Table 32).

4.5 Alcohol drinking status

Alcohol drinking status were considered as before arrest one-year period among heroin used prisoners. Average age at first alcohol drinking was 27.3 ± 5.4

Table 33: Alcohol drinking status of heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Alcohol drinking	No	38(23.3)	41(24.0)	79(23.7)
	Yes	125(76.7)	130(76.0)	255(76.3)
Frequency 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 33 indicates, out of 76.3% of heroin users were alcohol drinkers. Nearly77 % of 22-38 age group had alcohol drinking experienced and among 39-58 age group, 76% were alcohol drinkers. Out of 93.7% heroin users were alcohol used at least one time per day. It consisted of 93% of 22-38 age and 93.8% of 39-58 age personals. Majority of used drink quarter bottle (46. 3%). Both two age groups were more prone to drink 3 standard drink (48.8%, 46.1% respectively).

4.6 History of previous arrested status

Previous arrested status was considered during their lifetime before present arrest. Out of heroin used prisoners 92.5% had experienced of previous arrested. Average age at first arrest was 28.2± 4.7(Age range- minimum 16 and maximum 51).

Table 34: Age at first arrest among heroin used prisoners

Variables		Total (n=334) Mean ± S.D	Age range
Age at first arrest		28.2±4.7	16-51
According to the age group	22- 38	27.7±4.0	16-37
	39-58	28.6± 4.5	18-51

Between 22-38 age group, mean of first arrest was 27.7±4.0. Among 39 -58 age, average age of first arrest was 28.6 ± 4.5.

Table 35: History of previous arrested among heroin used prisoners

Variables		Age group 22-38 n=163 n(%)	39-58 n=171 n(%)	Total n=334 n(%)
Arrest before	No	9(5.6)	11(6.5)	20(6.1)
	Yes	152(94.4)	157(93.5)	309(93.9)
	NA	2	3	5

Among 22-38 age nearly 94% had previous arrested history. Between 39-58 age out of 93.5% had previous arrested.

Table 36: Frequency and reason to previous arrested among heroin used prisoners.

		Age group		
		22-38	39-58	Total
		n=152	n=157	n=309
Variables		n(%)	n(%)	n(%)
Number of arrest times	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 arrested	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)

Out of 33.6% heroin uses were arrested three times and 29,1% were arrested more than three times. Among 22-38 age group, 31.6% were arrested two times and most of 39-58 age adults were arrested three times (42.6%). Drug trafficking is the main reason to early arrested. Heroin used and crimes were other prominent reasons (9.4%,8.7% respectively). The table indicated majority of both 22-38 and 39-58 age group had similar reason (drug trafficking) to arrest (62.5%, 50% respectively).

4.7 Level of addiction

Level of addiction was assessed past twelve months before arrested. The heroin addiction levels were interpreting as mild moderate and severe. Using WHO standard ASSIST V3.0 (WHO -the alcohol, smoking and substance involvement screening test: guidelines for use primary care). This questionnaire was used for measuring heroin addictive severity. This test included 8-item brief screening tool. This questionnaire was conducted by an interviewer administered. Every question necessitates a yes or no response, and the tool was completed. Addiction levels interpret as mild 0-3,4-26 as moderate and 27+ severe (WHO, 2002).

Table 37: Level of addiction among heroin used prisoners

		Age group		
		22-38	39-58	Total
		n=163	n=171	n=334
Variables		n(%)	n(%)	n(%)
Addiction level	Moderate	2(1.2)	3(1.8)	5(1.5)
	Severe	161(98.8)	168(98.2)	329(98.5)

According to age groups, table 37 shows addiction levels of heroin used prisoners. Almost 98. % were severely addictive personals. Among 22-38 age group, 98.8% and 98.2% of 39-58 age group were affected severely. There were no any mild addictive heroin users in prison.

CHAPTER V

DISCUSSION

5.1 Sociodemographic characteristics of heroin used prisoners

The study was described of the patterns and risk behaviors of incarcerated heroin used population in Sri Lanka.

The participant consisted mainly of 22- 58 aged males which is the large part of workforce in country. The age group were divided into two groups such as 22-38 and 39-58. According to this research age range of heroin used participants was divided by considering mean of age. The age was divided into two groups because it useful to identify which age was more affect to heroin use as well as addictive. The most of heroin users (51.2%) were 39 -58 age group. Out of 48.8% were 22-38 aged. Average age of heroin used prisoner were 37.88 ± 6.1. Age at heroin first use 30.9 ± 4.2. Majority of heroin used incarcerated people was from Colombo district (60%) and Buddhist (50%). Among 70% of them had low educational background (almost 99%) as well as had low income level (88.6%). All of them were male and 84.4% were got married. Out of 99.1% of not done a permanent profession and prominent percentage of them were labors (48 %).

Earlier studies have mentioned that heroin users in above mentioned same age groups in worldwide (U. N. O. o. Drugs & Crime, 2015). The most of heroin users were

male (99%), aged group between 20 to 40 years (81%) (Senanayake et al., 2005). Heroin users were notably higher for male than to female (Banerjee et al., 2016). Although, in this study there was no any female heroin user in prison. Majority of heroin users had initiated their heroin during late adolescence. Life time drug use was associated with age (Lejuez et al., 2005).The annual prevalence of heroin use remained at 0.2% of the population age 14 and above since 2001(Berry et al., 2007). According to the results of this study, high prevalence of heroin used prisoners including to 39 to 58 age group (51%). The study also reavealed life time heroin used and age significantly associated. In early study mentioned people who living in remote areas and lower level education associated with heroin users (Wang et al., 2013). However, prominent heroin cases were reported in capital city of Sri Lanka (59%). Majority of cases were recorded in Colombo district (44%), Sinhalese ethnicity (40%) and Buddhist religion (40%) too (NDDCB, 2016). Further, Previous study confirmed majority of heroin users in Colombo district (Senanayake et al., 2005),as well as in this study remained more percentage than previous study results of residence ethnicity and religion.(Colombo, Sinhalese, and Buddhist indicate prevalence were 60%,80%,%50% respectively). Comparing two age groups, most prominent above mentioned outcomes. The next percentage of heroin users in Gampaha and Kaluthara district.

Past study in Sri Lanka was mentioned that similar sociodemographic characteristics regarding drug users (Dissabandara et al., 2009). According to Sinhalese ethnicity most prominent age group were 22 -38 years in this study (81%). Comparing

Tamils and Muslims, 14% of Muslims were heroin users in same age group too. Considering 39-58 age group, 13.5% were Tamil. Previous studies mentioned ethnicity also affected to heroin used (Harrell et al., 2012). Further, earlier study identified factors that effect on ethnic minority drug abuse people. The most common addictive drug was heroin among them (Tang et al., 2006). In Sri Lanka, the results were opposite to that because of main ethnicity was the most affected group which were high percentage of heroin used to Sinhalese. Less prominent ethnic minority heroin users in both age groups of Sri Lanka. Considering about residency, it was most highlighted above mentioned same age range. Previous study mentioned similar percentage of married and unmarried persons were drug used in prison (Dissabandara et al., 2009) . However, in this study indicated majority of heroin users got married (84.4%) and they were lived with wives.

There was an educational factor affected to drug used (Shand et al., 2011). Majority of them from Colombo and close to metropolitans as well as lower social level, labors (Senanayake et al., 2005). Out of 55% were obtained only grade 5 to 10 (NDDCB, 2016). This study involvement most heroin users had law educational background (70%) and not done a permanent job (99%). Among 39-58 age group, there was two person done ordinary level and advanced level education. Almost 2% of 39-58 age heroin users not acquired any education. Out of 72.4% of 22-38 age range gave up their studies due to unwilling to follow studies. Therefore, they reluctant to go to school to continue their studies due to unwilling to follow subjects. Fewer of them

were unable to complete their education due to exam failure and economic problem (8%,13.8%respectivly). Age group 39-58 heroin users display the equal prominent reason as unwilling to go to school. Among 22-38 group only three persons had advanced level education. Previous study mentioned most of drug users' labors (25.5%) and street vendors (20%) (Dissabandara et al., 2009). In this study showed majority of heroin users came from poor employment back grounds, such as labors (48%) and drivers (17.2%). However, this study indicated more percentage than previous studies. Consider among 39-58 age range, considerable percentage done multiple works such as state workers, saw mill workers, plumbers, carpenters, welders, cashiers and mechanisms etc. There were very similar percentage of workers, fishermen, and self-business with both age groups too. There were age , gender ethnicity income and education affected to heroin used (Lejuez et al., 2005). Most of young heroin users from law economic neighborhood and nearby suburbs. Initiation of heroin between younger and older age group. Majority of them were unemployed, homeless or insecurely housed (Mars et al., 2014). According to this study most of them (55.7%) were law income range (<20,000 – 30,000 rupees /130-195USD). The prominent law income age group was 39 to 58 years. Considering 22-38 age, 21.5% cases were between 10,000 -19,999 and 62.6% were 20,000 -30,000 income range. Both young adults and middle age adults had very low percentage of below 10,000 monthly incomes (1.5%). Considering both age groups, among 22-38 group had almost

14% of more than 30,000 monthly incomes. Similar evidence of early studies as well as this study shows regarding educational and economic status.

The family is an important cultural context that can have important implications for substance abuse. One who use drug it may affect on other family members to initiate drug use (Applewhite et al., 2016). Apart from some researches elicit poor parent childhood relationships (Comiskey et al., 2017), and parent who were used drugs more prone to affect their children (Shand et al., 2011). There were many risks appear in their family people who addict with heroin (Brown, 2004). According to Attribution Theory (AT), the theory shares out how the social perceiver utilize information to reach at causal clarification for events. It inspects what details is converged and how it is combined to form a causal judgment (Fiske & Taylor, 1991). Heroin users' behaviors control by external person positively then they continue their drug use and get confidence about heroin used good for their life. As report by this study there was no any evidence of mother's history of drug used and very little number of drug used was reported from their fathers and other family members (18.9%). Therefore, very less impact on heroin users from their family members. In previous study mention that, most of young people compel to take heroin due peer pressure, lack of employment opportunities, and an abundance of unstructured free time (McCurdy et al., 2005). Heroin users had poor school attendance, their friends having with illicit drug use and experience of sexual abuse or physical abuse in childhood than non-heroin users (Chiang et al., 2006). According to this study, 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%).

TPB and TRA mentioned heroin users' attitudes belief affect on their health. Their thoughts positive towards heroin use, then they compel to use more and more (Ajzen & Fishbein, 1980). Earlier studies mentioned peer pressure affect to heroin used too. Transition point of drug consuming with related the culture, hangouts, and the peer pressure, desire, and cheating and build of relationships with young and introduce new experience of heroin (McCurdy et al., 2005). Considering this research, the most prominent reason for initiation of heroin due to peer pressure (96.3%). Both young adults and middle age adults indicated high prevalence of that reason (nearly 96% of each age group). Comparing other reasons among two age groups are inconsiderable.

5.2 Patterns of heroin used

Patterns of heroin used consider before one-year imprisonment. 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 (European Monitoring Centre for Drug and Drud Addiction, 2012).

According to this research, in Sri Lanka among prisoners, all heroin users were lifetime heroin used in prison. Average age of lifetime heroin used were 37.8± 6.1.

However, all lifetime heroin users were recent and current heroin used individuals in prison. Every lifetime heroin user had continued to consume heroin during the last one year, last thirty days as well as the last seven days before incarcerated. Among 97.9% were smoked as their heroin used method. Out of 96.1% were everyday heroin used as well as 59.6% use twice a day. High prevalence of heroin users used to smoke 25mg per session (82.3%). Nearly hundred percent of heroin users used 0.25g -1g per day. This study revealed among prisoners, had very few number of overdose experienced (5.1%). Out of 52.9% had experienced of two times of overdose. Considering two age groups, almost similar results were presented (55%). Polydrug use were not indicated among incarcerated heroin users in this study.

Past research revealed heroin users in prison had same effect (Dissabandara, Dias, Dodd, & Stadlin, 2009). Previous study mentioned the main route of heroin use was smoking (48%).Among heroin users with injecting and snorting were 34.8% and 6.3% respectively (Brugal et al., 2002). Comparing smoking and snorting method, heroin smokers were higher than snorters (Brugal et al., 2002). Most of heroin users favor to inhaling smoke of heated heroin (Dissabandara et al., 2009). In Sri Lanka, majority of heroin users used to smoke as their main administration route (98%). Both age groups were indicated almost similar high prevalence of smoked heroin. Previous studies shows non injecting heroin users more like to injecting heroin use (Neaigus et al., 2006). Majority of imprisonment heroin users were injecting (U. N. O. o. Drugs & Crime, 2015). The most of injecting heroin users were males, aged group between 20 to 40 years

(Senanayake et al., 2005). However in Sri Lanka still limited injecting heroin users (1.7%) (WB, 2012). This study elicits injecting heroin users remained as slightly increased as previous (2.1%). According to this study, consider only injected heroin users of prison among 39-58 adults were most distinguished. Usually injecting heroin users used between 1/4g and 1g per day and it chases between 0.5g to 3g at the maximum abusers (IDMU, 2017). 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 or 30mg packets. Each of heroin packet was obtained from 1300 to 1400 rupees (1rupee =154 USD). Prominent number of heroin users everyday (96%) two times used heroin (Almost 60%).

Heroin users most commonly cannabis used as polydrug (Leri et al., 2003). Considering this study there were no any poydrug users among heroin used prisoners. The reason of not used any other drug as mix with heroin, because of they spend more money for heroin and most preferred to use heroin and not enough money to buy other drug. There were 45% of people who used heroin, as well as addicted to prescription opioid painkillers (CDC, 2015). Some drug users used cocaine and heroin mix together due to not enough heroin. However, they use as polydrugs to enhance their effect or decrease their withdrawal symptoms (Leri et al., 2003).

According to this results, fewer number of heroin users were taken other drugs if they did not receive heroin. Thus they were not used to combine with heroin. Instead of heroin, some of heroin users used cough syrup including codeine (18,3%). However,

in Sri Lankan government was banned to issue codeine include drugs without prescription who issued from registered medical practitioner. Therefore, the present situation is most important to further actions. Fewer number of people used cocaine, alcohol and pain killers due to not available of heroin. Comparing two age groups, less prevalence of 22- 38 age group used ganja instead of heroin than 39-58 age group. Seeking of high effect from heroin, people prone to consume more cocaine which leads overdose too (Narconon, 2017) . However very fewer reported overdose experience in the study. Only seventeen subject had over dose experienced with heroin used and recovered within short times. Majority of over dose occurrence in between 22-38 age range.

5.3 Risk behaviors

According to this research injecting risk behaviors sexual risk behaviors, smoking tobacco, alcohol drinking and before arrest history were considered. Among 94% of heroin users had experience of sexual activities. Out of 81% were used multiple partners. Majority of condom used (62.2%) and STD/HIV test was done (78.8%). If majority of condom used, out of 59% were not used regularly. Further, recently STD/HIV test were done very few percentage (4%). Among heroin used prisoners with share needles habit were very less prominent (1.5%). Although, tattoos made experience were 37.7%. Out of 32.5% used separate needle Meo make tattoos.

Tobacco smoking and alcohol drinking were most prominent among heroin used prisoners (62.6% and 76.3% respectively). Average age of first alcohol drinking and tobacco smoking were 22.3 ± 5.4 and 25.1 ± 6.6 respectively. Considering previous arrested history, 93.9% had before arrest experienced and out of 55% were arrested due to drug trafficking. Mean age of first arrested 28.2 ± 4.7

Previous studies reported injecting heroin users with sharing needles were very common (36%) (Harrell et al., 2012). Injected syringe sharing and HIV, HepB were associated. Further, tattooed was correlated with STD (Samuel, Doherty, Bulterys, & Jenison, 2001). The previous study revealed that, life time heroin injecting people (76.3%) with a high prevalence of HIV (19.2%), hepatitis C (89.9%), and pulmonary tuberculosis (15.7%) (Chawarski et al., 2006). Considering this study, due to less prevalence of inject heroin used, there were not available significant number of heroin users with both shared needles (1.5%) and other equipment. Tattoo making and use of opioids were related (Borokhov, Bastiaans, & Lerner, 2006). Incarcerated individuals with tattoos are common and they often use unsterile devices which may lead to transmit HIV (Braithwaite, Robillard, Woodring, Stephens, & Arriola, 2001). Most of long term use of non-injecting heroin with HIV, HBV or HCV infection. Sharing non injected instrument and risk sexual behaviors were significantly correlated with them (Gyarmathy et al., 2002). Further previous study mentioned 57% tattoos labeled adolescents were associated with alcohol and drug used (Carroll, Riffenburgh, Roberts,

& Myhre, 2002). However, in this study considerable amount of heroin users made tattoos (37.7%) which were made mostly by separate needle (32.5%).

PM Theory mentioned how people react to fear inducing health threat communication or fear appeals (Maddux & Rogers, 1983). PMT an emphasis behavioral changes on cognitive process. According to PMT there were two source of information such as environmental (verbal encouragement and observational learning) and interpersonal information (prior experience). This information reveals either and adaptive coping reaction (increase one's health) or maladaptive coping (decrease, avoidance). If heroin users do not react (decrease avoidance) their health, they continue their heroin use and risk behaviors. It will be threat for their health in future. Majority of drug users have high risk of sexual behaviors (90%) such as not regular condom use (68%), men who sex with men (MSM) (23%) and use multiple sex partners (Raj et al., 2007). Further life time heroin users with high MSM (70%) and risk of STD (Beyrer et al., 2005). Those who infected with viral infections, spread through their unprotected sexual contact (N. I. o. D. Abuse, 2014). Smoked heroin and alcohol using people with men who have sex with men were associated with sexually transmitted disease specially most common in syphilis and less common in condom use (Ranatunga et al., 2014). The knowledge of HIV transmission and condom use were low (36.8%) among drug users (Rawstorne & Worth, 2007). According to the results of this study, incarcerated heroin used personals in Sri Lanka, had high prevalence of sexual

activities (94%). Most of them used multiple sex partners (77.4%). Majority of both 22-38age group and 39-58 age group were preferred to women (76.1%) except their wives. Very less prevalence of heroin users (both age groups) had sexual activities with only wives. However, if significant amount of heroin users used condoms but not consistently (59%). Therefore, this study remains previous study results regarding sexual risk. Out of greater part of heroin users were done medical investigations (77%) with negative results of STD/HIV. Although they were done STD/HIV test, most of them were not done recently. Of 13.6% were done in 2012.Only 22.2% and 3.9% were done that test in 2016 and 2017 respectively.

It was high prevalence of tobacco smoking (90%) and alcohol drinking(75%) among heroin users (Warner-Smith et al., 2001). Cigarette smoking extremely related with heroin users. Those who use cigarettes were sixteen tines more prone to have tried heroin (Warner-Smith et al., 2001). Further, generally more than 80% of tobacco smoking, among heroin users (Pajusco et al., 2012). Smoking cigarettes are the greatest odds of the young adults who used the heroin (Ihongbe & Masho, 2016). All drug users were current tobacco smokers and they compel to use tobacco in their earlier or adolescence (Dissabandara et al., 2009). Majority of heroin users in prison using alcohol (65%) as well as current smokers (79.5%) (Dissabandara et al., 2014). Tobacco smoking is the high risk factor for drug addicts in adolescents in Sri Lanka. (De Silva & Fonseka, 2009). Heroin users with alcohol drinking strongly related (Hasin et al., 2012). In this

study showed among heroin used prisoners with high prevalence of tobacco smoking and alcohol drinking (62.6%, 76.3% respectively). Average age of tobacco smoking was 25.1± 6.6. A same trend has been indicated elsewhere. Majority of heroin users one to five cigarettes were used extra, per day during heroin smoking (56%). According to age groups, both two age groups indicated similar results. (56%). There was correlation with age and tobacco smoking. Tobacco smoking is slightly decreased than previous studies. Heroin users use alcohol as intoxication (Raj et al., 2007). Majority of alcohol drinking heroin used prisoner preferred to use arrack and they used to drink 3 standard drink (47.5%). Compare with alcohol drinking and age group, both age groups favor to drink alcohol (76. 3%).Considering alcohol drinking is increased than previous studies.

High risk of criminal behavior was known from heroin users (71.8%) (Beyrer et al., 2005). Drug users had experienced of criminals (Dissabandara et al., 2014). In early study shows only heroin users and heroin and cocaine users were associated with criminals (71.8%) and ever have been arrested at least once in their life (Farabee et al., 2001). Further, majority of heroin users had experienced of early arrested(69%) and more prone to arrest as property offenders (31%) (Robins, Helzer, Hesselbrock, & Wish, 2010). Nearly 34% had experienced of arrest more than one time (Dissabandara et al., 2009). There were association between income and arrested situation. Greater number of drug trafficking was associated with frequency of arrested (Curry & Latkin, 2003). Life time injecting heroin users had prolonged history of heroin use and history of

imprisonment or arrest (Chawarski et al., 2006). Many drug users had previous experienced of prison sentence (Payne-James, Wall, & Bailey, 2005). According to this study, majority of heroin users had previous arrested background (92.5%). Comparing previous studies, it was increased previous arrested percentage. It indicated most of heroin users were arrested three times (33.6%). Considering age groups, most of 22- 38 group had experienced of two times arrested during their lifetime. Comparing 39-58 age, more prone to arrest three times and more than three times (42.6% ,37.6% respectively). However, Greater part was arrested previously due to drug trafficking (55%). A positive correlation with age and arrested status. Both age groups also had nearly 90% high prevalence of previous arrested experienced. Both age groups had history of drug involvement arrested than crimes. There was associated with previous arrested history and income.

5.4 Addiction levels

The research mentioned 98.5% of heroin users were severely addictive. According to the age group 98.4% of young adults and 98.9% of middle age adults were addictive severely to heroin.

Previous studies revealed mild, moderate and severe stages of heroin addiction levels. There was no significant differences between sociodemographic factors and addiction severity except marital status (Clark et al., 2001). Those who use heroin long

term 80% of severely dependent and considering amount per session and frequency of used, 64% of severely addicted. Out of 9% and 9% moderately mildly addicted respectively (Woody et al., 1993).

Considering this research, heroin users highly addicted. Notable prevalence of heroin users was severely addicted. Previous study also mentioned majority of heroin users severely addictive (64%). Further this study revealed high prevalence of severe addicts (98%) than previous results. The prominent percentage of two group of age range were severely addicted and there were no any mild heroin addicts in prison. Addiction severity depend on gender and other socio economic background. Family problems social problems and law quality life associated with heroin and other drug addiction severity (Wu et al., 2010). Thus there were significant association of age and addiction levels in this study. Among 39-58 age more severely addictive than 22-38 age.

5.5 Conclusion

The study provides patterns and risk behaviors of heroin used prisoners. Disrupted education, age, tobacco smoking, alcohol consumption, early arrested status, profession and income affected to heron used.

Average age of heroin first used was 30.9±4.2. It is more considerable factor because this age is the main work force in the country. Majority of heroin user's friends were

heroin used (81%) as well as their introducer (86%) and heroin obtained from friends (86%). As stated in, peer pressure is prominent reason (94.3%) to utilize heron. Hence this situation is most important to identity heroin users in society. Another important fact is law education (almost 99%) and less economic (88.6%) background. Instead of heroin, some heroin users prone to obtain cough syrup (18.3%), and pain killers (13.5%). It is more concern factor. Therefore, need more attention regarding codeine include drug issuing from pharmacies.

There is no any progress of injecting heroin users since 1980s. It is very effective trend because of injecting heroin users with more risk than smoking heroin. Therefore, need to maintain this situation. Many complications are associated with intravenous drug uses especially high susceptibility of STD transmission. However, in Sri Lanka, very low risk regarding disease transmission through injecting heroin users. Although very slightly increased (2.1%) injecting heroin used than previous. Further, polydrug use and overdose were reported very fewer. This is good position as well as require to control without increase more. Thus, there were significant number of heroin users associated with multiple sex partners. Further, multiple sex partners were used indicate notably (81%). Therefore, it is major risk for society. Considering previous studies condoms used were increased (62.2%) and it is positive progression. Although they have less knowledge about regular condom used (59%). However, if heroin used with less injecting probability, substantial heroin users were more prone to make tattoos

(37.7%). Drinking alcohol (76.3%) and smoking tobacco among (62.6%) heroin user with prominent another important matter.

Majority of heroin users had experienced of many times of arrested history (92.5%). Average age of first arrest was 28.2 ± 4.7. Drug and crime involvement was the main reason to before arrest. It would be a noteworthy problem. Considering about addiction level, most of them are severely addictive personals (98.4%). If they do not have a permanent job, they prone to spent more money for drug requirements. Heroin used age group was 22-58. This age range is main workforce of country. Therefore, heroin threats affect on productivity loss in the country.

In this research focus on the people who were in prisoned due to use heroin. It is useful for identifying the association between heroin addiction and socio-economic background, educational status and risk behaviors of them. According to the data and evidence of research, it was provided by risk behaviors, patterns of heroin use and addiction level among heroin use prisoners. Therefore, it will be a new information of risk behaviors such as equipment and drug sharing method, sexual risk behaviors, health risk among prisoners. Furthermore, it will be advantage for further research in future. In present, there are regular schedule at rehabilitation center for all rather than patient's requirements as well as lack of treatment programs for heroin users (N. I. o. D. Abuse, 2007). Therefore, this research also helpful to launch the programs of rehabilitation and treatments effectively according to heroin users' requirements. The effective way of prevent this, to be use treatments which includes counseling of risk

reduction maintain drug use status and related risk behavior like unsafe sex and injection practice. This research will be helpful for how to plan the educational programs and vocational training programs to increase heroin user's living status and improve their future due to their necessities. Heroin related behaviors may be useful for identify the heroin uses in the society and also after reintegrated them, it is feasible task to find their information.

5.6 Limitations

In the research was conducted only one prison out of three security prisons in Sri Lanka. The research was not considering in heroin addicts in rehabilitation centers in Sri Lanka too. Data was obtained from in prison heroin used males only. Further, there were no any laboratory tests done in this research. In this study was focused on risk behaviors, drug use patterns, severity of addiction and their health risk of sexually transmitted infectious diseases only. Not asses' mental disorders and other individual health problems. There were not considered in severity of mental illness and the biomedical investigations of them.

5.7 Recommendation

In Sri Lanka, there is no exact rules only for heroin users. Therefore, it should be need to launch 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 instead of common drug users. Thus, remaining rules and regulations regarding drug issuing (banned to issue drugs without prescriptions) need to strict. For instance, if any pharmacy issues drugs without prescription which will be cancelled their registration. Smoking is the main heroin administration route and it not be changed or increased to injection. Further, remaining less percentage of polydrug use and overdose experience require to maintain. Therefore, it should be needed that situation to control further increase. Furthermore, need to harm reduction programs to control this situation. As there are an increasing number of heroin users being imprisoned every year, it would be significant problem, because Sri Lankan government spend more money to prisoners instead of development of country. Therefore, it is essential to increase fines and bails among heroin use arrest because heroin users reported many times of arrested. It is essential public education highlighting the sexual transmitted disease associated with engaging multiple partners and Men who have Sex with Men (MSM). It should be essential to launch programs of STD/HIV test regularly and need follow up. Further, importance of implementing preventive issues targeting risk population. Further, require to develop educational and economic background and new treatment and rehabilitation issues. Majority of heroin users use smoking heroin as their route of administration. So that need more attention and investigations of their health of lungs, heart and mental distress. If injecting drug use remaining low percentage, previous studies in Sri Lanka

not identified regarding heroin users with tattoo making risk. Therefore, unprotected tattoo making trend also necessary to identify and essential to improve knowledge about how it would be a risk. Almost heroin users severely addictive. They used unpurified big quantity of heroin. Therefore, we must provide them knowledge about health effects and health risks. In Sri Lanka previously not reported data regarding addictive levels. So that need to special treatment for heroin users instead of common treatment. It may be essential that this vulnerable group justify substantial awareness in terms of research and possible health interventions to support decrease the potential harmful result of such patterns of use.

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APPENDIX

Appendix A

Questionnaire

Code

Questionnaire part 1- Socio demographic characteristics

1. Gender: ☐ Male ☐ Female
2. Age: .....years old
3. Ethnicity; ☐ Sinhala ☐ Tamil ☐ Muslim ☐ Burger ☐ Others (specify.....)
4. Religion: Buddhism ☐ Christian ☐ Catholic ☐ Islam ☐ Hindi ☐ Others (specify..)
5. District of residence? ☐ Colombo ☐ Others (specify .....)...
6. Marital Status: ☐ Single ☐ Married ☐ Divorce ☐ Widow ☐ living with someone as if married (not currently married or separated from another person
7. Educational levels:☐ No education☐ Below grade 5 ☐Between grade 5 -10 ☐ GCE O/L ☐ GCE A/L ☐ Graduate level ☐ Post gradual level
8. If you have unable to complete your education, please tell me the reason to leave from school? ☐ Less economic issues ☐ Exam failure ☐ Reluctant to go to school ☐ Brocken family ☐ Others (specify.....)
9. Did you do a permanent job before arrested? ☐ No ☐Yes If yes, (specify.....)
10. Did you do a non- permanent job before arrested? ☐ No ☐ Yes If yes, (please specify.....)
11. If both question number 9, 10 are No, how do you receive money before arrested?

□ Pickpocket □ Stolen □ Begging □ Borrow □ Others (specify.....)

12. Monthly income:(before arrested)□ Below 10,000 □10,000 -20,000 □20,100 -30,000 □ Above 30,000 (Sri Lankan Rupees)

13. Whom do you live with? □ Father □ Mother □ Both mother and father □ Wife/Husband □ Aunt/Uncle □ Others (specify.....)

14. Does your father have a history of drug use drugs? □ No □ Yes

- If Yes, please specify the drug □ Heroin □ Cocaine □Others (specify....)

15. Does your mother have a history of drug use? □ No □ Yes
- If yes, please specify the drug □ Heroin □ Cocaine □ Others (specify.....)

16. Does any member of your family have a history of drug use? □ No □ Yes (relationship)..... Specify drug.....

17. Does any of your friends use drugs? □ No □ Yes

- If yes, please specify the drug □ Heroin □ Cocaine □ Others (specify.....)

18. Who introduced hereinto you? □ Friends □ Relatives □ Foreigners □ Others (specify.....)

19. Could you tell me the reason to start heroin use: □ To experiment □ To get rid of stress □ Peer pressure □ Others (specify)

20. What was the age of heroin use first? Specify..... Years old

Questionnaire part- 2 –Risk behaviors

2.1 Pattern of heroin use

In this questionnaire we would ask about your heroin use patterns before arrested, whether you use heroin for life time or not, about administration route, poly drug use, frequency and quantity of heroin use.

Please answer the following questions:

Question 1 and 2 answers complete according to below box:

1. Have you ever used heroin in your life time? ☐ No ☐ Yes If Yes: Specify Heroin row (1) in box. (If they use heroin for life time their answer is yes in 1year, 30 days and 7 days).

Type of drug	Age at 1st use	Reason to start drug use	Route of administration	Life time use		1 Year		30 Days		7 Days	
				N	Y	N	Y	N	Y	N	Y
Heroin											

ǂ (N=No, Y=Yes)

2. Could you tell me if you do not have heroin what kind of drugs do you use? Specify rows 1- 10 in box.

ǂ (N=No, Y=Yes)

Type of drug	Age at 1st use	Reason to start drug use	Route of administration	Life time use		1 year		30 days		7 days	
				N	Y	N	Y	N	Y	N	Y
1.Benzodiazepines											
2.Cocaine											
3.Ecstacy											
4.Codeine											
5.Sleeping pills											
6.Ketamine											
7.Pain killers											
8.Alcohol											
9.Tobacco											
10.Others(specify)											

3. How many times you did not have heroin before arrested?

   - One year before arrest: Specify
     ..... (times).....(month).....(year)

4. What was the reason for non-availability of heroin? Specify .....

5. Frequency of used heroin: ☐ Every day ☐ 2 times per week ☐3 times per week
   ☐ 4 -5 times per week ☐ weekly ☐ Monthly

6. How many times (frequency) do you use heroin per day? ☐ One time ☐ Two times
   ☐ Three times ☐ More than three times

7. Amount (quantity) taken during a typical day? ☐ 0.25g - 1g ☐ >1g-3g ☐ More than 3g
   ☐ Others (Specify.....)

8. Amount (quantity) taken during a typical session: Specify .....

9. **Drug overdose experience**

A. Yourself

1. Have you ever had an experience of drug overdose?

☐ 1) No

☐ 2) Yes, how many times did you have overdose?..... times.

Specify drug use .....

Did you mix drugs? ☐ No ☐ Yes specify main drug..... Quantity .....

Mixed with..... Quantity .....

	When it happened?		Drug use at that time, specify every drug including alcohol	Did you mix drug? If yes specify...		How did you recover?	Who helped you?
	month	year		Main drug	Mixed drug		
1							
2							
3							

2. When was the last time that you had overdose? Month ..... Year.....

3. Drug used at last overdose, specify every drug .....

4. How did you recover?.....

5. Who helped you?.....

B. **Your friend**

Have your friend or close friend ever had experience of drug overdose?

☐ 1 No

☐ 2) Yes, please answer item a) and b)

a) Yes, my friend died because of drug overdose while he/ she <u>used drug alone</u>

Please specify your name	Relationship between you and your friend... (check one) ☐ just a friend ☐my close friend ☐ a friend in our gang	Nick name..... Gender ☐ male ☐ female; Age... Year When did she/he had overdose? Month.... year...

b) Yes, my friend died or almost died because of drug overdose while he/ she <u>used drug in a group.</u> Please specify your friend's information

Please specify your name.....	Relationship between you and your friend... (check one) ☐ just a friend ☐my close friend ☐ a friend in our gang	Nick name..... Gender ☐ male ☐ female; Age... Year When did she/he had overdose? Month.... year..... Specify drug

Please specify the nick name and gender of the friends in the group in item b)

1) Nick name of the friend who was in the group..... 2) gender☐ male ☐ female Age.....years	1) Nick name of the friend who was in the group..... 2) gender☐ male ☐ female Age.....years	1) Nick name of the friend who was in the group..... 2) gender ☐ male ☐ female Age.....years
1) Nick name of the friend who was in the group..... 2) gender ☐ male ☐ female Age.....years	3) Nick name of the friend who was in the group..... 4) gender ☐ male ☐ female Age.....years	1) Nick name of the friend who was in the group..... 2) gender ☐ male ☐ female Age.....years

2.2 Heroin using risk behaviors

Question 1 and 2 about your cigarette smoking and alcohol drinking status of before one-year arrest:

1 Could you tell me did you smoke before arrested? □ No □ Yes

If Yes: answer Ⅰ, Ⅱ

Ⅰ. How many times did you smoke per day?

□ One time □ Two times □ Three times □ More than three times

Ⅱ. How many cigarettes did you smoke per day? (specify.....)

2 Have you ever drink alcohol before arrested? □ No □ Yes

If Yes, answer question Ⅰ, Ⅱ, Ⅲ, Ⅳ

Ⅰ. What type of alcohol did you use? □ Arrack □ Beer □ Whisky □ Others (specify....)

Ⅱ. How many times did you drink per day? □ One time □ Two times □ Three times □ More than three times

Ⅲ. How much did you take alcohol per one session? □ 1Standard drink □ 2 Standard drink □ 3 Standard drink □ 4 Standard drink □ Standard drink □ More than 5 Standard drink

Ⅳ. How many days did you use alcohol per week? Specify.....

Following questions 3, 4, 5 about your needles/equipment

3 Did you use to share your needles /equipment with your friends? □ No □ Yes

4 Did you use to clean your needles/equipment? □No □ Yes

- If Yes, did you use to share your bowls with your friends to clean needles/equipment? □ No □ Yes

5 Did you use to prepare your drug in one bowl and share with your friends? □ No □ Yes

6 Did you use to make tattoo in your body before arrest? □ No □Yes

- If Yes,

Ⅰ. Could you tell me how many times did you make it before arrested?

□ One time □ Two times □ Three times □ More than three times

Ⅱ. Could you tell me what did you use to make tattoo in your body?

□ used same needle to inject and tattoo □ Knife □ Pen □ Blade □ Others (Specify .....)

Following question 7 about your sexual activities in before arrested status.

7. Have you had sex in before arrested? □ No □ Yes

- If Yes, give information regarding below box

	Life time		1 Year		6 Months		3 Months		1 Month	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
1.Sexual activities										
2.Sex with multiple partners										
3. Condom use										
4.Condom leakage										

- If Yes for number 2 in box, answer question Ⅰ below

Ⅰ. Were your partners in before arrested? ☐ All men ☐ All women ☐ Both men and Women

- If Yes for number 3 in box, answer question Ⅱ below

Ⅱ. Did you use condoms every time before your sexual activities?

☐ No ☐ Yes

- If Yes, for number 4 in box, answer question Ⅲ below

Ⅲ. How many times that have you had experience of condom leakage in before arrested? Specify regarding your answer in row 4) .....

Question 8, 9, 10, about health risk and criminals before arrested

8. Have you ever been tested for the STD/HIV/Hep viruses? ☐ No, ☐ Yes

- If Yes, in what month and year were you most recently tested?

...../.....(Month/Year)

9. How about your results? ☐ Negative ☐ Positive

- If Positive, please give information about disease

☐ HIV/AIDS ☐ Hepatitis B ☐ Hepatitis C ☐ Syphilis ☐ Others (give information)

10. Have been an arrested before in your life time? ☐ No ☐ Yes

- If Yes,

Ⅰ. Could you tell me which age were you arrested first time?

Specify .....Years old.

Ⅱ. How many times have you been arrested in your life time? □ One time □ Two times □ Three times □ More than 3 times

Ⅲ. What was the reason for before arresting? □ Crime □ Drug trafficking □ Others (Specify.....)

Questionnaire part 3 – Severity of addiction level

ASSIST V3.0-this questionnaire was assessed your severity of addiction level in past 12 month: Ref: WHO -the alcohol, smoking and substance involvement screening test: (guidelines for use primary care).

1. In your life, have you ever use heroin? ☐ Yes -3 / ☐No – 0

2. In the past three months past how often have you used, how often have you used heroin?

   ☐Never-0 / ☐Once or Twice-2 / ☐ Monthly- 3 / ☐ Weekly-4/ ☐ Daily or Almost daily -6

3. During the past three months, how often have you had a strong desire or urge to use

   ☐ Never-0 / ☐ Once or Twice-3 / ☐ Monthly- 4 / ☐ Weekly-5/ ☐ Daily or Almost daily -6

4. During the past three months how often has your use led to health, social, legal or financial problems?

   ☐ Never-0 /☐ Once or twice-4 /☐ Monthly- 5 /☐ Weekly-6/☐ Daily or almost daily -7

5. During the past three months how often have you failed to do what was

6. normally expected of you because of your use of heroin?

   ☐ Never-0 / ☐ Once or Twice-5 / ☐ Monthly- 6 / ☐ Weekly-7/ ☐ Daily or Almost daily -8

7. Has a friend or relative or anyone else ever expressed concern about your use of heroin?

   ☐ No, Never-0 / ☐ Yes, In the past 3months-6/ ☐ Yes, not in the past 3months -3

7. You ever tried and failed to control, cut down or stop using Heroin?

   ☐ No, Never-0 / ☐Yes, In the past 3months-6/ ☐Yes, not in the past 3months -3

8. Have you ever used heroin by injection?

☐ No , Never-0 / ☐ Yes, In the past 3months-2/ ☐ Yes, not in the past 3months -1

සංකේතය ☐☐☐

අමුණුම

1. ප්‍රශ්නාවලිය 1 වෙනි කොටස - සමාජ ජනවිකාශ ලක්ෂණ

1. ලිංගභේදය: ☐ පුරුෂ ☐ ස්ත්‍රී

2. වයස: අවුරුදු .....

3. ජනවර්ගය: ☐ සිංහල ☐ දෙමළ ☐ මුස්ලිම් බර්ගර්☐ වෙනත්☐ (සඳහන් කරන්න .....)

4. ආගම: ☐ බුද්ධාගම ☐ ක්‍රිස්තියානි ☐ කතෝලික ☐ ඉස්ලාම් ☐ හින්දු ☐ වෙනත්
(සඳහන් කරන්න .....)

5. වෙසෙන දිස්ත්‍රික්කය: ☐ කොළඹ ☐ වෙනත් (සඳහන් කරන්න .....)

6. විවාහක තත්ත්වය: ☐ අවිවාහක ☐ විවාහක ☐ දික්කසාදවූ ☐ වැන්දඹු ☐ වෙන්වී සිටින
☐ විවාහවූවාසේ තවත් කෙනෙක් සමග ජීවත්වීම (දැනට විවාහවී හෝ තවත් කෙනෙකුගෙන් වෙන්වී හෝ නොමැති)

7. අධ්‍යාපනික තත්ත්වය: ☐ නුගත් ☐ වසර 5 දක්වා ☐ වසර 5 සිට 10 දක්වා ☐ අ.පො.ස.(සා/පෙ)
☐ අ.පො.ස(උ/පෙ) ☐ උපාධිය ☐ පශ්චාත් උපාධිය

8. අධ්‍යාපනය අවසන් කිරීමට ඔබට නොහැකිවී ඇත්නම් පාසලෙන් අස්වීමට හේතුව මට කියන්න?
☐ ආර්ථික අපහසුතා ☐ විභාග අසමත්වීම ☐ පාසලට යාමට තිබූ අකමැත්ත ☐ පවුල් ආරවුල්
☐ වෙනත් (සඳහන් කරන්න .....)

9. අත්අඩංගුවට පත්වීමට පෙර ඔබ ස්ථිර රැකියාවක් කළාද?☐නැත☐ඔව්. ඔව් නම්,
(සඳහන් කරන්න .....)

10. අත්අඩංගුවට පත්වීමට පෙර ඔබ තාකාලික රැකියාවක් කළාද?☐නැත☐ඔව්. ඔව් නම්
(සඳහන් කරන්න .....)

11. ප්‍රශ්න අංක 9 සහ 10 සඳහා පිළිතුර නැත නම් අත්අඩංගුවට පත්වීමට පෙර ඔබට මුදල් ලැබුනේ කෙසේද?
☐පික්පොකට් ☐සොරකම් ☐ සිහමන් ☐ණයවීම ☐වෙනත් (සඳහන් කරන්න .....)

12. (අත්අඩංගුවට පත්වීමට පෙර) මාසික ආදායම: ☐10,000 ට අඩු ☐10,000 - 20,000 අතර ☐20,000 - ☐30,000 ටත් අතර ☐30,000 වැඩි (ශ්‍රී ලංකා රුපියල්වලින්)

13. ඔබ ජීවත් වන්නේ කා සමඟද? ☐ පියා ☐ මව ☐ මව සහ පියා ☐ බිරිඳ/සැමියා ☐ නැන්දා/මාමා ☐ වෙනත් (සඳහන් කරන්න)

14. ඔබගේ පියා මත්ද්‍රව්‍ය භාවිතා කර තිබෙනවාද? ☐ නැත ☐ ඔව්

- ඔව් නම් කරුණාකර මත්ද්‍රව්‍ය වර්ගය සඳහන් කරන්න: ☐ හෙරොයින් ☐ කොකේන් ☐ වෙනත් (සඳහන් කරන්න .....)

15. ඔබගේ මව මත්ද්‍රව්‍ය භාවිතා කර තිබෙනවාද? ☐ නැත ☐ ඔව්

- ඔව් නම් කරුණාකර මත්ද්‍රව්‍ය වර්ගය සඳහන් කරන්න: ☐ හෙරොයින් ☐ කොකේන් ☐ වෙනත් (සඳහන් කරන්න .....)

16. ඔබගේ පවුලේ සාමාජිකයෙක් මත්ද්‍රව්‍ය භාවිතා කර තිබෙනවාද? ☐ නැත ☐ ඔව්

- (ඥාති සම්බන්ධය) ..... මත්ද්‍රව්‍ය වර්ගය සඳහන් කරන්න .....

17. ඔබගේ මිත්‍රයෙක් මත්ද්‍රව්‍ය භාවිතා කර තිබෙනවාද? ☐ නැත ☐ ඔව්

- ඔව් නම් කරුණාකර මත්ද්‍රව්‍ය වර්ගය සඳහන් කරන්න: ☐ හෙරොයින් ☐ කොකේන් ☐ වෙනත් (සඳහන් කරන්න .....)

18. ඔබට හෙරොයින් මත්ද්‍රව්‍ය සුරුදු කළේ කවුද?
☐ මිතුරන් ☐ ඥාතීන් ☐ විදේශිකයින් ☐ වෙනත් (සඳහන් කරන්න .....)

2. ප්‍රශ්නාවලිය 2 වන කොටස

2.1. හෙරොයින් භාවිතා කරන ආකාරය

මෙම ප්‍රශ්නාවලියෙහි ඔබ අත්අඩංගුවට පත්වීමට පෙර ඔබ හෙරොයින් භාවිතාකළ ආකාරය පිළිබඳව, ඔබ ජීවිත කාලය පුරා හෙරොයින් භාවිතා කරනවාද නැද්ද, ශරීරයට ලබාගන්නා ආකාරය පිළිබඳව, බහු මත්ද්‍රව්‍ය භාවිතය, හෙරොයින් භාවිතා කරන වාර ගණන සහ ප්‍රමාණය පිළිබඳව ප්‍රශ්න කරනු ලැබේ.

කරුණාකර පහත සඳහන් ප්‍රශ්නවලට පිළිතුරු සපයන්න:

පහත සඳහන් කොටුවට අනුව ප්‍රශ්න අංක 1 සහ 2 ට සම්පූර්ණව පිලිතුරු සපයන්න:

1. ඔබ ඔබගේ ජීවිත කාලයේදී කවදා හෝ හෙරොයින් භාවිතා කර තිබෙනවාද? □නැත □ඔව්. ඔව් නම්:
   කොටුවෙහි හෙරොයින් (1) පේලියෙහි විස්තර කරන්න.
   (ඔවුන් ජීවිත කාලය පුරා හෙරොයින් භාවිතා කලේ නම් ඔවුන්ගේ පිළිතුර ඔව් නම්, අවුරුදු 1, දින 30, දින 7)

මත්ද්‍රව්‍ය වර්ගය	1වරට භාවිතා කරනවිට වයස	මත්ද්‍රව්‍ය භාවිතා කිරීමට හේතුව	එය ලබාගන්නා මාර්ගය	ජීවිත කාල භාවිතය		අවුරුදු 1		දින 30		දින 7	
				නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්
හෙරොයින්											

පහත සඳහන් 3, 4, 5 සහ 6 වෙනි ප්‍රශ්න ඔබ මත්ද්‍රව්‍ය පරිභෝජනය කිරීමට පාවිච්චි කරන කටු / නික්ෂේපණය මෙවලම් පිළිබඳවයි.

3. ඔබ පාවිච්චි කරන කටු / මෙවලම් ඔබගේ මිතුරන් සමග බෙදාගැනීමට ඔබ පුරුදුවී සිටිනවාද? ☐ නැත ☐ ඔව්

4. ඔබ කටු / මෙවලම් පිරිසිදු කිරීමට පුරුදුවී සිටිනවාද? ☐ නැත ☐ ඔව්
ඔව් නම්,
කටු / මෙවලම් පිරිසිදු කිරීම සඳහා ඔබ භාවිතාකරන භාජනය ඔබගේ මිතුරන්ට ලබාදීමට පුරුදුවී සිටිනවාද?
☐ නැත ☐ ඔව්

5. ඔබ එක් භාජනයක ඔබගේ මත්ද්‍රව්‍ය පිළියෙල කිරීමෙන් පසුව එය ඔබගේ මිතුරන්ට ලබාදෙනවාද? ☐ නැත ☐ ඔව්

6. අන්අඩංගුවට පත්වීමට පෙර ඔබ ඔබගේ ශරීරයේ පච්ච කොටාගෙන තිබෙනවාද? ☐ නැත ☐ ඔව්

ඔව් නම්,

I අන්අඩංගුවට පත්වීමට පෙර ඔබ කී වතාවක් එසේ කර තිබෙනවාද?
☐ එක් වතාවක් ☐ දෙවතාවක් ☐ තෙවතාවක් ☐ තෙවතාවකට වැඩි

II ඔබගේ ශරීරයේ පච්ච කෙටීමට ඔබ පාවිච්චි කරන්නේ කුමක්ද?
☐ බෙහෙත් විදීමට සහ පච්ච කෙටීමට එකම කටුව භාවිතා කිරීම ☐ පච්ච කෙටීමට වෙනම කටුවක් භාවිතා කිරීම ☐ පිහිය ☐ පෑනක් ☐ බ්ලේඩ් තලයක් වෙනත් (විස්තර කරන්න .....)

පහත සඳහන් 7 වෙනි ප්‍රශ්නය ඔබ අන්අඩංගුවට පත්වීමට පෙර ඔබගේ ලිංගික ක්‍රියාකාරකම් පිළිබඳවයි.

7. අන්අඩංගුවට පත්වීමට පෙර ඔබ ලිංගිකව හැසිරී තිබෙනවාද? ☐ නැත ☐ ඔව්

- ඔව් නම්, පහත සපයා ඇති කොටුවෙහි තොරතුරු සපයන්න

1. ලිංගික ක්‍රියාකාරකම්	ජීවිත කාලය		පලමු වර්ෂය		මාස 6		මාස 3		මාස 1	
	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්
2. බහු සහකාර ලිංගික ක්‍රියාකාරකම්										
3. කොන්ඩම් භාවිතය										
4. කොන්ඩම් කැඩීයාම										

2. ඔබට හෙරොයින් නොලැබුණහොත් ඔබ පාවිච්චි කරන මත්ද්‍රව්‍ය වර්ගය කුමක්ද?
පහත කොටුවේ 1 සිට 10 වෙනි පේලියේ දක්වා ඇති පරිදි විස්තර කරන්න.

මත්ද්‍රව්‍ය වර්ගය	1වරට භාවිතා කරනවිට වයස	මත්ද්‍රව්‍ය භාවිතා කිරීමට හේතුව	එය ලබාගන්නා මාර්ගය	ජීවිත කාල භාවිතය		අවුරුදු 1		දින 30		දින 7	
				නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්
1. Benzodiazepines											
2. කොකේන්											
3. එක්සටසි											
4. නිද්‍රා පෙති											
5. කෙටමෙන්											
6. කොකේන්											
7. වේදනා නාශක											
8. අල්කොහෝල්											
9. දුම් කොළ											
10. වෙනත් (සඳහන් කරන්න											

3. අන්අඩංගුවට පත්වීමට පෙර ඔබට හෙරොයින් නොලැබුණු අවස්ථා කොපමණද?

- අන්අඩංගුවට පත්වීමට වසරකට පෙර: විස්තර කරන්න
(අවස්ථා) ..... (මස) ..... (වසර) .....
- අන්අඩංගුවට පත්වීමට මාස හයකට පෙර: විස්තර කරන්න
(අවස්ථා) ..... (මස) ..... (වසර) .....
- අන්අඩංගුවට පත්වීමට මාස හයකට පෙර: විස්තර කරන්න
(අවස්ථා) ..... (මස) ..... (වසර) .....

4. හෙරොයින් නොලැබීමට හේතුව කුමක්ද? විස්තර කරන්න .....

5. හෙරොයින් භාවිතා කරන වාරගණන: ☐ දිනපතා ☐ සතියට දෙවරක ☐ සතියට තෙවරක් ☐ සතියට 4-5 වතාවක් ☐ සතිපතා ☐ මාස්පතා

6. දවසකට ඔබ හෙරොයින් භාවිතා කරන වාරගණන කීයද? ☐ එක් වතාවක් ☐ දෙවතාවක් ☐ තෙවතාවක් ☐ තුන් වතාවකට වැඩි

7. දිනකට හෙරොයින් භාවිතා කරන ප්‍රමාණය? ☐ ග්‍රෑම් 0.25-ග්‍රෑම් 1 ☐ ග්‍රෑම් 0.5-ග්‍රෑම් 3 ☐ ග්‍රෑම් 3කට වැඩි ☐ වෙනත් (විස්තර කරන්න .....)

8. එක් අවස්ථාවකදී හෙරොයින් භාවිතා කරන ප්‍රමාණය? (විස්තර කරන්න .....)

9. අත්අඩංගුවට පත්වීමට පෙර ඔබ හෙරොයින් වෙනත් මත්ද්‍රව්‍යයක් සමග කලවම් කර තිබෙනවාද? ☐ නැත ☐ ඔව් ඔව් නම්, විස්තර කරන්න.
මත්ද්‍රව්‍යය ..... ප්‍රමාණය / ..... කවදාද ..... මාසය ..... වර්ෂය .....
වාරගණන .....

   - ඔව් නම්, හෙරොයින් වෙනත් මත්ද්‍රව්‍යයක් සමග කලවම් කිරීමට හේතුව?

     ☐ එහි ක්‍රියාකාරිත්වය වැඩි කිරීමට

     ☐ හෙරොයින් ප්‍රමාණය ප්‍රමාණවත් නොවීම

     ☐ වෙනත් (විස්තර කරන්න .....)

10. ඔබ හෙරොයින් වෙනුවට වෙනත් මත්ද්‍රව්‍යයක් භාවිතා කරන්නේනම්, එසේ භාවිතා කරන ප්‍රමාණය කියන්න පුළුවන්ද? විස්තර කරන්න .....

11. ප්‍රශ්න අංක 11 අත්අඩංගුවට පත්වීමට පෙර පමණට වඩා මත්ද්‍රව්‍යයක් භාවිතා කිරීම පිළිබඳ ඔබගේ අත්දැකීම පිළිබඳවයි.

අ. ඔබගේ විස්තර

1. ඔබ කවදා හෝ මත්ද්‍රව්‍යය ප්‍රමාණය ඉක්මවා භාවිතා කර තිබෙනවාද?

☐ 1) නැත

☐ 2) ඔව්, ප්‍රමාණය ඉක්මවා භාවිතා කළ අවස්ථා කොපමණද? අවස්ථා ලණන .....
මත්ද්‍රව්‍යය භාවිතය විස්තර කරන්න .....

ඔබ මත්ද්‍රව්‍යය කලවම් කරනවාද? ☐ නැත ☐ ඔව්
ප්‍රධාන මත්ද්‍රව්‍යය විස්තර කරන්න ..... ප්‍රමාණය .....
කලවම් කරනු ලබන්නේ ..... සමගයි. එහි ප්‍රමාණය .....

	ප්‍රමාණය ඉක්මවා භාවිතා කළේ කවදාද?		එවිට මත්ද්‍රව්‍ය භාවිතය, අල්කොහෝල් ඇතුළු සියළු මත්ද්‍රව්‍ය සඳහන් කරන්න	ඔබ මත්ද්‍රව්‍ය කලවම් කරන්නේද? ඔව් නම්, සඳහන් කරන්න		ඔබ යථා තත්ත්වයට පැමිණියේ කෙසේද?	ඔබට සහායවූයේ කවුරුන්ද?
	මාසය	වර්ෂය		ප්‍රධාන මත්ද්‍රව්‍ය	කලවම් කරන මත්ද්‍රව්‍ය		
1							
2							
3							

2. අවසන් වරට ඔබ පමණට වඩා වැඩියෙන් ගත්තේ කවදාද? මාසය ..... වර්ෂය .....

3. අවසන් වරට පමණට වඩා වැඩියෙන් ගත් මත්ද්‍රව්‍යය සියල්ල විස්තර කරන්න .....

4. ඔබ යථා තත්ත්වයට පැමිණියේ කෙසේද? .....

5. ඔබට සහායවූයේ කවුරුන්ද? .....

ආ. ඔබගේ මිත්‍රයා

ඔබගේ මිත්‍රයා හෝ ළඟම මිත්‍රයා පමණට වඩා වැඩියෙන් මත්ද්‍රව්‍යය භාවිතාකර තිබේද?

☐ 1) නැත

☐ 2) ඔව්, කරුණාකර අයිතම අ) සහ ආ) සඳහා පිළිතුරු සපයන්න

අ) ඔව්, මගේ මිත්‍රයා මැරුණේ ඔහු/ඇය තනියම පමණට වඩා වැඩියෙන් මත්ද්‍රව්‍යය භාවිතාකිරීම හේතුවෙන්

ඔබගේ නම සඳහන් කරන්න	ඔබටත් ඔබගේ මිතුරාටත් ඇති ඥති සම්බන්ධය ☐මිතුරෙක් පමණයි ☐මාගේ සමීප මිතුරා ☐අපගේ කල්ලියේ මිතුරෙක්	අන්වර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු ..... ඔහු/ඇය පමණට වඩා වැඩියෙන් මත්ද්‍රව්‍යය භාවිතා කළේ කවදාද? මාසය ..... වර්ෂය .... මත්ද්‍රව්‍යය භාවිතය විස්තර කරන්න .....

ආ) ඔව්, මගේ මිත්‍රයා මැරුණේ ඔහු/ඇය කල්ලියක් වශයෙන් පමණට වඩා වැඩියෙන් මත්ද්‍රව්‍යය පමණක් භාවිතාකිරීම හේතුවෙන්.
කරුණාකර ඔබගේ මිතුරාගේ තොරතුරු විස්තර කරන්න.

ඔබගේ නම සඳහන් කරන්න	ඔබටත් ඔබගේ මිතුරාටත් ඇති ඥති සම්බන්ධය ☐මිතුරෙක් පමණයි ☐මාගේ සමීප මිතුරා ☐අපගේ කල්ලියේ මිතුරෙක්	අනුවර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු ..... ඔහු/ඇය පමණට වඩා වැඩියෙන් මත්ද්‍රව්‍යය භාවිතා කළේ කවදාද? මාසය ..... වර්ෂය .... මත්ද්‍රව්‍යය භාවිතය විස්තර කරන්න .....

ඉහත ආ) හි සඳහන් කල්ලියට අයත් මිතුරන්ගේ අන්වර්ත නම් සහ ස්ත්‍රී පුරුෂභාවය කරුණාකර සඳහන් කරන්න.

1. ඔබගේ කල්ලියේ මිතුරාගේ අනුවර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු	3. ඔබගේ කල්ලියේ මිතුරාගේ අනුවර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු	5. ඔබගේ කල්ලියේ මිතුරාගේ අනුවර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු .....
2. ඔබගේ කල්ලියේ මිතුරාගේ අනුවර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු	4. ඔබගේ කල්ලියේ මිතුරාගේ අනුවර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු	6. ඔබගේ කල්ලියේ මිතුරාගේ අනුවර්ත නම ..... ස්ත්‍රී/පුරුෂ භාවය ☐පිරිමි ☐ස්ත්‍රී වයස් අවු .....

2.2. හෙරොයින් භාවිතා කිරීමේ අවදානම් හැසිරීම

පහත 1 වෙනි සහ 2 වෙනි ප්‍රශ්න අත්අඩංගුවට පත්වීමට පෙර ඔබගේ දුම් පානය කිරීමේ සහ මත්ද්‍රව්‍යය භාවිතා කිරීමේ තත්ත්වය පිළිබඳවයි.

1. අත්අඩංගුවට පත්වීමට පෙර කවදා හෝ ඔබ දුම් පානය කර තිබෙනවාද? ☐ නැත ☐ ඔව්

ඔව් නම්, පහත සඳහන් කොටුව සහ ප්‍රශ්න I සහ II ට පිළිතුරු සපයන්න.

දුම් පානය	පලමු වර්ෂය		මාස 6		මාස 3		මාස 1	
	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්

I දිනකට කී වතාවක් ඔබ දුම් පානය කරනවාද?

☐ එක් වතාවක් ☐ දෙවතාවක් ☐ තෙවතාවක් ☐ වෙනත් (විස්තර කරන්න .....)

II දිනකට ඔබ පානය කරන දුම්වැටි ප්‍රමාණය කොපමණද? (විස්තර කරන්න .....)

2. අත්අඩංගුවට පත්වීමට පෙර කවදා හෝ ඔබ මත්පැන් පානය කර තිබෙනවාද? ☐ නැත ☐ ඔව්

- ඔව් නම්, පහත සඳහන් කොටුව සහ ප්‍රශ්න I, II, III සහ IV ට පිළිතුරු සපයන්න.

මත්පැන් පානය	පලමු වර්ෂය		මාස 6		මාස 3		මාස 1	
	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්

I ඔබ පානය කරන මත්පැන් වර්ගය කුමක්ද?

☐ අරක්කු ☐ බියර් ☐ විස්කි ☐ වෙනත් (විස්තර කරන්න .....)

II දිනකට කී වතාවක් ඔබ මත්පැන් පානය කරනවාද? (විස්තර කරන්න .....)

☐ එක් වතාවක් ☐ දෙවතාවක් ☐ තෙවතාවක් ☐ වෙනත් (විස්තර කරන්න .....)

III එක් වතාවකට ඔබ පානය කරන මත්පැන් ප්‍රමාණය කොපමණද?

☐ 1 සම්මත පරිමාවක් ☐ සම්මත පරිමාවන් 2ක් ☐ සම්මත පරිමාවන් 3ක් ☐ සම්මත පරිමාවන් 4ක්

☐ සම්මත පරිමාවන් 5ක්

☐ සම්මත පරිමාවන් 5කට වැඩි

IV සතියකට කී දවසක් ඔබ මත්පැන් පානය කරනවාද? විස්තර කරන්න .....

පහත සඳහන් 3, 4, 5 සහ 6 වෙනි ප්‍රශ්න ඔබ මත්ද්‍රව්‍ය පරිභෝජනය කිරීමට පාවිච්චි කරන කටු / නික්ෂේපණය මෙවලම් පිළිබඳවයි.

3. ඔබ පාවිච්චි කරන කටු / මෙවලම් ඔබගේ මිතුරන් සමග බෙදාගැනීමට ඔබ පුරුදුවී සිටිනවාද? ☐නැත ☐ඔව්

4. ඔබ කටු / මෙවලම් පිරිසිදු කිරීමට පුරුදුවී සිටිනවාද? ☐නැත ☐ඔව්
   ඔව් නම්,
   කටු / මෙවලම් පිරිසිදු කිරීම සඳහා ඔබ භාවිතාකරන භාජනය ඔබගේ මිතුරන්ට ලබාදීමට පුරුදුවී සිටිනවාද?
   ☐නැත ☐ඔව්

5. ඔබ එක් භාජනයක ඔබගේ මත්ද්‍රව්‍ය පිළියෙල කිරීමෙන් පසුව එය ඔබගේ මිතුරන්ට ලබාදෙනවාද? ☐නැත ☐ඔව්

6. අත්අඩංගුවට පත්වීමට පෙර ඔබ ඔබගේ ශරීරයේ පච්ච කොටාගෙන තිබෙනවාද? ☐නැත ☐ඔව්

   ඔව් නම්,

   I අත්අඩංගුවට පත්වීමට පෙර ඔබ කී වතාවක් එසේ කර තිබෙනවාද?
   ☐එක් වතාවක් ☐දෙවතාවක් ☐තෙවතාවක් ☐තෙවතාවකට වැඩි

   II ඔබගේ ශරීරයේ පච්ච කෙටීමට ඔබ පාවිච්චි කරන්නේ කුමක්ද?
   ☐බෙහෙත් විදීමට සහ පච්ච කෙටීමට එකම කටුව භාවිතා කිරීම ☐පච්ච කෙටීමට වෙනම කටුවක් භාවිතා කිරීම ☐ පිහිය☐ පැනක් ☐ බ්ලේඩ් තලයක් වෙනත් (විස්තර කරන්න .....)

පහත සඳහන් 7 වෙනි ප්‍රශ්නය ඔබ අත්අඩංගුවට පත්වීමට පෙර ඔබගේ ලිංගික ක්‍රියාකාරකම් පිළිබඳවයි.

7. අත්අඩංගුවට පත්වීමට පෙර ඔබ ලිංගිකව හැසිරී තිබෙනවාද? ☐ නැත ☐ ඔව්

   - ඔව් නම්, පහත සපයා ඇති කොටුවෙහි තොරතුරු සපයන්න

1. ලිංගික ක්‍රියාකාරකම්	ජීවිත කාලය		පළමු වර්ෂය		මාස 6		මාස 3		මාස 1	
	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්	නැත	ඔව්
2. බහු සහකාර ලිංගික ක්‍රියාකාරකම්										
3. කොන්ඩම් භාවිතය										
4. කොන්ඩම් කැඩියාම										

- කොටුවෙහි අංක 2ට පිළිතුර ඔව් නම්, පහත I ප්‍රශ්නයට පිළිතුරු සපයන්න.

I අත්අඩංගුවට පත්වීමට පෙර ඔබගේ පාර්ශවකරුවන්? ☐ සියළු දෙනාම පිරිමින් ☐ සියළු දෙනාම ස්ත්‍රීන් ☐ පිරිමින් සහ ස්ත්‍රීන්

- කොටුවෙහි අංක 3ට පිළිතුර ඔව් නම්, පහත II ප්‍රශ්නයට පිළිතුරු සපයන්න.

II ලිංගිකව එක්වීමට පෙර සෑම අවස්ථාවකදීම ඔබ කොන්ඩමයක් පාවිච්චි කරනවාද? ☐ නැත ☐ ඔව්

- කොටුවෙහි අංක 4ට පිළිතුර ඔව් නම්, පහත III ප්‍රශ්නයට පිළිතුරු සපයන්නත.

III අත්අඩංගුවට පත්වීමට පෙර කී සැරයක් කොන්ඩමය පුපුරා ගොස් තිබෙනවාද?
(4 වෙනි පේලියේ ඔබගේ පිළිතුර සම්බන්ධයෙන් විස්තර කරන්න) .....

පහත සඳහන් 8, 9 සහ 10 වෙනි ප්‍රශ්න සෞඛ්‍යමය අවදානම් සහිත අපරාධකරුවන් පිළිබඳවයි.

8. ඔබ කවදා හෝ STD/HIV/Hep වෛරසය සඳහා පරීක්ෂණයට භාජනයවී තිබෙනවාද? ☐ නැත ☐ ඔව්

- ඔව් නම්, අවසන් වරට ඔබ පරීක්ෂණයට භාජනයවූ මාසය සහ වර්ෂය සඳහන් කරන්න? (මාසය / වර්ෂය)

9. ඔබගේ ප්‍රතිඵලය කෙසේද? ☐ ආසාදිතවී නැත ☐ ආසාදිතවී ඇත

- ආසාදිත නම්, රෝගය පිළිබඳ තොරතුරු සපයන්න

☐ HIV / AIDS ☐ හෙපටයිටිස් බී ☐ හෙපටයිටිස් සී ☐ සිපිලිස් ☐ වෙනත් (විස්තර කරන්න)

10. ඔබගේ ජීවිත කාලයේදී මෙයට පෙර ඔබ අත්අඩංගුවට පත්වී ඇත්ද? ☐ නැත ☐ ඔව්

- ඔව් නම්,

I පළමු වරට අත්අඩංගුවට පත්වනවිට ඔබගේ වයස කීයද?
විස්තර කරන්න අවුරුදු .....

II ජීවිත කාලයේදී කී වතාවක් අත්අඩංගුවට පත්වී තිබෙනවාද?
☐ එක් වතාවක් ☐ දෙවතාවක් ☐ තෙවතාවක් ☐ තුන්වතාවකට වැඩි

III අත්අඩංගුවට පත්වීමට හේතුව කුමක්ද?
☐ අපරාධයක් ☐ මත්ද්‍රව්‍ය ප්‍රවාහනය ☐ වෙනත් (විස්තර කරන්න .....)

ප්‍රශ්නාවලිය - 3 වෙනි කොටස - ඇබ්බැහිවීම් මට්ටමෙහි ප්‍රබලතාවය

ASSIST V3.0-මෙම ප්‍රශ්නාවලිය ජීවිත කාලය පුරා සහ ගතවූ මාස 3 තුල ඔබගේ ඇබ්බැහිවීම් මට්ටමෙහි ප්‍රබලතාවය තක්සේරු කරනු ඇත. බලන්න WHO - මත්ද්‍රව්‍ය, දුම් පානය සහ සම්බන්ධ ද්‍රව්‍ය පිළිබඳ පරීක්ෂණය: (ප්‍රාථමික සත්කාර භාවිතය සඳහා මාර්ගෝපදේශ)

1. ඔබගේ ජීවිත කාලයේදී කවදා හෝ ඔබ හෙරොයින් භාවිතා කර තිබෙනවාද? ☐ ඔව් 3 ☐ නැත 0

2. ගතවූ මාස 3 තුල ඔබ කී වතාවක් හෙරොයින් භාවිතා කර තිබෙනවාද?
   ☐ කවදාවත් නැත 0 ☐ වතාවක් හෝ දෙවතාවක් 2 ☐ මාසිකව 3 ☐ සතිපතා 4 ☐ දිනපතා හෝ බොහෝදුරට දිනපතා 6

3. ගතවූ මාස 3 තුල කී වතාවක් පාවිච්චි කළ යුතුයයි ඔබට දැඩිව දැනී තිබෙනවාද?
   ☐ කවදාවත් නැත 0 ☐ වතාවක් හෝ දෙවතාවක් 2 ☐ මාසිකව 3 ☐ සතිපතා 4 ☐ දිනපතා හෝ බොහෝදුරට දිනපතා 6

4. ගතවූ මාස 3 තුල ඔබගේ හෙරොයින් භාවිතය නිසා ඔබ සෞඛ්‍ය, සමාජ, නෛතික හෝ මූල්‍ය ප්‍රශ්නවලට මුහුණ දී තිබෙනවාද?
   ☐ කවදාවත් නැත 0 ☐ වතාවක් හෝ දෙවතාවක් 4 ☐ මාසිකව 5 ☐ සතිපතා 6 ☐ දිනපතා හෝ බොහෝදුරට දිනපතා 7

5. ගතවූ මාස 3 තුල ඔබගේ හෙරොයින් භාවිතය නිසා සාමාන්‍යයෙන් ඔබ කළ යුතුයැයි ඔබගෙන් බලාපොරොත්තුවන කාර්යයන් ඉටුකිරීමට ඔබ කී වතාවක් අසමත්වී තිබෙනවාද?
   ☐ කවදාවත් නැත 0 ☐ වතාවක් හෝ දෙවතාවක් 5 ☐ මාසිකව 6 ☐ සතිපතා 7 ☐ දිනපතා හෝ බොහෝදුරට දිනපතා 8

6. ඔබගේ මිතුරෙක් හෝ ඥාතියෙක් කවදා හෝ ඔබගේ හෙරොයින් භාවිතය පිළිබඳව කනස්සල්ල පළකර තිබෙනවාද?
   ☐ කිසිසේත් නැත-0 ☐ ඔව්, ගතවූ මාස 3 තුල-6 ☐ ඔව්, ගතවූ මාස 3 තුල නොවේ-3

7. ඔබ කවදා හෝ හෙරොයින් භාවිතය පාලනය කිරීමට, අඩු කිරීමට හෝ නතර කිරීමට උත්සාහ කර අසමත්වී තිබෙනවාද?
   ☐ කිසිසේත් නැත-0 ☐ ඔව්, ගතවූ මාස 3 තුල-6 ☐ ඔව්, ගතවූ මාස 3 තුල නොවේ-3

8. ඔබ කවදා හෝ නික්ෂේපනය මගින් හෙරොයින් භාවිතා කර තිබෙනවාද?
   ☐ කිසිසේත් නැත-0 ☐ ඔව්, ගතවූ මාස 3 තුල-2 ☐ ඔව්, ගතවූ මාස 3 තුල නොවේ-1

Volunteer consent form

Name(s) of the investigator: Theruwani Narmada Dissanayake

(Student ID No: 5978825653), CPHS, University of Chulalongkorn, Bangkok, Thailand

Name of the adviser: Asst. Prof. Chitlada Areesantichai, PhD,

College of Public Health Sciences, University of Chulalongkorn, Bangkok, Thailand

Address of the institution where the study is to be carried out: prisoners in Sri Lanka

Purpose of the study (with a brief description of the procedure to be carried out): To assess Patterns of Heroin use and risk behaviors among prisoners in Colombo, Sri Lanka

The study has been explained to me and I understand:

a. Objectives and method of study
b. I participate at this study voluntarily
c. That information is not manipulated under the influence of any person or institution
d. It was explained to me that that the personal information submitted by me would be kept confidentially
e. Refusal for participation at the study would not affect my rights and security

I therefore agree to participate in this study.

Signature of the participant.....

Full name .....

Date.....

I have been present while the procedure has been explained to the participant and I have witnessed his consent to take part in the study.

Signature of witness..... (The witness should be a person NOT connected with the study)

Full Name .....

Appendix B

List of Experts

Name of the expert persons are mentioned below.

1. Snr. Prof. Rohini Fernandopulle, MBBS, PhD, FSLCGP

   Senior Professor of Pharmacology

   Kotelawala Defence University

   Ratmalana,

   Sri Lanka

2. Dr. Kamal Jayasinghe, MBBS, MSc, (Med. Admin) MCMA MBA, DIPPCA,

   Chief Executive Officer

   National Medicines Regulatory Authority,

   Noris canal Road,

   Colombo,

   Sri Lanka

3. Mr Aravida Siriwardena, B Pharm, M Phil

   Senior Lecturer,

   University of Sri Jayewardenepura,

   Sri Lanka

Appendix C

Instrument evaluation - Questionnaire part 2

Then questionnaire was piloted on 30 heroin users in*" Boogambera"* prison Kandy, Sri Lanka since there are similarities in context as for the reliability of measurement tool. The internal consistency was available to be 0.618.

Reliability Statistics

Cronbach's Alpha	N of Items
0.618	11

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Drug lifetime user	14.47	4.051	0	0.624
Alcohol use	15.43	4.047	-0.041	0.633
Mode of use heroin	14.47	4.051	0	0.624
Amount per day	14.4	3.972	-0.038	0.652
Having over dose	14.43	4.047	-0.041	0.633
Heroin mix with others	15.47	4.051	0	0.624
Are your smoked	14.8	3.338	0.276	0.597
Share your needles	15.2	1.752	0.81	0.376
Are you clean your needles	15.4	3.214	0.849	0.520
Share your bowl	15.43	3.702	0.448	0.588
Tattoo making	15.17	2.006	0.628	0.478

Content validity – Used Item of Objective Congruence (IOC) for questionnaire part 2

Pattern of heroin use

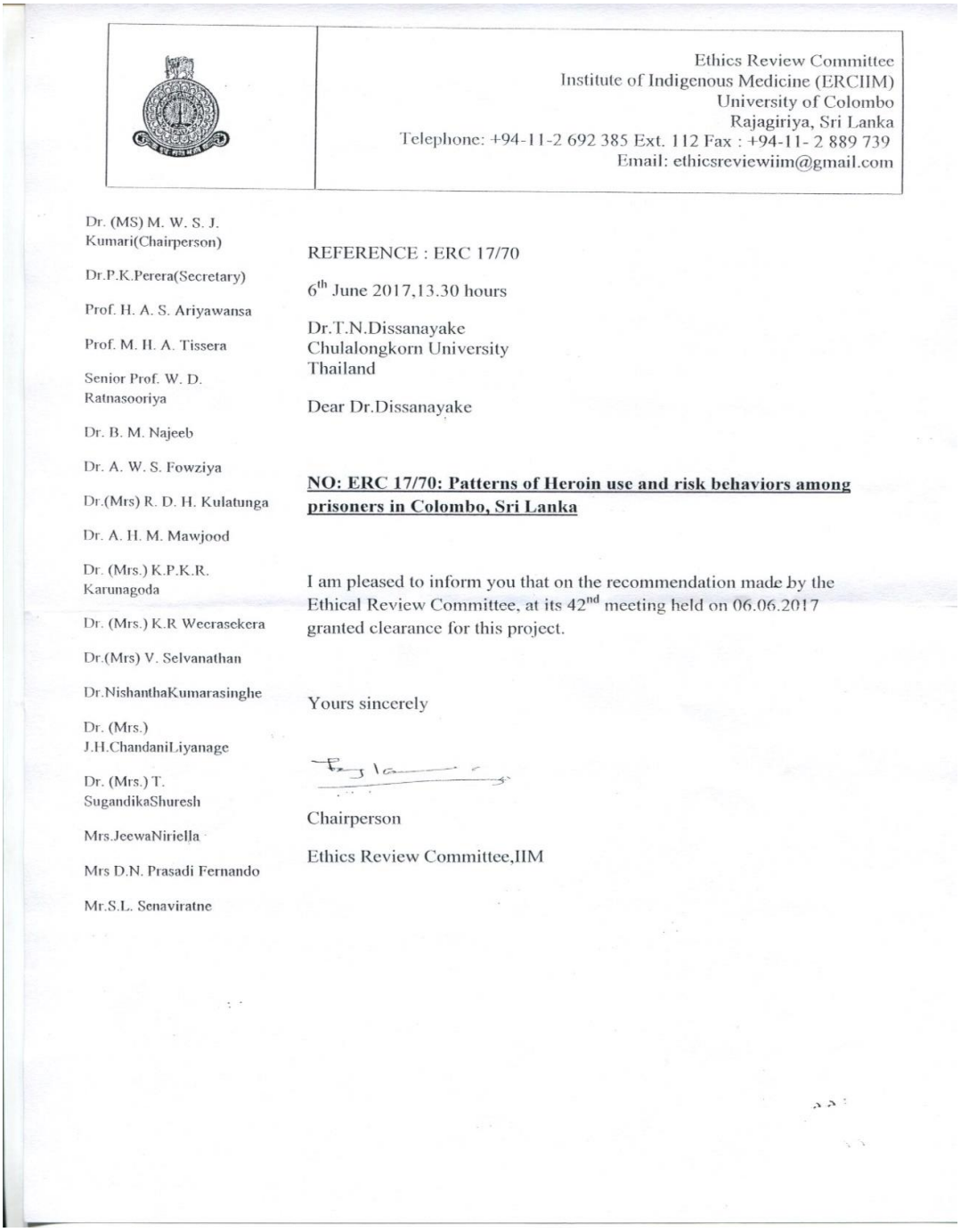
Question number	expert 1	expert 2	expert 3	total	IOC = ΣN/number of experts
1	1	1	1	3	1
2	1	1	1	3	1
3	0	1	1	2	0.7
4	0	1	1	2	0.7
5	1	1	1	3	1
6	1	1	1	3	1
7	1	1	1	3	1
8	1	1	1	3	1
9	1	1	1	3	1
10	0	1	1	2	0.7
11	1	1	13		1

Risk behaviors

Question number	expert 1	expert 2	expert 3	total	IOC = ΣN/number of experts
1	1	1	1	3	1
2	1	1	1	3	1
3	1	1	1	3	1
4	0	1	1	2	0.7
5	1	0	1	2	0.7
6	1	1	1	3	1
7	1	1	1	3	1
8	1	1	1	3	1
9	1	1	1	3	1
10	1	1	1	3	1

Appendix D

Ethical approval



Ethics Review Committee
Institute of Indigenous Medicine (ERCIIM)
University of Colombo
Rajagiriya, Sri Lanka
Telephone: +94-11-2 692 385 Ext. 112 Fax : +94-11- 2 889 739
Email: ethicsreviewiim@gmail.com

REFERENCE : ERC 17/70

6th June 2017,13.30 hours

Dr.T.N.Dissanayake
Chulalongkorn University
Thailand

Dear Dr.Dissanayake

NO: ERC 17/70: Patterns of Heroin use and risk behaviors among prisoners in Colombo, Sri Lanka

I am pleased to inform you that on the recommendation made by the Ethical Review Committee, at its 42nd meeting held on 06.06.2017 granted clearance for this project.

Yours sincerely

Chairperson

Ethics Review Committee,IIM

VITA

Dr. T. N. Dissanayake

Ayurvedic Medical officer

80, Wewagedara, Kurunegala, Sri Lanka.

Tel: +94718185782 Email: theruwaninarmada@gmail.com

WORK EXPERIENCE

- Ayurvedic hospital, Kurunegala, North Western province, Sri Lanka

Medical Officer-Oct.2007-present

- Central Ayurvedic dispensary, Laggala-Pallegama in central province, Sri Lanka

Medical Officer in Charge-Dec.2004-Oct.2007

ACADEMIC QUALIFICATION

- 1995-2000

  University of Colombo, Institute of indigenous Medicine,

  Sri Lanka

  Graduation: Bachelor of Ayurvedic Medicine and Surgery

- 2010

Korean Clinic, National Ayurvedic Teaching Hospital, Colombo, Sri Lanka.

Application and Treatment of Acupuncture in oriental Medicine.

- 2010-2011

  University of Colombo, Sri Lanka

  Postgraduate Diploma in Ayurveda Medicine