Heroin Users in Sri Lanka
Refinement of the Careers Study

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RESEARCH AND PUBLICATIONS DIVISION
NDDCB/UNDCP/WHO PROJECT

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FROM THE CHAIRMAN, NDDCB

A clear mandate conferred by Act of Parliament upon the National Dangerous Drugs Control Board, is that of research into aspects of drug use in the country. In this connection, the Research Division of the Board initially focused on epidemiological studies. It was soon realised that drug use trends were of greater specific use in control activity. It was also realised that user profiles, promoting factors, and effects of drug use in the local context were rewarding aspects for study.

That was how the concept of Career Studies came to be. The first of these, profiling heroin users, was completed in 1988. That was during the first phase of our UN funded project. The Board now proudly presents the next career study, during the 2nd phase of the same project.

The usefulness of a repeat study, conducted on the same lines as before, may be justifiably questioned. The current study is by no means a repetition of the former. This proceeds, with greater refinement, to validate some of the findings of the '88 study. In addition, this piece of investigation focuses on intravenous drug use; and also on female heroin dependent persons, a sub sample of whom has been studied in detail.

I am personally grateful to our research staff for their unremitting efforts. It is our fervent hope that these research findings will, even in meagre measure, help those engaged in devout drug combat; and, better focus their control activities towards cost-efficiency.

Professor Nandadasa Kodagoda.

Foreword

I AM HAPPY to provide a foreword to this publication on Heroin Users in Sri Lanka: Refinement of the Careers Study. It is the report of a research conducted in 1992 by the National Dangerous Drugs Control Board Project. The first Careers Study was conducted in 1988 and the report was published in 1990. In my view, it is an authoritative document on heroin users in Sri Lanka and has been much used in drug abuse prevention and control work.

A non-random sample of 371 heroin users was interviewed for the study in selected districts without proposing any hypothesis for testing. The objectives of the study were to ascertain a) the reasons for the initiation to heroin use, its repeated use, b) the factors and circumstances that were critical for transgression to heroin dependence, and c) the family as well as social interactions.

In addition, the findings of the present survey were compared with those of the previous one.

Due to the sample size and the sampling, one could be sceptical about generalizing the results to a larger population. However, it is noteworthy that the prevalence of heroin use is unevenly distributed in the general population, mostly weighted towards the urban areas. Hence, the cost of studying a random sample of heroin users heavily outweighs its benefits.

Research is the key to understand any problem and to effect better solutions to it. Thus, any efficient and effective drug intervention programme should have an integral research component. It not only helps in a better understanding of the issue but also assists in drug prevention and rehabilitation of drug users. The mandate of the National Dangerous Drugs Control Board (NDDCB) and the UN Project Document clearly emphasise the need to undertake suitable research activities to formulate efficient and effective strategies to combat the drug menace in Sri Lanka.

Drug abuse is a multifaceted phenomenon with health, social, economic and legal ramifications. Its implications range from petty theft of a user to support the habit to organised crimes such as narco-terrorism by drug mafias. Drug trafficking is a crime without national frontiers. Its perpetrators are no respecters of the law or social norms. Perhaps, the only possible way to combat the scourge of drugs is to reduce the supply of drugs through effective law enforcement and at the same time to reduce the demand for it through preventive education, treatment and rehabilitation programmes. Thus, its effects could be kept below the level of injury to the society.

As the Assistant Director of Research and Publications, I commend Mr. P.R. Kandiah, Research Officer and his team for their enthusiasm and dedication in the endeavour. It is our earnest hope that this publication would be useful to both policy makers and programme planners in drug abuse prevention and control work as well as to the general reader.

Y. Ratnayake, B.A. (Hons.), M.S.W.

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National Dangerous Drugs Control Board,
Colombo, Sri Lanka.

Preface

DRUGS OR PSYCHOACTIVE substances have intoxicated and intrigued human beings since time immemorial. Yet the knowledge about them is still incomplete. Despite the disapproval of many spiritual and social leaders as well as social controls and interventions their use appears not to have decreased.

Drugs are psychoactive substances capable of altering mood, perception and consciousness. They are habit-forming. In drug abuse there is a tendency to use the drugs in a way detrimental to the individual, family or to the society. Drug dependence or addiction is the compulsion by oneself to take drugs continuously or periodically to experience its effects. In the state of drug dependence, sometimes drugs are used to avoid the discomfort due to its absence.

Opium is a latex-like substance obtained from the opium poppy *(Papaver somnifrum)*. Heroin *(Diacyl morphine)* is a semi-synthetic substance derived from opium. It has been used for centuries to treat many different diseases and also for its euphoric effects. More efficient drugs developed later has eliminated its use medically. The recreational users too have turned to more potent opiates like heroin.

In Sri Lanka too, towards the latter part of the nineteenth century, opium was used for recreational purposes, initially, by the plantation workers and subsequently by others as well. Around the early twentieth century, many users became addicted to it. This led to a public agitation to the colonial British government to abolish the opium trade. As a result, its use was restricted to medicinal purposes. Consequently, the number of users was gradually reduced towards the middle of the twentieth century.

Ironically, in and around early 1980, a more potent purified derivative of opium – heroin – entered the local drug scene. By 1983, its abuse reached epidemic proportions. The National

Dangerous Drugs Control Board (NDDCB) was established by a parliamentary act in 1984 and entrusted with the task of combating the drug menace. The NDDCB was offered the assistance of the United Nations Fund for Drug Control (UNFDAC) and the United Nations Development Programme (UNDP) in 1987.

Among UN Project activities, research on prevention and control of drug abuse was identified as a priority area. Under research, the first Careers Study on Heroin Users was conducted in 1988 and its results were published in 1990. In recognition of the successful completion of the first phase, the Project was awarded a second phase in 1991, through the United Nations Drug Control Programme (UNDCP). In 1992, it was decided to repeat the Careers Study to assess the trends and patterns of heroin use and to refine the findings of the previous study.

The results suggest that the profile of the heroin user has not changed much, other than for the method of use. During the period 1988 to 1992, the rate of increase in the number of new users had declined and the total increase had stabilized. This could be attributed to the drug intervention programmes carried out with international assistance and local expertise.

We wish to acknowledge the contributions of the following towards the successful completion of the research study: Dr. H. Sell, World Health Organization (WHO) Regional Office, New Delhi; Dr. Aung Myint; WHO Representative in Sri Lanka; the UNDCP officials and WHO, Sri Lanka, for its financial and technical support.

Prof. N. Kodagoda, Chairman, NDDCB, for the technical expertise, encouragement and guidance; Mr. Y. Ratnayake, Assistant Director, Research and Publications, NDDCB, for his comments and technical consultancy; Mr. C.T. Jansz, former Chairman, NDDCB and Mrs. C. de Silva, former Project Director, NDDCB for their assistance and guidance; Miss Badrani Nanda Kumari, Assistant Research Officer, NDDCB, for the assistance in data analysis and report writing; Ms. P.R. Gamini Jayalath, S.K.J.B. Senaratne, P.A.N. Miranda, P. Mrihagalle, and T.W. Pemasiri, Outreach Workers, NDDCB, for their untiring efforts in data collection; Miss Tamara Perera, Data Entry Operator-cum-Typist, NDDCB Project, for the data entry and secretarial work; the Unit Managers of the Prevention, Treatment and Rehabilitation Centres,

NDDCB and other officials of the institutions for their co-operation in enabling the researchers to interview the heroin users.

Mr. H.G. Dharmadasa, Commissioner of Prisons for permitting us to interview imprisoned drug offenders for the survey; Mr. K. Kurukulasuriya, Editor, International Irrigation Management Institute (IIMI), for reading the manuscript and editing the report.

The Commercial Printing Division, The Associated Newspapers of Ceylon Ltd. for printing the report.

Last, but not least, we owe our thanks to those heroin users who participated in the survey without any remuneration and to all those who contributed to the completion of the study in numerous ways.

We hope that this publication will be of use to the public in general and to the drug abuse prevention and control specialists in particular. Suggestions and comments are most welcome.

P. Ravi Kandiah, M.Sc.,

Research Officer,
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EXECUTIVE SUMMARY

THE HISTORY OF heroin abuse in Sri Lanka is almost a decade old. A research study was conducted in a non-probable sample of 371 heroin users in the districts of Colombo (53%), Gampaha (09%), Galle (19%) and Kandy (19%) in 1992. The aim of the study was to ascertain the heroin-use situation, trends and patterns, and to compare the results with the other research studies. The study was a refinement of the Careers Study of Heroin Users conducted in 1988.

The summary of the major findings of the survey is as follows :

The mean duration of heroin use in Sri Lanka in 1988 was 4.3 years and in 1992 it was 07 years. The mean age of the heroin users in 1988 was 26 years and in 1992 it was 31. Hence, it could be assumed that most of the present heroin users are those who started prior to 1984 and had continued to use it.

The mean duration of the addiction careers is an important indicator of the degree of addiction. The longer the duration of the addiction careers the severe the degree of addiction. As compared to India and Pakistan where the mean duration is more than 15 years and UK and USA where it is more than 25 years, the degree of addiction of heroin users in Sri Lanka is less.

Nearly 50% of the sample had begun on heroin between 1977 and 1984, and 40% between 1982 and 1984. Only around 25% of the new users had begun between 1984 and 1992. Thus it could be concluded that the rate of new recruits had decreased, as compared to the period prior to 1984.

"Chasing the dragon" or "chinese" -- inhalation of the vapour emitted from the heated heroin on a tin foil -- is still the most common method of heroin use. Intravenous heroin use which was 01% in 1988, had increased to 13% in 1992 -- a 12-fold increase.

Of the above, 02% was regular users. Some had resorted to intravenous use in order to economize on heroin and because of its superior effect.

Promiscuity was common amongst intravenous drug users (IVDUs). On an average, the IVDUs have had sex with 07 partners. In addition, needle sharing was relatively high. Hence, the IVDUs in Sri Lanka could be considered as a high risk group of the HIV epidemic.

Peer influence and curiosity were the main reasons for the initiation into heroin use. Many had started on heroin when they were teenagers and some had been truants or school dropouts. The influence of tourism in the initiation into heroin use had been minimal. While 9 out of 10 heroin users had started on heroin due to peer influence only 1 in 50 had done so due to tourist influence.

The "at risk" group of heroin use was males between 15–30 years of age, mostly unmarried and residing in urban areas, with less than 10 years of education and mostly small-scale entrepreneurs or labourers.

On an average a regular heroin user spent Rs.150.00 on heroin per day. The estimated expenditure of 50,000 heroin users would be approximately Rs.8 million (US$163,000) per day and for a year it is equivalent to 01% of Sri Lanka's GNP in 1992 (per capita GNP=US$369). Thus when heroin is smuggled in foreign exchange is drained out.

Heroin users are multiple drug users. They use tobacco, alcohol, cannabis, opium and psychotherapeutic drugs. Diazepam, Flunitrazepam, Chlorphenieramine maleate, Methadone and Phenobarbitone are the regularly used psychotherapeutic drugs. These drugs are used with or in lieu of heroin. Some had used cocaine in Sri Lanka and abroad.

Of the heroin users, 2/3 had been treated for heroin dependence. On an average, a heroin user had been treated three times. The most number of heroin users had been treated by the general practitioners and a considerable number with the intervention of NGOs. Hence, more private and social-service agencies could be encouraged to participate in detoxification and rehabilitation of drug users.

Among heroin users nearly 33% had been treated at the NDDCB treatment centres. The number of heroin users treated at government hospitals had decreased during the period 1988–1992 probably due to the establishment of NDDCB centres.

The number of heroin users arrested for criminal activities has increased during the period 1988–1992. Nearly 2/3 had been arrested for drug-related offences and many were recidivists. Thus, imprisonment alone is of little use as a deterrent for drug use.

While the profile of the heroin users has not changed much during the last 5 years, the rate of new recruits to heroin use appears to have decreased. Increased drug awareness and various intervention programmes by governmental and non-governmental agencies along with the support of UN and other donors since 1988 could be attributed to this situation.

However, intravenous use, psychotropic drug use and the number of persons being arrested for drug-related offences have increased. Promiscuity and a high degree of needle-sharing make the intravenous drug users more vulnerable to HIV. There is a possibility of new drugs (e.g., cocaine / "speed ball") or designer drugs -- drugs whose chemical structures are altered to make them more potent -- or use of drugs in combination with psychotherapeutic drugs being introduced and more drug users resorting to intravenous use.

Hence, it is imperative that the above-mentioned trends and patterns of drug use be taken into consideration in policy planning and implementation of drug intervention programmes in the island.

INTRODUCTION

PEOPLE HAVE USED naturally occurring psychotropic substances since ancient times (Kalant 1971). Plants such as betel *(Piper betel)*, arecanut *(Areca catechu)*, tobacco *(Nicotiana tabacum)*, cannabis *(Cannabis sativa)*, opium poppy *(Papaver somniferum)*, etc., have been deliberately grown to sustain the habit of psychotropic use, i.e., to alter mood perception and consciousness (Gossop 1982). However, over a long period of time, various social controls have evolved to prevent the drug use reaching the threshold of social and economic injuries to society.

In Sri Lanka, too, psychotropic substances have been used since ancient times, even though the two earliest written references to drug use in the island are Robert Knox's one to prevalent addictive alcohol use in the seventeenth century (Knox 1681) and the Dutch proclamation on opium in 1675. The colonial rule in the island by the Western powers -- the Portuguese, the Dutch and the British -- and the socio-economic and cultural changes had an impact on the drug-use patterns. They used drugs as a source of revenue as well as an extension of authority and power. For example, the British prohibited toddy tapping from *kithul (Caryota urens)* but promoted such tapping from coconut *(Cocos nucifera)* and palmyra *(Borassus flabellifer)*.

As the colonial British government found liquor taxes to be a significant source of state revenue, the large-scale production of liquor, on a commercial basis, was encouraged. In the meantime, the drinking habit spread further and became a major issue in the nationalist struggle against colonial subjugation. During the early decades of the twentieth century it became such an issue that the nationalist movement and the temperance movement became synonymous (Hettige 1988).

In the eighteenth century, the British imported and distributed large quantities of opium into the island. Towards the end of the nineteenth century, the opium trade flourished in the island. In

1840, 1,500 lbs (675 kg) of opium were imported, which increased to 23,000 lbs (10,350 kg) by the year 1900. Similarly, in 1850, there was only one opium shop, but by 1907, the number of such shops had increased to 65 (Uragoda 1983). It is believed that there were approximately 60,000 – 68,000 opium users in the island in the 1920s (Ratnapala 1986). The opium was imported from India and was initially distributed amongst the Tamil labourers in the plantations. Later, opium shops were opened in other areas. More revenue was collected by auctioning the licences for these shops. The policy of the colonial government was apparently to keep the price of opium at a higher level and to discourage its consumption. With the passage of time, many who used opium for analgesic and hypnotic purposes became dependent on the drug.

Towards the end of the nineteenth century, the opium dependence in the island reached a crisis and a large section of the population protested against the commercial import of opium. As a result, its import was restricted to the Civil Medical Officer and all opium shops were closed down (Uragoda 1983).

The prohibition of the import of opium paved the way to the smuggling of opium along with other contraband from India through the Northern coastal areas and the Colombo seaport.

By the beginning of the twentieth century, opium use had created serious socio-economic and cultural implications in the island. Through various intervention programmes, the opium use was greatly reduced towards the middle of the 1970s.

Ironically, towards the late 1970s, heroin -- a purified product of opium or morphine -- entered the drug scene in the island and created an entirely new set of socio-economic implications (Mendis 1988).

The psychotropic substances or drugs used in the island could be categorized, based on their origin, as indigenous and exotic. The indigenous drugs may be extractions from plants that grow native to the island or synthetic products from such plants, the plants themselves or part thereof and exotic ones are correspondingly from plants of foreign origin. The exotic drugs are mostly smuggled into the country. However, some drugs could be considered local as well as exotic, e.g., cannabis.

Indigenous Psychotropic Substances

Alcohol. Alcohol is probably the oldest and most prevalent psychotropic substance used in the island. In his writings, Robert Knox has referred to the frequent use of alcohol in the island in 1681 (Knox 1984).

Arrack is the most popular alcoholic beverage used in Sri Lanka, followed by toddy and beer. The use of foreign liquor (e.g., whisky) has decreased during the last decades (Administration Reports of Excise – Sri Lanka). Despite prohibitions associated with culture and religions, the prevalence of alcohol use is approximately 0.5% and it is almost uniformly distributed in the island (Wijesinghe et al. 1978).

In Sri Lanka, the social, economic and health costs due to alcohol use are high. Males between 20 and 50 years of age are the most affected. The prevalence of alcohol dependence among people above 15 years of age was 44 per 100,000 in 1985 (Alcohol and Drugs 1988).

Out of one in three males admitted to medical wards had a history of alcohol-related problems. Amongst the alcohol users, nearly 23% consumed illicit liquor –– *kassippu.* Alcohol use is a major cause of road accidents, family discords, crime and violence in the island. The local brews of alcohol are distilled from fermented flower sap of coconut *(Cocos nucifera),* palmyra *(Borassus feabellifer),* kithul *(Caryota urens)* and sugarcane *(Saccharum officinarum).*

Betel – areca. Betel–chewing, especially in rural areas, is an age-old practice in Sri Lanka. The chew basically contains betel leaf (which contains the psychotropic substance nicitine), arecanut (acerolein), tobacco (nicotine) and *chunam* (lime). Its use is more common amongst rural peasants, both males and females alike. Betel-chewing by females, unlike the use of other drugs by them is socially accepted in rural areas. However, due to the social stigma attached to the habit, betel-chewing is rare amongst the educated and urban population. In addition to the psychotropic use, betel leaves are used in certain social customs such as when being offered to welcome important guests and when exchanged in cultural ceremonies.

Cannabis. Cannabis or *ganja* is the most prevalent illicit drug in Sri Lanka. It is obtained from the Indian hemp plant *(Cannabis sativa).* The dried leaves and tender stems of the plant are smoked. Its use is

more common among the persons of lower-social strata of the rural and urban population. The hemp plant grows as a wild weed in most parts of the south-eastern arid zones of the island. Its tetrahydroxycannabinol (THC) -- the psychotropic substance -- content is 8% – 9%. Cannabis is used in culinary preparations to make the meat tender and is also consumed in boiled milk -- *Subji* -- usually at weddings, etc., of the Muslim community.

Cannabis has also been used in the traditional or *ayurvedic* (indigenous) medical preparations, since ancient times. In the ancient days, the traditional village physicians exercised social control over cannabis cultivation for medicinal use, purportedly as an aphrodisiac (Ratnapala 1986). At the same time, it has also been abused. Such a practice was considered uncultured and uncivilized, and was resorted to by the lowest stratum of society, even in ancient Sri Lanka.

Even though cannabis grew in the island, its extensive use as an intoxicant was reported to have begun only after World War II. The prisoners of war and foreign soldiers deployed in Sri Lanka at that time popularized cannabis-smoking amongst the local population.

Cannabis is mostly consumed by males of 20–30 years of age. It is usually smoked with tobacco. Chronic cannabis users present themselves with an ataxic gait, reddish eyes and psychotic symptoms. Prolonged use leads to a condition known as amotivational syndrome -- lack of motivation for any activity.

Cannabis users very seldom consult physicians for dependence problems (Mendis 1988). In spite of its long period of use, unlike opium or heroin, the number of health and social problems caused by cannabis is negligible.

According to police estimates, about 100 hectares of jungle land have been cultivated with cannabis which is sold through the black market. It is also smuggled to Europe concealed in export items. It is known that Cannabis had been smuggled into Europe in quantities exceeding 1,000 kg at a time, concealed in coconut oil drums, fresh coconuts, ribbed sheet rubber, etc. (Mendis D. 1988).

Tobacco. Approximately 55% of the males above 12 years and 01% of the females in Sri Lanka are smokers. The highest prevalence of

smoking was among the males between the ages 30 and 40 years. The prevalence of smoking is less than 4% amongst females of all ages. Among the daily smokers, 90% was males and 87% females. Chewing betel along with tobacco is a major cause (30%) for oral cancer in Sri Lanka (Smoking Patterns 1989). In Sri Lanka, cigarettes are the most popular brand of tobacco. Of the smokers, 74% smoked cigarettes, 50% *beedi* -- dusted tobacco in dried tobacco leaf capsules -- and 15% cigars.

Cigarettes are produced by a sole manufacturer in Sri Lanka and these cigarettes are high in nicotine and tar content compared to those manufactured in developed countries. Their sales are supported by aggressive promotions through sponsorships and advertisements. Tobacco sales provide a large chunk of revenue to the state, as custom duties and sales taxes.

However, in 1992, cigarette sales declined by 6.5%. Most of the smokers have either decreasd or stopped smoking due to health or economic reasons. The preventive education and anti-smoking campaigns in the country have contributed to this reduction in smoking. A central bank survey on low-income groups with an average monthly income of Rs.2,500.00 indicates, of the total earnings, 04% was spent on tobacco consumption. The mean per capita expense on tobacco per month was Rs.100.00. On average, they smoked 5 units (e.g., cigarettes) a day (Wasantha 1989).

Exotic Psychotropic Substances

The psychotropic substances which are obtained from exotic plants or plant materials could be considered as exotic psychotropic substances, e.g., heroin. These substances are mostly manufactured abroad and are either imported (e.g., benzodiazepines) or smuggled (e.g., hashish) into the country. The major exotic psychotropic substances abused in Sir Lanka are hashish, heroin and opium. These are also considered as illicit drugs. Apart from the above, certain allopathic medicines, mostly psychotherapeutic or prescribed drugs, and ayurvedic medicines, are also abused. Many of these are used in combination with other drugs (e.g., heroin) or as stop-gap measures.

Hashish. Sri Lanka is used as a transit point to smuggle hashish from the Indian sub continent to the Western countries (Mendis D. 1988).

Twenty two kilos of hashish were seized in 1986. Its use is relatively minimal in the island.

Opium. is a dried latex obtained from the opium poppy plant (Papaver somniferum). However, while the plant does not grow in Sri Lanka it does so in many countries closer to Sri Lanka. The earliest reference to opium use in Sri Lanka is in the indigenous medical pharmacopoeia. The Portuguese and the Dutch imported it from India. The Dutch issued a proclamation prohibiting the trafficking of opium in 1675. This is probably the earliest published legal statute on drug use in Sri Lanka. The main concern of the statute was to make it available for medical use rather than to control its misuse.

Opium dependence was more common amongst the Muslims and the Chinese in Sri Lanka. A typical opium dependent was a married male with a mean age of 55 years (range: 28–75 years). He was reasonably well-adjusted in life, with hardly any socio-economic or health consequences (Mendis 1988).

According to a survey on a sample of opium users, 66% had initially used opium to seek relief from rheumatic pain, fever or malaria and only 34% for its euphoric effects. Of the users, 06% had used it as a substitute for alcohol. The average age of a person when he used opium for the first time was 33 years (range: 18–55 years), and the average duration of use was 22 years (range: 5–50 years). Only 06% had any criminal record. Opium was obtained from the illicit dealer by the weight of a ten-cent coin. Most used half this in 2–3 doses per day; they either dissolved it in tea or chewed it. Of them, 04% smoked it with tobacco.

Of the above sample, all were regular users. The main reasons for wanting to give up, were the stigma attached to the habit (64%) and financial reasons (43%). The main reason for having continued the habit was to keep off withdrawal symptoms (Chandrasena 1980). In 1982, some users died from the consumption of opium contaminated with arsenic (Jayasinghe et al. 1983). This made several opium dependents to switch over to heroin.

During the British era, the East India Company imported commercial quantities of opium and distributed it through the licensed opium shops in the island (Mendis 1988). As mentioned

earlier, towards the end of the nineteenth century, the opium trade flourished in the island. In 1840, 1,500 lbs (680 kg) of opium were imported. This increased to 23,000 lbs (10,432 kg) in 1900. There was only one opium shop in 1850 but the number increased to 65 in 1907 (Uragoda, 1983). It is belived that there were approximately 60,000 – 68,000 opium users in the 1920s (Ratnapala 1986).

With the passage of time, many people who used opium for hypnotic or analgesic purposes became dependents. Towards the end of the nineteenth century, opium dependence became a severe social problem. Many sections of the society agitated against the commercial import of opium.

Towards the beginning of the twentieth century, the British colonial government restricted the import of opium to the Civil Medical Officer and all the opium shops were closed down. This certainly brought down the number of opium dependents but paved the way for opium smuggling in response to the demands.

Psychotherapeutic or Prescribed Drugs

In Sri Lanka, barbiturates and benzodiazepines could be purchased on prescriptions but amphetamines are classified as dangerous drugs not available at pharmacies.

The psychotherapeutic or prescribed drug use is significantly high among the heroin users. According to the Careers Study (1990), the regularly used drugs were diazepam (04%), flunitrazepam (04%), barbiturates (03%), methadone (02%) and piriton (02%). These drugs were used as stop-gap measures for heroin -- as relief from withdrawal symptoms -- and to supplement its effect.

Reports on the abuse of cocaine, LSD, amphetamines and other drugs are relatively few. These are mostly brought in by some tourists for their personal use and are sometimes introduced to the locals. A large quantity of cocaine (09 kg) was seized in Sri Lanka in a ship dry-docked in Colombo. However, its destination was another country (Annual Report 1990).

Amongst heroin users, 10% had experimented with cocaine (Careers Study 1990). In Sri Lanka, sniffing of petrochemicals, glue or other solvents was rarely reported. Ayurvedic preparations such

as *madana modaka* and *lagium* are abused by a few. Some manufacturers even make the preparations more potent for the abusers. These sometimes include high concentrations of alcohol or cannabis.

Heroin Abuse in Sri Lanka

Heroin abuse in Sri Lanka began some time around the early 1980s. By 1983, it had reached a crisis. In 1981, 08 cases of heroin offences were reported to law enforcement agencies. Ten years later, in 1991, it increased to 8,271. The prevalence rate of heroin offenders in 1981 was 0.4 persons per million; in 1986 this increased to 269 persons per million and 1991 to 479.6 persons per million.

Despite the fact that large quantities of heroin were available relatively cheap in countries closer to Sri Lanka, it is somewhat strange that heroin did not enter the drug scene in Sri Lanka prior to the 1980s. Initially, heroin was brought in for personal consumption mostly by the 'hippie' tourists and Sri Lankans returning from foreign countries.

The heroin use was confined to areas where tourists frequented. Tourism attracted the youth in these areas who were engaged in traditional occupations such as agriculture and fishery. This changed their way of life. It not only brought additional income but also exposed them to vices like heroin use and prostitution.

It is interesting to note that opium, the raw material for heroin, had been abused in Sri Lanka for many years. In 1900, 23,000 lbs (10,350 kg) of opium were legally imported to the island to be distributed through licensed opium shops. There were 65 registered opium shops in 1907. Until the middle of the twentieth century opium had been distributed by the government medical officers to registered opium users. Towards the latter part of the 1970s, even though the number of opium users was reduced due to various intervention programmes, the underground opium trade was still in existence. The black marketeers and organized gangs of opium traffickers met most of the demand for opium (Uragoda 1983).

Within a short period, the large profits and high demand for heroin attracted the opium traffickers to smuggle it. Superior effects

of heroin made many opium users to switch over to it. In the meantime, a few opium users died from the consumption of arsenic-contamined opium in Colombo. This hastened the spread of heroin use. In addition, the involvement of Sri Lankans, mainly Tamil militant groups, in organized drug trafficking through Sri Lanka, mostly from India and Pakistan to Europe, accentuated the island as a transit point.

Certain global changes including local ones that occurred parallel to the situation, contributed to the spread of heroin use in Sri Lanka. The "Afghan War" during the latter part of the 1970s prevented land routes to the West being used by heroin smugglers. This situation forced them to find alternative routes. Sri Lanka's strategic location, being situated between the "golden triangle" and the "golden crescent" -- two major opium poppy-growing areas -- facilitated her being used as a transit point.

In the meantime, many socio-economic and political changes were occurring in the island. The economy was liberalized by relaxing import-export controls. This led to a boom in trade, transport and travel abroad. The Middle East employment opportunities and tourist arrivals increased. On the other hand the ethnic tensions and social unrest got worsened. These are some of the factors which facilitated the organized drug trafficking and easy availability of heroin in the country.

In contrast to the cannabis and opium use, the heroin epidemic took the island almost by storm. Its spread defied most of the traditional social controls. Most victims were in their prime. Thus it created many social and economic ramifications. As the heroin epidemic was not anticipated when it broke out there was little preparedness to meet the situation head on. Within a few years, heroin use reached epidemic proportions, first, spreading through the less affluent labour stratum and then infiltrating vertically to the more affluent strata of the society.

Reports indicate that the Colombo Airport and the western seacoast are being used to smuggle heroin. Apart from an abortive attempt to establish a clandestine laboratory to process heroin locally, no sophistication of the heroin trade under the cover of legitimate businesses was reported.

Objectives of the Study

The Comprehensive Multidisciplinary Outline (CMO) of Future Activities on Drugs Abuse Control, a UN document (1988), stresses the importance of undertaking studies to determine the extent of drug dependence in specific population groups, and the relationships between socio-economic and cultural factors and drug dependence. The project document of the NDDCB/UNDCP on *Prevention and Treatment of Problems Related to the Abuse of Drugs (ADA/SRL/87/495)* clearly emphasizes the need for the continuous monitoring of drug use and the routes of drug administration (i.e., modes of consumption). It also stresses the need to utilize the experience gained through community surveys in planning and implementation of outreach activities.

The research activities identified in the project document were semi-quantitative studies on the effectiveness of community interventions and ways to improve their effectiveness. One area for research is carrying out small-scale studies on the careers of drug users, focussing on the stages of initiation, passive use, and controlled and compulsive drug use in order to reverse the steps in the pathway to dependence. The project document stresses the need to carry out intervention-linked descriptive studies to explore ways aimed at harm reduction including the containment of the Human Immunodeficiency Virus (HIV) epidemic.

In light of the above, a survey by questionnaire was carried out on a sample of heroin users to study their careers of drug use. The purpose of the study was to understand the socio-demographic factors, drug use characteristics, the circumstances of initiation, the factors critical in the progression from passive use to active use, controlled and compulsive use, and family and social factors that affected drug use.

The objectives of the survey by questionnaire were as follows :

* to identify circumstances leading to the initiation of heroin use and to its repeated use.

* to identify factors critical for the transition from the passive use to active use as well as controlled to compulsive use of heroin.

* to identify past and present interactions of the heroin users with the family and the immediate social environment.

* to compare the findings of the study with the previous studies on heroin users in Sri Lanka and abroad and to monitor any changes in the pattern of drug abuse.

* to determine possible correlates of heroin use and to publish the findings for the use of policy planners and programme implementators of drug abuse control.

The research was conducted without proposing a hypothesis for testing and was based on observations.Such a method is regarded most appropriate where knowledge on the subject is scant.

Subsequent to the survey, in-depth case studies were carried out on a sub-sample of the present study. The purpose of the case studies was to construct a model to explain the drug abuse situation and to test hypotheses. It is hoped to publish the case studies in a separate document.

MATERIALS AND METHODS

THE RESEARCH METHODOLOGY of the study on the refinement of the Careers Study on Heroin Users in Sri Lanka was as follows.

Research Design. The research design of the study was a retrospective exploratory analysis on an opportunistic (non-probable) 'snow-ball' sample of heroin users. The data collection was carried out by trained field investigators using a survey by questionnaire at face-to-face interviews with heroin users. The study was carried out without proposing any hypothesis for testing. As the knowledge on the problems was scant such a method was considered appropriate.

Research locations. The data collection of the study was restricted to the districts of Colombo, Gampaha, Galle and Kandy. The known high prevalence of heroin abuse in these districts (DAMS 1991) and the proximity to the National Dangerous Drugs Control Board (NDDCB) treatment centres were the main reasons for selecting these locations.

In 1991, of the 618 reports received from the treatment facilities on heroin users, 55% was from Colombo, 16% from Galle and 10% from Kandy. According to the above, 91% of heroin users resided in the above-mentioned districts. However, it is noteworthy that due to the prevailing situation no reports were received from the North-East Province (DAMS Annual Report 1991).

Of the drug arrests, 12,518 were reported by the police in 1991. Of the above, 80% was reported from the Western Province which includes the Colombo and Gampaha Districts, 04% from the Southern Province which includes the Galle District and 02% from the Central Province which includes the Kandy District. Thus, of the total arrests, 86% was reported from the 3 provinces out of all the provinces in the island (Multi-City 1992).

Among the 9,952 drug arrests in the Western Province in 1991, 80% was for heroin. Twenty nine percent of the total 542 drug

arrests in the Southern Province, and 17% of the 209 drug arrests in the Central Province were for heroin. Thus, of heroin-related drug arrests, 42% was reported from these 3 provinces.

Of a sample of 1,685 drug arrests from the districts between May and July, 1989, 72% was reported from Colombo, 05% from Galle, 06% from Gampaha and 02% from Kandy. These districts, taken together, account for 85% of the total arrests (DAMS 1990).

Of the Sri Lankan population, 11% lives in the Colombo District, 09% in the Gampaha District, 07% in the Kandy District and 05% in the Galle District. The total population of these 4 districts put together amounts to 32% of the total population (Population Situations 1992).

The first Careers Study on Heroin Users in Sri Lanka (1988) was carried out in the districts of Colombo, Galle and Kandy. This was another reason for selecting the above locations which would enable the comparison of the present situation with the past.

Sources of data collection. The sources of data collection were of 2 types -- the community and the prison. The community sources were the treatment facilities (NDDCB and Non-Governmental Organizations), Hospitals and counselling facilities, etc. The prisons sources were persons convicted for heroin-related offences.

However, the persons interviewed at these institutions were only considered as starting points or "seeds" for the "snow-ball" sample. Hence, the number of heroin users who report to the institutions represents the "casualties" of drug use who are a marginalized group. As a result, the data collected from them may not be generalized in relation to other heroin users, i.e., validity of data. In order to get a more representative sample of the heroin users, it was decided to interview the most number of heroin users in the field (i.e., outside the institutions). Despite the stigmatization and illegality of heroin use, there was little difficulty in obtaining reliable information, once a good rapport was established with the heroin users.

Data collection. The data collection was carried out using a questionnaire. The data were collected at face-to-face interviews by 5 trained Field Investigators. Three of the Field Investigators were

university graduates in sociology and the other 2 had passed the G.C.E. (Advanced Level) Examination and had field experience in work.

The questionnaire was pre-tested by the Field Investigators. Prior to this, the Field Investigators were given an orientation on the questionnaire and the data collection procedures. Based on the pre-test, the questionnaire was revised before the data collection proper The pre-test was conducted in August 1992 and it provided the opportunity for the Field Investigators to get familiarised with the data collection procedures. Any shortcomings observed with regard to data collection were corrected. Prior to the data collection, letters of authority were given by the Chairman, NDDCB and permission was obtained from the Commissioner of Prisons to conduct interviews with the prisoners.

The data collection was supervised by the Research Officer and the Assistant Research Officers. Weekly meetings on the progress of data collection were held between the Research Officers and the Field Investigators. To enable reliable data collection, the Field Investigators were encouraged to develop a good rapport with the drug users, whenever possible. The data collection proper commenced in November, 1992.

The modus operandi of the data collection was to select the initial person to be interviewed or "seed" from a data collection source. Then, through that person, the Field Investigator would get himself introduced to a few more drug users. Again, through these persons, the Field Investigator would get introduced to still more drug users until he gets a sufficient number of users for his sample. Thus, such a sample could be called as a "snow-ball" sample. Finally, the samples of the Field Investigators were pooled together to form a single sample.

Sampling. A non-probable sample (opportunistic) of heroin users was used for the data collection. Such a sampling was considered appropriate due to the uneven distribution of heroin users in the population and the illicit nature and the stigma attached to heroin use.

However to make generalizations and to increase the external validity of results, the first person of a group to be interviewed or the "seed" was selected in a random stratified manner.

In order to do so, first, the sample was stratified by districts and the sample proportions -- number of person to be interviewed -- were determined. The known prevalence of heroin users in the respective districts as determined in the previous Career Study was used as a guideline. Second, the sample was stratified by the towns and villages and the respective sample proportions were determined. The prevalence of heroin users of the towns and villages based on the previous Careers Study was used as a guideline. Third, the sample was stratified by the source of data collection and the sample proportions for each source were determined. Wherever possible, the Field Investigators were instructed to select the first person to be interviewed ("seed") from an available list of persons (sample frame) randomly. These steps were taken to minimize the biases of the data.

Sample size. The sample size was enumerated based on the standard error of the average daily expense on heroin per person of the previous Careers Study (1990). The estimated average daily expense on heroin per day per person was Rs.111.00 (with a standard deviation of Rs.89.00). In order to estimate the average daily expense of a heroin user with an accuracy (error) of Rs.5.00, the size of the sample needed is 1,225 persons. Similarly, the sample of persons needed to estimate it with an accuracy (error) of Rs.10.00 is 306 and a sample of 136 is needed to estimate the above with an accuracy (error) of Rs.15.00.

The larger the sample, the more accurate the estimates. However, when the sample gets larger and larger, each additional increment gives a diminishing return (accuracy) to the sample. On the other hand, each addition adds more to the cost than to the accuracy. Hence, beyond a certain size, the sample becomes non-cost-effective.

Taking into account the cost-effectiveness, time and other resources, a sample size of 306 persons, at an accuracy/error of Rs.10.00, was considered optimal. Thus, it was decided to interview a sample of 306 heroin users from the Colombo, Gampaha, Galle and Kandy Districts for the study.

Questionnaire. The questionnaire was designed to collect data on socio-demographic, drug-use characteristics, health and treatment, and family and social relationships of the heroin users. The Field

Investigators were asked to make their observations and comments on the above topics. The drug use characteristics included questions on licit and illicit drug use. The heroin use was studied in detail. The various phases of the pathway to dependence were examined with reference to initiation (the first use), passive use (used only when offered free), and active use (purchased drugs for consumption) the last comprising 2 stages, namely, controlled and compulsive use.

The questionnaire mostly contained close-ended and open-close-ended questions with a single response. The Field Investigators were instructed to record the response by encircling the most appropriate response number, wherever applicable.

The section on the family relationships of the questionnaire included a matrix for the responses to be recorded. The responses were recorded by marking an "X" in the appropriate section. All responses were pre-coded.

Data analysis. All questionnaires were scrutinized for completeness and consistency prior to data analysis. The age of the respondent was checked against the date of birth for consistency of data. The Field Investigators were requested to complete any omissions or shortcomings in the data, wherever possible. The data were analyzed manually except for the responses in the family relationships. Tally tables of the responses were prepared. Based on the above, frequency tables for the variables were constructed. These tables contained data summarized by totals and percentage.

The means and standard deviations, and sample errors for the data were enumerated. Subsequently, statistical test -- chi-square, contingency tables, and analysis of vacancies (ANOVA) -- were performed. The section on family relationship was analyzed using Epi Info -- a standard computer package for the analysis of epidemiological data.

Validity and reliability. The validity of the data was ensured by pre-testing the questionnaire and the survey procedures, to make sure that all questions could be clearly understood by the Field Investigators who were given an orientation on the questionnaire and survey procedures, prior to data collection. Thus, they got an insight into the survey by participating in the pre-test. The data were

compared with already known facts on drug use in the country and others which were strongly hypothesized as drug-related (construct validity). In addition, the data collection was supervised by the Research Officer and the Assistant Research Officer.

Weekly meetings were held between these Research Officers and the Field Investigators to monitor the progress of data collection. The Field Investigators were asked to accompany the Research Officer to some of the persons interviewed to cross-check the data.

The reliability of the data was ensured by checking the logical consistency of the multiple responses and conducting repetitive interviews. A sub-sample was interviewed in-depth on intravenous drug use. For consistency, these data were compared with those of the earlier responses.

RESULTS

THE RESULTS of the data analysis of the sample findings are described under the headings socio-demographic characteristics and drug-use characteristics.

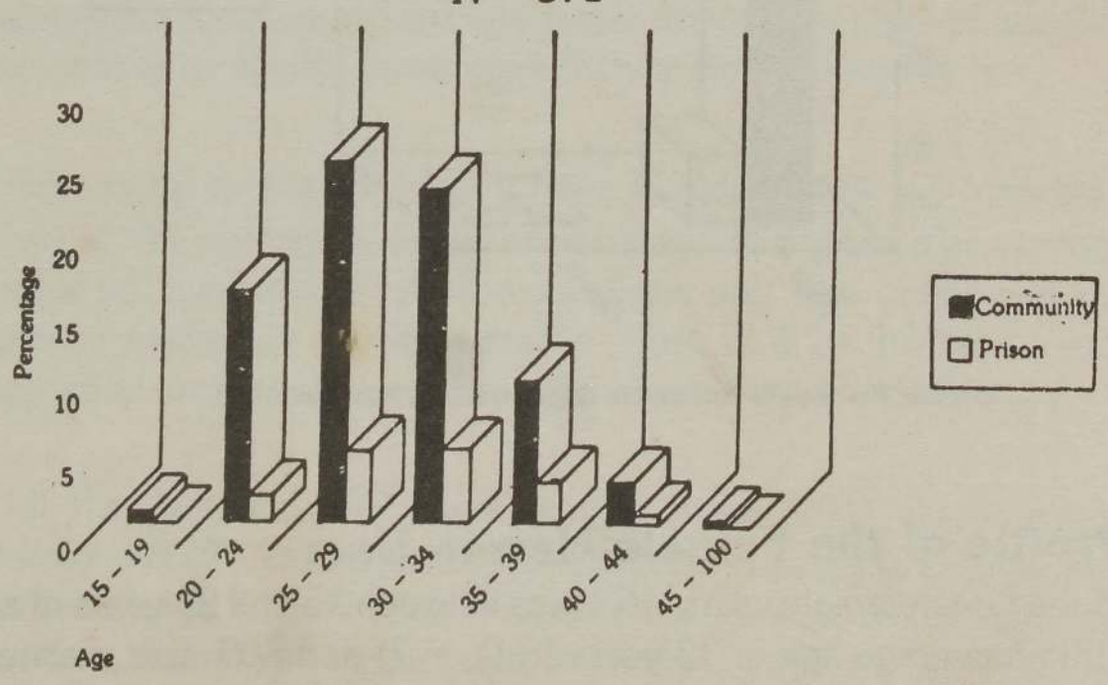
Socio–Demographic Characteristics

Of the sample of 371 heroin users, 53% was from Colombo, 19% from Galle, another 19% from Kandy and 09% from Gampaha.

Source. Of the sample, 313 (84%) were interviewed in the community and 58 (16%) in prisons..

Age. In the distribution of the sample by age, 49% was between 15 and 29 years (i.e., the major group) and 18% between 20 and 24 years (i.e., the minor group). The highest number of people were reported in the major age group. Almost 01% of the number was between 15 and 19 years. Nearly 30% between 25 and 29 years. Of the sample, 90% was below 40 years of age.

Fig – I *Heroin Users by Age Community & Prison N = 371*

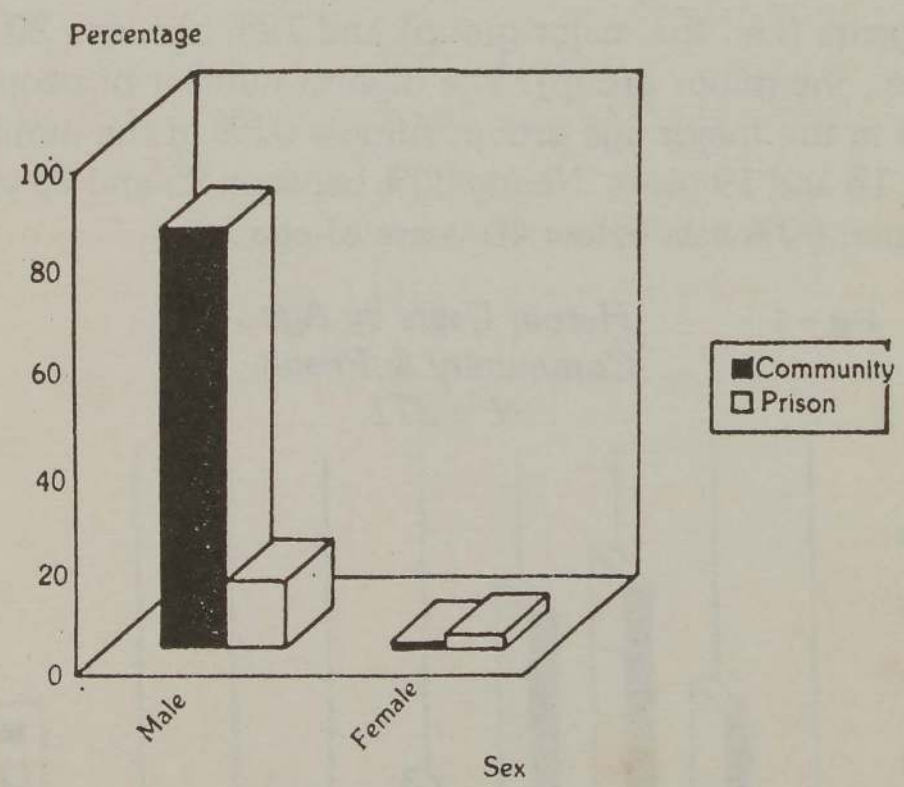


Source: Research & Publications Division, NDDCB Project. 1993

The average age of the heroin users of the sample was 31 years (S.E. = 8.5 $p < 0.05$) and 96% of the heroin users was between 20 and 45 years of age. The median age of the sample was 25 years. Of the users, the most reported from Colombo (15%) and Gampaha (03%) were between 25 and 29 years and those from Kandy (06%) and Galle (07%) were between 30 and 34 years. (Ref. Fig I)

Sex. Of the sample, 96% was male and 04% female. The male to female ratio was 24:1. Most of the females, 66%, were interviewed in the prisons. The average age of the female users was 32 years (S.E. = 1.7 $p < 0.05$) and 50% of the female sample was below 29 years. The average age of the females was slightly higher than that of the males, i.e., 31 years.

Fig – II *Heroin Users by Sex*
Community
N = 371



Source: Research & Publications Division, NDDCB Project. 1993

Profile of the Female Heroin User

Of the fifteen female users, 46% was between 15 and 29 years of age with an average age of 32 years (S.D. = 7) and 80% was married. According to ethnic distribution, 67% was Sinhalese, 13% Tamils,

and 07% each of Muslims, Malays and Burghers. The sample consisted of 53% Buddhists, 27% Christians, 13% Islam, and 07% Hindus. Residence-wise, 60% lived in urban areas and 27% in temporary dwellings. According to the number of residents with whom female heroin users lived, 60% lived with 1 to 2 persons and 13% lived alone.

According to the educational level, 60% had studied between 6 and 10 years and 13% had never been to school and 93% was literate. Employment-wise, 87% was employed. Of the users, 53% was small entrepreneurs (e.g., vegetable vendors) and 20% labourers. On average, a female user earned Rs.400.00 and spent Rs.200.00 per day.

The family relationships of the female users were significantly different from those of the males. Compared to the males fewer females lived with their families and had less family support. It is noteworthy that 66% females of the sample was interviewed in the prisons. Alcohol use amongst the fathers of the female users was higher than that of the males. Of the fathers of the female users, 33% used alcohol and of those of male users only 17% used it.

Similarly, illicit drug use among the male family members of the females was high. Of the spouses of the females, 20% was either cannabis or heroin users whereas only 07% of the fathers of the males used cannabis or heroin. More females than males had strained family relationships and fewer family members of females were willing to accept them even if they stopped heroin use.

According to the drug use of the females, 93% was cigarette smokers. The average duration of smoking was 8 years. The average number of cigarettes per person was 5 per day. Few used beedi and cigars or sniffed or chewed tobacco. Only 01% of the Sri Lankan population was female smokers (Smoking Patterns 1989).

Of the females, 27% was alcohol users, 75% drank spirits (arrack) and 25% drank illicit preparations -- *kasippu*. On average, a female drank 616 ml (S.D. = 396ml) or about 3/4 of a bottle per occasion. Amongst the females, 20% had used cannabis and, on average, 3 packets a day.

According to the year of first use of heroin, 27%, the highest, females had used it for the first time in 1983, followed by 20% in 1989. Of the above 40% had been introduced to it by their peers, and 13% by the spouses. On average, a female user had used heroin for 7 years. According to the reasons given for the first use of heroin, 47% had used it for the first time to get relief from physical and psychological discomforts (i.e., to relax), 20% due to curiosity, and another 20% due to the persuasion of the spouse or partner. According to the mode of use, while all the females had consumed it by "chasing", another 07% had tried intravenous use (IV). According to the reasons given for repeated use, during the initial days of heroin use, 53% said because they had got free heroin daily.

According to the involvement in crime or anti-social activities by the females, 80% had been arrested for various offences and 60% for drug-related offences, e.g., possession of drugs.

The health status of the females, 60% reported of physical health complications (e.g., body pains) and 20% psychological health complications. Of the female users, 60% had been treated for heroin dependence once to thrice, mostly by General Practitioners.

Prescribed (psychotherapeutic) drugs had been abused by some of the female users. The drugs commonly abused were flunitrazepam, diazepam, methadone, chlorphenieramine maleate and largactil. These drugs have been used not only as supplements to heroine but also as stop-gap measures.

In the distribution of the females by employment, 53% was small entrepreneurs (e.g., hairdressers, vegetable sellers) or self-employed (e.g., handicraft makers). On average, they had 7 years of schooling. Among the females, 97% was from urban areas. Another interesting feature was that, of the females, 40% had used heroin on their own for the first time and 13% had been introduced to it by their spouses. Of the female sample, 93% had smoked cigarettes, 27% had consumed alcohol and 20% cannabis.

The corresponding characteristics of males are discussed elsewhere in the text. More information about female heroin users has been published in a separate document.

Marital status. In the distribition of the sample by marital status after drug use, 52% was unmarried, 45% married, 02% separated and 01% divorced. In the status before heroin use, 70% was unmarried, 27% married, 01% separated and another 01% divorced. The number of marriages had increased by 66% even after heroin use. However, no significant changes were observed in the number of separations and divorces.

Table 1

Marital status of the heroin users

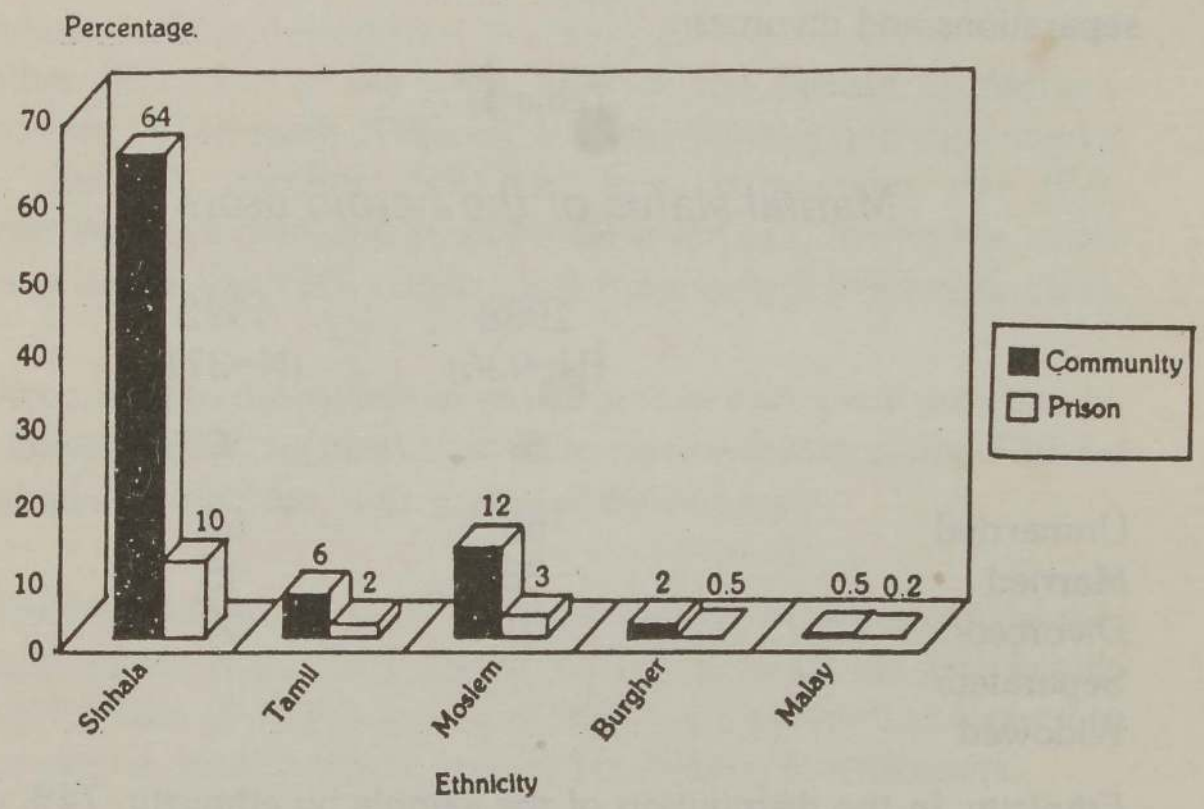
	1988 (N=936)	1992 (N=371)
	%	%
Unmarried	66	52
Married	33	45
Divorced/ Separated/ Widowed	01	03

Ethnicity. In the distribution of the sample by ethnicity, 74% was Sinhalese, 15% Muslims, 08% Tamils and 03% Burghers. The prevalence rates of the heroin users by ethnic groups -- number of heroin users per million persons -- were Sinhalese, 25; Tamils, 10; Muslims, 54; and Burghers, 99. The proportion of Muslims (15%) in the sample was higher than that of Tamils (08%). This is more than their respective ethnic proportions in the Sri Lankan population.

The prevalence of the users amongst the Burghers was the highest (99) followed by that of Muslims (54), Sinhalese (25) and Tamils (10). The distribution of the users in the sample by ethnicity was significantly different from the same distribution in the Sri Lankan population ($X^2 = 21.5$ df=03 $p < 0.05$). Hence, the sample findings cannot be extrapolated to the Sri Lankan population in terms of ethnicity.

The distribution of the users by ethnicity in the districts, too, showed considerable variations. All the users from Galle were Sinhalese. In Kandy, 23% of the users was Muslims. In Gampaha, 17% of the users was Burghers and 15% Tamils.

Fig – III *Heroin Users by Ethnicity Community & Prison N = 371*



Source: Research & Publications Division, NDDCB Project. 1993

Religion. In the distribution of the sample by religion, 69% was Buddhists, 09% Christians, 05% Hindus and 16% Islamic. The prevalence rate of the users by religion was Buddhists, 25; Christians, 31; Hindus, 08; and Islamic, 54. The prevalence of heroin users was significantly high among the Islamic. However, the distribution of the sample by religion was significantly different from that in the Sri Lankan population ($X^2 = 15.6$ df=03 $p < 0.05$). Thus, the sample findings cannot be extrapolated to the Sri Lankan population in terms of religion.

In the districts, the distribution of the users by religion showed considerable variations. In Galle, 99% of the users was Buddhists and in Kandy 35% Islamic. In Colombo, 10% of the users was Christians and in Gampaha 15% Hindus.

Area of residence. In the distribution of the sample by the area of residence, 46% lived in Municipal Council (MC) areas and 14% in

Urban Council (UC) areas. Of the users, 24% lived in Town Council (TC) areas and 14% in Village Council (VC) areas. As compared to the distribution of the Sri Lanka population by urban and rural areas -- 22% in urban areas and 78% in rural areas -- the distribution of the users was more weighted towards urban areas (Census 1981).

The highest proportion of the users from Municipal Council (MC) areas was from Kandy (57%) and the least (24%) from Gampaha. Similarly, the highest proportion of the users (20%) from the Village Council (VC) areas was from Gampaha and the least from Colombo (11%).

Type of residence. In the distribution of the sample by the type of dwelling, 63% lived in permanent dwellings, 17% in semi-permanent dwellings, 15% in temporary dwellings and 04% had no residence at all. The highest number of persons with permanent dwellings was reported from Colombo while the highest number with no dwellings was reported from Gampaha.

Table 2

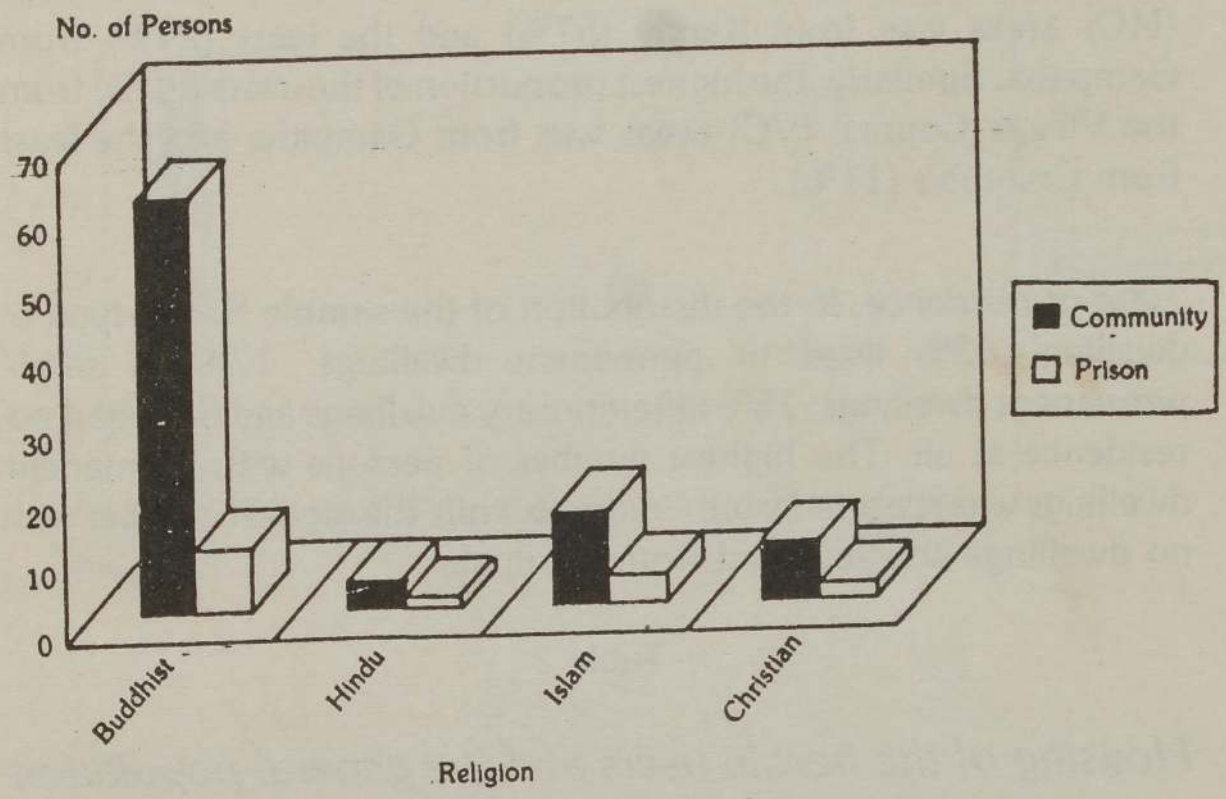
Housing of the heroin users and the general population

	1988 (N=936)	1992 (N=371)	1981 Census
Average number per house-hold			
Persons	6.2	2.9	5.2
Rooms	3.4	2.6	2.1

Number of residents. In the distribution of the sample by the number of residents per household, 76% had 1 to 2 members, 09% had 3 to 4 members, and 08% had 5 to 8 members. All the districts had almost the same distribution. The average number of persons per household was 2.9. The same statistic for the general population was 5.2 persons per household (Census 1981). Thus, the average number of residents per household amongst the users was lesser than that of the general population.

Fig – IV

Heroin Users by Religion
Community & Prison
N = 371



Source: Research & Publications Division, NDDCB Project. 1993

Number of rooms. In the distribution of the sample by the number of rooms per household, 56% had 2 to 3 rooms, 21% had only one room, 12% had 4 to 5 rooms and 04% had 6 to 11 rooms. In Kandy, 30% of the households had 4 to 5 rooms while another 21% had only one room. In all the districts, most households had 2 to 3 rooms. Of the sample, the average number of rooms was 2.6 per household while the same in the general population was 2.1 per household (Census 1981). Thus, amongst the users, the average number of rooms per household was more than that in the general population.

With whom the users lived. In the distribution of the sample by the persons with whom the users lived, 76% lived with their family, 05% with the spouse, another 05% with children and 06% with relatives. Apart from the family, 14% lived with friends and 08% alone. In Colombo, most of the users (40%) lived with their families. In Galle, 05% of the users, and in Kandy 03% lived with friends.

Literacy. In the distribution of the sample by the literacy level, 84% was literate. As compared to the 89% literacy level of the Sri Lankan population the literacy level of the users was lower (Socio-Economic Data 1992). Amongst the users, 80% was literate in Sinhala, 25% in Tamil, 21% in English and 01% in Hindi. However, among the users, 18% each in Colombo and Galle was illiterate.

Educational attainments. Of the sample, 52% had studied between Grades 6 and 10, and 24% between Grades 1 and 5. Only 12% had completed the G.C.E. Ordinary Level, and 03%, the G.C.E. Advanced Level Examinations. Among the users, 01% was university graduates and 08% had never been to school.

Of the users with G.C.E. (Ordinary Level) qualifications, 24% was reported from Gampaha. Of the users with G.C.E. (Advanced Level) qualifications, 04% was reported from Colombo. Of the users who had never been to school, 12% was reported from Gampaha. In all the districts, most users had studied between Grades 6 and 10.

Table 3

Educational level of the heroin users

	1988 (N=936)	1992 (N=371)
	%	%
No schooling	08	08
1 – 5 years	26	24
6 – 10 years	54	52
Completed G.C.E. – O/L's	09	12
Completed G.C.E. – A/L's	02	03

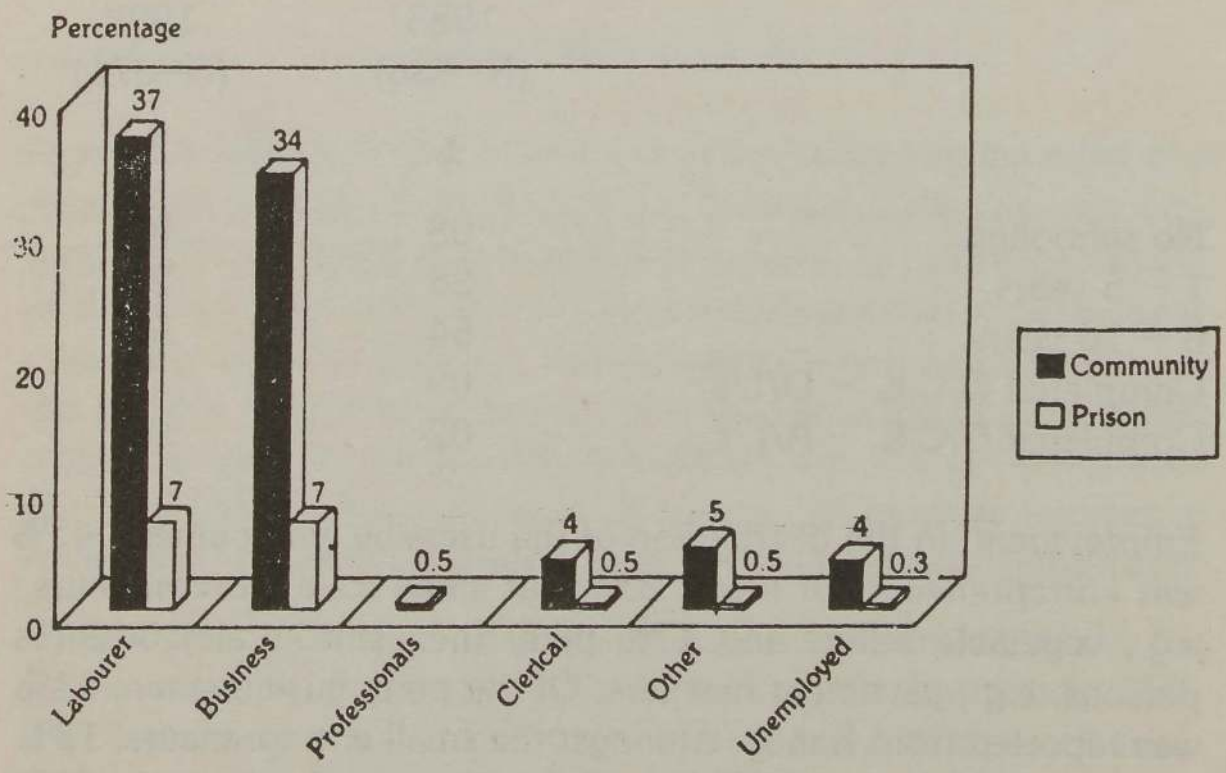
Employment. In the distribution of the users by employment, 41% was entrepreneurs. Of them, 23% was small-scale entrepreneurs, e.g., vegetable sellers and 17% petty (i.e., small-scale) business persons, e.g., pavement hawkers. Of the petty businessmen, 11% was reported from Kandy. Amongst the small entrepreneurs, 13% was from Colombo and 09% from Galle. Next to entrepreneurs, 40% of the users was labourers. Of them, 19% was unskilled (e.g., helpers) and 20% skilled (e.g., electricians). Of the labourers

reported from Colombo, 14% was skilled and 13% unskilled. Of the sample, 04% was white-collar workers (e.g., clerical staff) and 01% executives (e.g., accountants). Most of them were reported from Colombo. Of the sample, 01% was artistes reported from Colombo. The category of other employments of the sample was 04%. They were seamen, security guards, barmen, salesmen, cooks and tailors. The most number of tour guides (03%) was reported from Galle. Amongst the users, 07% was unemployed.

Income. In the distribution of the sample by monthly income, 04% earned less than Rs.999.00, 46% between Rs.1,000.00 and 5,000.00, 34% between Rs.5,001.00 and 10,000.00, 11% between Rs.10,001.00 and 20,000.00 and nearly 02% between Rs.20,001.00 and 50,000.00. The average monthly income was Rs.6,484.00 per person (S.E.=Rs.285.00 $p<0.05$), and the estimated average daily income was Rs.216.00 per person (S.E.=Rs.2.00 $p<0.05$).

Fig – V

Heroin Users by Employment
Community & Prison
N = 371



Source: Research & Publications Division, NDDCB Project. 1993

Expense. In the distributions of the sample by monthly expense, 04% spent less than Rs.999.00, 46% between Rs.1,000.00 and 5,000.00, 33% between Rs.5,001.00 and 10,000.00, 09% between Rs.10,001.00 and 20,000.00, and 03% between Rs.20,001.00 and 50,000.00. The average monthly expenses was Rs.6,516.00 per person (S.E.=Rs.271.00 $p < 0.05$) and the estimated average daily expenses was Rs.217.00 per person (S.E.=Rs.18.00 $p < 0.05$).

Family income. In the distribution of the sample by family income, 38% earned between Rs.1,000.00 and 5,000.00 per month, 39% between Rs.5,001.00 and 10,000.00, 14% between Rs. 10,001.00 and 50,000 and 01% less than Rs.999.00 per month. Amongst the users, 8% did not mention their family income. The average family income was Rs.6,900.00 per month (S.E.=Rs.581.00 $p < 0.05$) and the estimated average daily income was Rs.230.00 per family.

Family expense. In the distribution of the sample by family expense, 45% spent between Rs.1,000 and 5,000 per month, 38% between 5,001 and 10,000, 09% between 10,001 and 50,000 and 01% less than Rs.999.

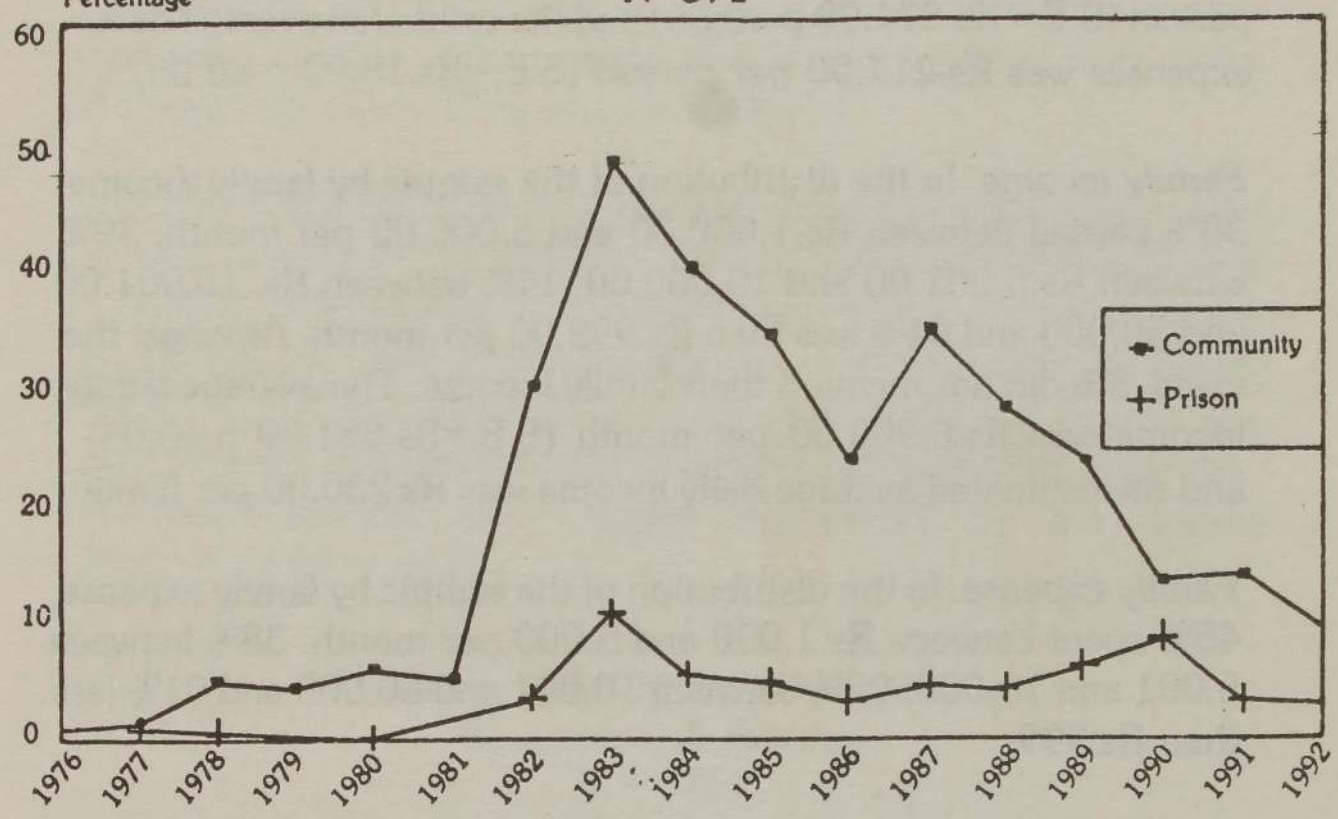
The average family expense was Rs.6,128 per month (S.E. = Rs.293, $p < 0.05$). The average daily expense was Rs.204.

Drug Use Characteristics

Data were collected on the types of drugs used, mode of use, and the patterns of drug use etc., to ascertain the extent and nature of drug use of the sample. Heroin use of the sample was studied in-depth with respect to trends and patterns of abuse. The various stages of the pathway to the dependence -- initiation, passive use, controlled and compulsive use -- were studied in detail.

Year of first use. In the distribution of the sample by the year in which heroin was used for the first time, 39% had started between 1982 and 1984. Of the users, 65 (18%) had started in 1983. Among them, 09% was from Colombo, 02% from Gampaha and 04% from Kandy. However, 03% in Galle, the majority, had started in 1984. Thus, the users in Galle had started on heroin earlier than those in the other districts. Similarly, of the sample, 47% had started on heroin prior to 1984.

Fig. VI *Heroin users by the year of first use*
Community & Prison
N=371



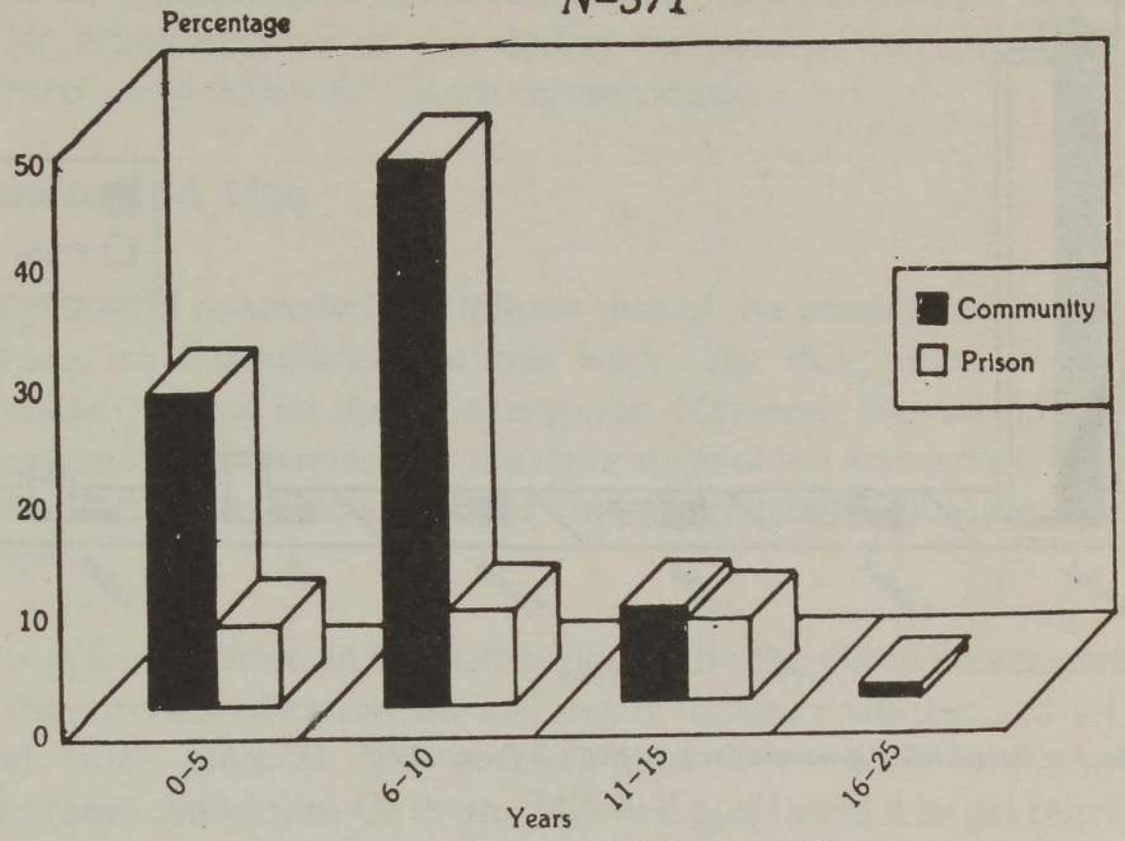
Source: Research & Publications Division, NDDCB Project, 1993

ration of use. In the distribution of the sample by the duration of heroin use, the majority, i.e., 55% had been using it for less than 10 years beginning 1982. Of the users, 34% had been using it for less than 5 years beginning 1987. Only 02% of the sample had been using heroin for more than 10 years. One per cent of the users did not respond to this question. The average duration of heroin use of the sample was 7 years -- since 1984 (S.D.=3.5 $p<0.05$).

Place of use. In the distribution of the sample by the place of heroin use for the first time, 29% had used it at a friend's room, 13% in a common place (e.g., playground), 10% at home, 09% at a town, 05% at a hotel, and another 05% at the beach.

With whom heroin was first used. In the distribution of the sample by the person(s) with whom the user had used heroin for the first time, 85% had used it with friends or peers, 07% with heroin users, and another 07% had used it alone, and only 02% with a tourist.

Fig. VII *Duration of heroin use*
Community & Prison
N=371



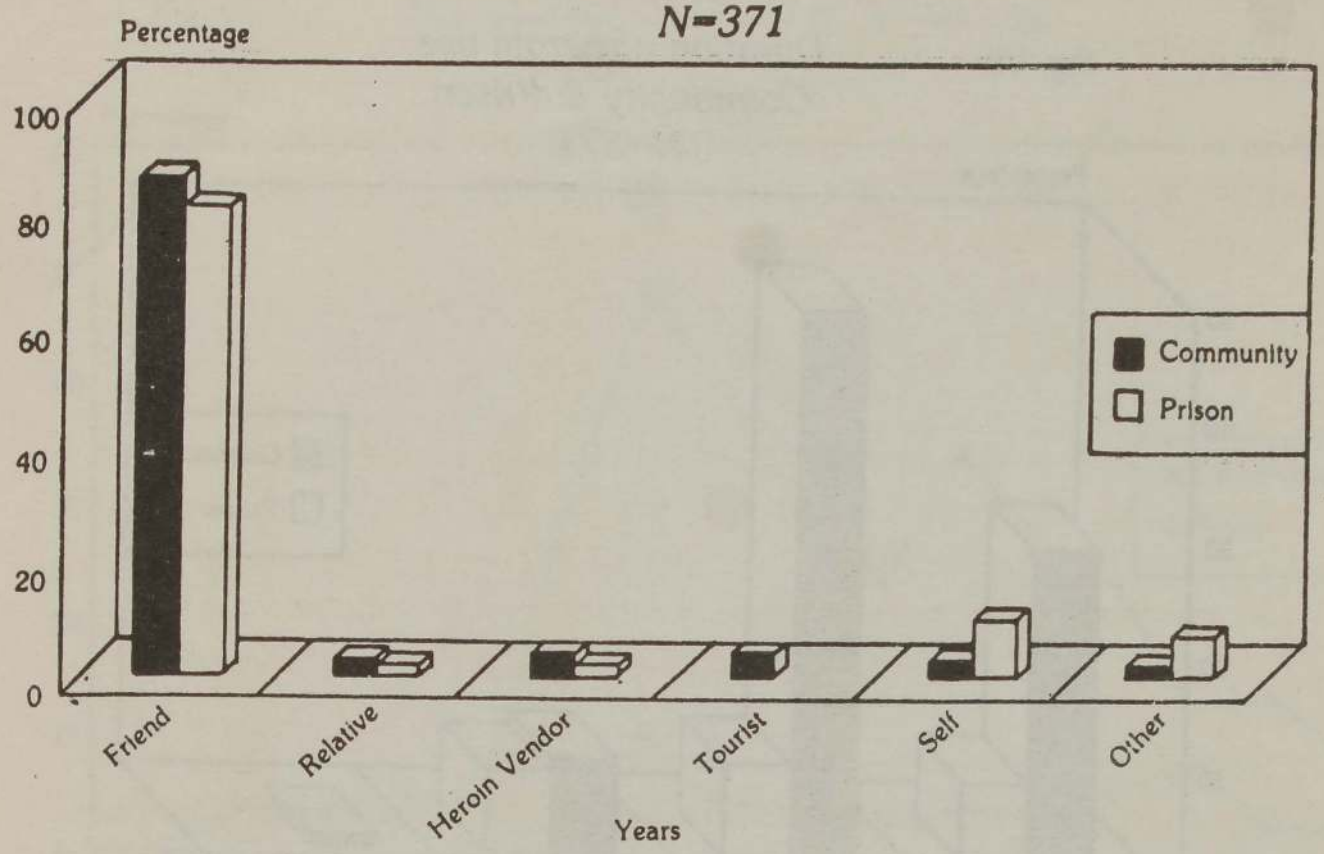
Source: Research & Publications Division, NDDCB Project, 1993

Reason for first use. In the distribution of the sample by the reason(s) for the first use of heroin, 41% had used it out of curiosity, 30% to get relief from physical discomforts, 27% due to peer pressure, 04% to get relief from psychological discomfort, 05% to be someone "special", and 03% due to some other reasons. Of the above, 34% had used it for relaxation.

Mode of use. In the distribution of the sample by the mode of heroin use for the first time, 96% had used it by "chasing the dragon" -- inhalation of the heated heroin vapour -- or smoking, 03% by intravenous use, and 01% by snuffing.

Awareness of heroin. Of the users, 71% were aware that they were consuming heroin for the first time and only 04% were not. Of the sample, 90% considered it as a psychoactive substance, and 03% did not. Of the above, 08% did not respond.

Fig. VIII *Source of introduction to first use*
Community & Prison
N=371



Source: Research & Publications Division, NDDCB Project. 1993

Passive Use

Passive drug use is an early phase of the pathway to dependence. At this stage a user would use the drug only if some one offered it and the users are often offered drugs free of charge. The results described below refer to the passive use of the users of the sample.

Source of free heroin. In the distribution of the sample by the source of free heroin, for 77% of the users it was a friend or peer, for 08% a colleague or some one known and for 02% a heroin vendor. Only for 04% of the users it was a foreigner.

Reason for accepting. In the distribution of the sample by reason for accepting heroin, 41% said it was to get relief from physical discomforts, 23% for the effects of heroin and 21% for satisfying the person who offered it. Of the sample, 12% did not respond to this question.

Frequency of free offers. In the distribution of the sample by the free offers of heroin during the passive use, for 52% of the users it had been offered daily, for 14% only for the first time or once and for 09% two to three times a week.

Mode of administration. In the distribution of the sample by mode of heroin administration or use during the passive use, 87% had "chased", and 03% had used it intravenously.

Controlled Use

The phase of controlled use follows that of the passive use to the pathway to dependence. At this stage, the drug users would purchase the drug for their consumption. However, they would use it in a controlled manner. It is the early stage of the active drug use. The results given below describe the controlled-use phase of the sample.

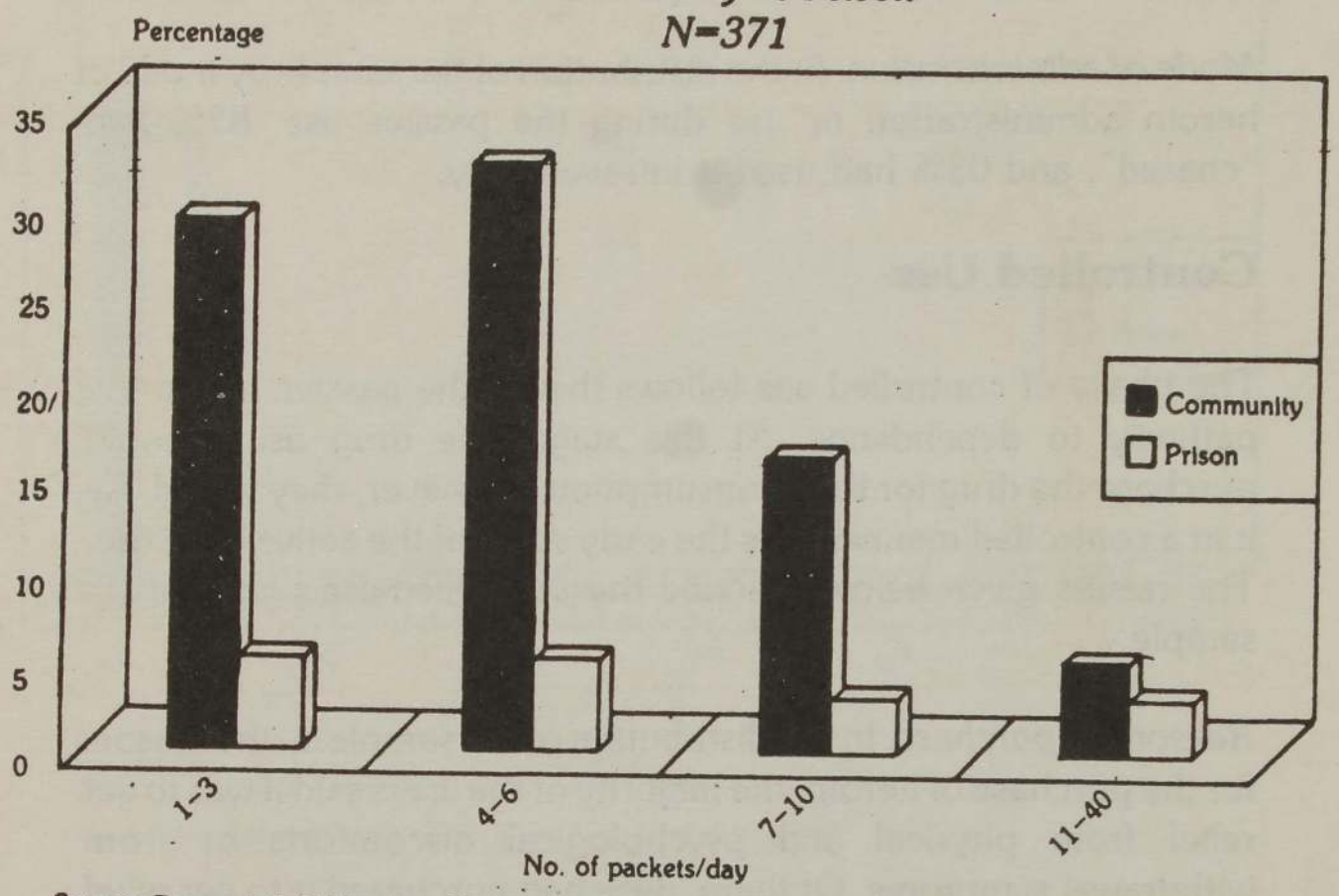
Reason for purchase. In the distribution of the sample by the reasons for the purchase of heroin, the majority of the users said it was to get relief from physical and psychological discomforts or from withdrawal symptoms. Of them, 34% had purchased it to get relief from physical and psychological withdrawal symptoms, while 30% had purchased it to get relief from psychological symptoms only. Of the users, 25% had purchased heroin for its euphoric effects and 02% for other reasons, e.g., as a cure for depression.

Source of purchase. In the distribution of the sample by source of purchase, 58% of the users, the majority, said it was from a heroin vendor in their area. Of the users, 31% had purchased it from a vendor outside their area. Only 13% had purchased it from another heroin user and 4% from the same person who gave heroin for the first time.

Number of packets. In the distribution of the sample by the number of heroin packets consumed by a user per day, 34% had used between 1 and 3 packets, and 37% between 4 and 6 packets. Of the above, almost 71% had used between 1 and 6 packets, 19% between 7 and 10 packets and 07% between 11 and 40 packets. The average number of packets consumed per day was 6 per person (S.E.=0.6 $p < 0.05$).

Fig. IX

Quantity of heroin used
Community & Prison
N=371

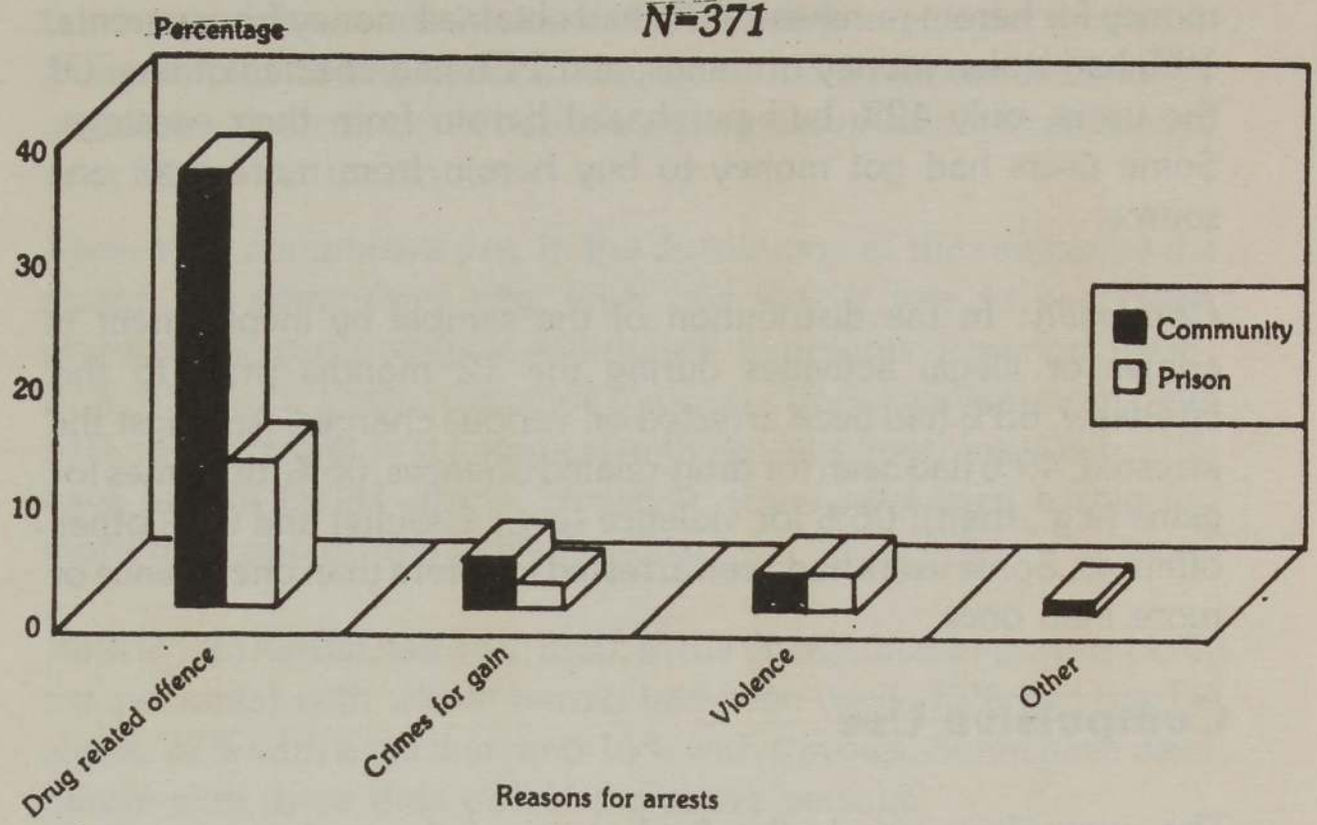


Source: Research & Publications Division, NDDCB Project, 1993

According to a heroin dealer, a gramme or 1,000 mg of heroin would be packed into approximately 100 packets, to be sold to the users. Thus, a packet would contain nearly 10 mg of substance. However, it should be noted that the exact quantity of heroin would depend on the purity of the substance.

Expenses. In the distribution of the sample by expense on heroin per person per day, 36% spent between Rs.51.00 and 100.00, 28% between Rs.101.00 and 200.00, 12% between Rs.201.00 and 300.00, and 5% between Rs.301.00 and 500.00.

Fig. X *Heroin users by reasons for arrests Community & Prison N=371*



Source: Research & Publications Division, NDDCB Project, 1993

Thus, of the users, 64% spent between Rs.51.00 and 200.00 per day, 02% between Rs.501.00 and 1,000.00 and 12% less than Rs. 50.00. The average daily expense on heroin per person was Rs.149.00 (S.E.=Rs.13.00 $p<0.05$).

The expense on heroin would depend on the price of heroin, the degree of dependence of the user and other factors. The price of a heroin packet at a given time would depend on supply, demand and other factors in the market. On the other hand, the purity of heroin in a heroin packet would be affected by the above factors.

Mode of use. In the distribution of the sample by the mode of heroin use, 98% had used it by "chasing" or smoking, 03% intravenously and 01% by snuffing. Some had more than one mode of use.

Source of money. In the distribution of the sample by the source of money for heroin purchase, 43% had obtained money from parents, 19% had stolen money or things, and 11% had cheated others. Of the users, only 42% had purchased heroin from their earnings. Some users had got money to buy heroin from more than one source.

Criminality. In the distribution of the sample by involvement in crimes or illegal activities during the 12 months prior to the interview, 63% had been arrested on various charges. Amongst the arrested, 49% had been for drug-related offences, 06% for crimes for gains (e.g., theft), 06% for violence (e.g., assaults) and 02% other offences. Some users had been arrested for more than one offence or more than once.

Compulsive Use

The compulsive use is the final stage of the pathway to drug dependence. The compulsive users have no control over their drug habit and use the drug more frequently than the passive or the controlled users. It is the latter stage of active drug use. The results given below describe the phase of compulsive use of the sample.

Year of compulsive use. This refers to the point of time when the users became compulsive users -- lost control over their drug use. In the distribution of the sample by the year of compulsive use, 20% of the users, the majority, had become compulsive users between 1984 and 1985. In Colombo, 11% of the users, the majority, had become compulsive users in the same period. The highest number next to that, 07%, had started in 1987.

In Gampaha, 01%, the highest number, had become compulsive users in 1984. In Galle, 05% of the sample, the highest number, had become compulsive users between 1982 and 1984 and 02%, the next highest, in 1989. In Kandy, 04% of the sample, the highest number, had become compulsive users between 1985 and 1986 and 03%, the next highest, between 1983 and 1984.

Of the sample, 04% had become compulsive users within 1 to 2 years of the first use, 10% within 12 months, 09% within 6 months, 05% within 3 months, and 07% within 30 days. Many of the users could not remember how long it took them to become compulsive users after the first use. However, the average duration between the first use and the compulsive use was 153 days or around 5 months (S.E.=0.42 $p < 0.05$). In other words, within 5 months of starting on heroin, a person would become a compulsive user -- lose control over his or her heroin use.

Reason for compulsive use. In the distribution of the sample by the reason for compulsive use, 44% said that it was to overcome physical and psychological withdrawal symptoms. Amongst them, 07% said that it was to overcome physical withdrawal symptoms and 31% to overcome psychological withdrawal symptoms. Only 11% have used it for its effects. However, some have used heroin for more than one of the above reasons.

With whom heroin had been used. In the distribution of the sample by the person(s) with whom heroin had been used, 73% had used it alone, 22% with a partner, and 16% with a group. Some have used heroin with more than one of the above persons.

Mode of use. In the distribution of the sample by the mode of use, during the compulsive use phase, 94% had used it by "chasing" or "chinese" or smoking and 01% intravenously.

Quantity of heroin. In the distribution of the sample by the quantity of heroin used per day, 45% had used between 1 and 3 packets, almost a third (34%) between 4 and 6 packets, 13% between 7 and 10 packets and 03% between 11 and 15 packets. The average number of packets per day was 4 per person (S.E.=0.2 $p < 0.05$).

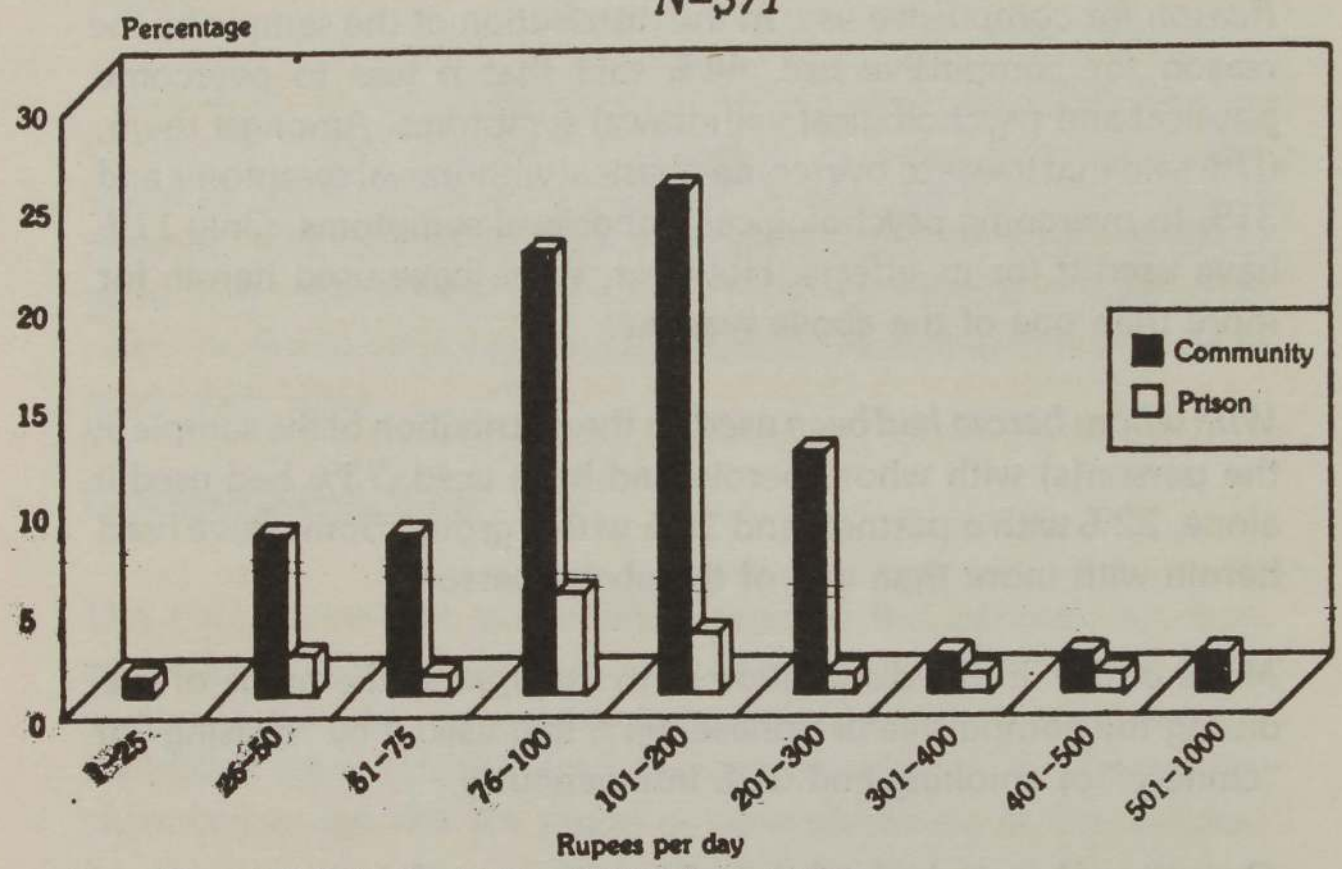
Expenses on heroin. In the distribution of the sample by the expense on heroin per day, 10% had spent less than Rs.50.00, 33% between Rs.51.00 and 100.00, 30% between Rs.101.00 and 200.00, 13% between Rs.201.00 and 300.00, and 05% between Rs.301.00 and 500.00. Only 03% had spent between Rs.501.00 and 1,000.00 and only one person spent between Rs.1,000.00 and 1,250.00 per day.

The average expense on heroin per day during the period of compulsive use was Rs.160.00 per person (S.E.=15.00 $p < 0.05$).

Intravenous heroin use. Of the 371 heroin users, only 13% had ever used heroin intravenously. Of these intravenous drug users, 06% were exeprimental users, 05% occasional users and 02% regular users.

Fig. XI

Daily expense on heroin use
Community & Prison
N=371



Source: Research & Publications Division, NDDCB Project, 1993

Profile of the Intravenous Heroin Users

All the intravenous drug users (IVDU) were males with a mean age of 29 years (S.D.=6). Of them, 48% was between the ages of 18 and 28 years and the age range was 18–50 years. According to ethnicity, 75% was Sinhalese, 16% Muslims, 06% Tamils and 01% others. The prevalence of intravenous drug use amongst the Muslims compared to that of the Tamils was high. According to religious distribution, 66% was Buddhists, 14% Christians, 16% Muslims and 04% Hindus. The prevalence of intravenous use amongst the Muslims and the Christians was high compared to that of the Hindus.

The majority (50%) had studied between 7 and 10 years, 16% had completed the G.C.E. (O.L.) Examination and another 16% had completed the G.C.E. (A.L.) Examination. According to marital status, 70% was unmarried and 26% was married. However, 02% was separated and another 02% was cohabiting after drug use.

Employment-wise, 34% was labourers, 22% entrepreneurs and 14% others (e.g. guides and brokers). Nearly a third (30%) was unemployed. According to housing, 82% lived in permanent structures and 08% in semi-permanent structures; only 10% had no permanent houses.

Crime involvement, 54% had been arrested for drug offences, (e.g. possession and selling of drugs) as compared to 08% for other crimes (e.g. theft, rape)

Treatment for heroin dependence, 92% of the users had taken treatment. The place of treatment, 72% had taken treatment at private treatment facilities and 56% from General Practitioners. However, next to private facilities, the most number of users, (12%), had taken treatment at the NDDCB treatment facilities.

The average age at first heroin use was 19 years (S.D.=6) as compared to the average age of 23 years (S.D.=6) at first intravenous use. Half the number of the users (median age) had started intravenous use before the age of 22 years. Only 08% had started with intravenous use.

Reasons for switching to intravenous use. Of the users, 48% said it was due to the increased "high", 22% to reduce cost on heroin, and 16% due to curiosity to try out a new method.

Introduction to intravenous drug use. Amongst the users, 82% said it was by another IV drug user as compared to 08% who said they had used on their own.

Frequency of use. Of the intravenous users, 06% was regular users and 02% used daily. One user (02%) had used cocaine intravenously.

Sources of needles and syringes. Of the users, 76% had obtained them from a pharmacy while 18% had obtained them from a drug user. According to data on needle-sharing, 40% of the users shared needles. Of the above, 24% had shared at times and 16% often. The

paraphernalia used for IV use is called as the "kit" or the "works"; 28% had shared their "kit" at times, and 20% often. Amongst the users, 68% had injected or "shotted" heroin with a partner and 34% by themselves. On average, two partners were "shooting" together.

Cleansing of needles and syringes. Only 26% of the users always cleaned them as compared to 38% who never cleaned. Hot water (46%) and soap water (16%) were the common cleaning agents of needles and syringes. The reason for cleaning was mostly to prevent diseases and clogging.

HIV epidemic. Of the intraveneous users, 48% believed that they had a possibility of contracting HIV due to intravenous drug use.

Nearly 62% of the users had used heroin to enhance sexual intercourse. Of the above, 90% used it very often. Almost 58% of them said they had satisfactory sexual intercourse after heroin use as compared to 32% who said they did not. Amongst the users interviewed, 74% was sexually active during the 6 months prior to the interviews and 22% was not.

Sexual preferences. The majority, 94% of the intravenous users, was heterosexual. Most were polygamous with an average of 07 partners per person.

Sexual practices. Of the users, 88% engaged in vaginal sex as compared to 14% in anal sex. Of the regular sexual partner, 30% was with the spouse, while 62% was with someone other than the spouse; 4% of the sample has had sex with an intravenous user.

Sex life. Amongst the intravenous users, 28% did have a satisfactory sex life as compared to 08% who did not after drug use. The latter did not get any satisfaction from sexual intercourse or found it difficult to engage in it.

Condom use. For protective sex, 62% said they would use it when having sex with someone other than a regular partner and 30% said they would use it even with a casual partner. This was mainly to prevent sexually transmitted diseases rather than as a contraceptive.

When asked for the possible ways of contracting AIDS (HIV), 72% named unprotected sex, 76% blood transfusion, 70% needle

sharing, and 28% from mother-to-child. Many gave more than one reponse. When asked for ways to prevent AIDS (HIV), 92% named condom use, 48%, use of sterile needles, 46%, screening of blood donors, and 26%, having personal shaving equipment.

Prostitution. Of intravenous, users 16% has had "sex for money or reward" and 04% with foreigners. Those involved in "sex-for-drugs" comprised 16% and 04% was with foreigners.

The intravenous users' knowledge on and attitude toward AIDS, the majority was aware that AIDS was caused by a virus and spread through unprotected sexual contact with an infected person.

Spread of AIDS. Asked whether AIDS could be contracted through physical contact, such as handshake, whether AIDS patients should be barred from using public utilities (e.g., toilets, telephones) and to the question "Is AIDS God's punishment for immoral persons?" The majority answered negatively to the above. When asked whether AIDS patients should be prevented from living with healthy persons, the majority responded affirmatively.

Knowledge of diseases associated with intravenous drug use. In the distribution of the sample by knowledge on diseases associated with intravenous drug use, 76% of the users was not able to name any of the diseases. Of the others, 10% associated intravenous drug use with AIDS, 5% with hepatitis B, 4% with tuberculosis, and 01% with tetanus. Some associated intravenous drug use with more than one of the above diseases.

Treatment. Data were collected to ascertain the places, type and motivation for treatment of heroin dependants. Of the sample, 67% had been treated for heroin dependence, 31% had not, and 02% did not respond to the question.

Place of treatment. Of the users treated, 56% had been treated by physicians (General Practitioners) at their private centres. Of the users, 37% had been treated at NDDCB treatment centres, 17% at General Hospitals, 07% at psychiatric units, 08% at private hospitals, 03% at NGO treatment centres and another 07% at other places. Of the sample, 03% did not respond to the question. Many persons have sought treatment from more than one place.

Table 4

Places of treatment for heroin dependence

Place	1988 (N=936) %	1992 (N=371) %
General practitioners	31	56
NDDCB Treatment centres	--	37
Government hospitals	35	24
Private hospitals	12	08
NGOO	--	03
Other	04	07

Frequency of treatment. Nearly 75% of the users had been treated for heroin dependence between 1 and 3 times, 06% between 4 and 6 times, and 02% between 7 and 12 times. Of the sample, 16% did not respond to the question. The average number of occasions of treatment was 3 per person (S.E.=0.01 $p<0.05$).

Motivation for treatment. In this category, 42% was self-motivated, 36% motivated by a family member, 19% by friends, 8% by personnel of a social service organization, and 2% by a relative. Of the sample, 04% did not respond to the question. Some persons had more than one source of motivation for treatment.

Use of multiple psychotropic substances. Data were collected to ascertain the abuse of the illicit and psychotherapeutic substances (prescribed drugs). The abuse was studied under the following headings: experimental use, occasional use, controlled use and compulsive use. These stages were categorized according to the users' perception. Of the sample, 247 (67%) responded.

Experimental use. The use of the above substances, at least once, or in an irregular manner was considered as an experimental use. Of the sample, 34% had experimentally used opium, 32% had used hashish, and 09% cocaine. Of the above, 3% had used "crack", 06% had used lysergic acid diethylamide (LSD), 02% "ICE" and 01% "Kerala" ganja.

Of the psychotropic or prescribed drugs, 28% had experimentally used methadone, 26% diazepam and 23% flunitrazepam (Rohypnol).

Other psychotropic drugs, 17% had used chlorpheniramine maleate (Piriton), another 17% largactil, 14% phenobarbitone, 11% pethidine, and 09% librium.

Occasional use. The less-frequent abuse of illicit psychotropic substances, as stopgap measures or to supplement the effects of heroin, could be considered as an occasional use.

Of the sample, 13% had occasionally used hashish, 10% opium, 03% cocaine and 01% "crack". Of the psychotropic drugs, 04% had used chlorpheniramine maleate (Piriton). Of the above, 02% each had used amphetamines, pethidine and librium, and 01% codeine.

Regular use. The regular abuse of psychotropic substances was studied under controlled use and compulsive use.

Controlled use. In the sample of those who had used psychoactive substances in a controlled manner, 31% had used opium, 28% hashish, 06% LSD, and 06% cocaine. Of the above, 04% had used "crack" and 02% "ICE"

Of the psychotropic drugs, 42% had used diazepam in a controlled manner, 33% had used flunitrazepam (Rohypnol), 19% phenobarbitone and 17% methadone. Of the above, 14% had used Piriton, 06% amphetamines, another 06% largactil, 05% librium and 03% codeine.

Compulsive use. Of those who used illicit psychotropic substances, 05% had used opium in a compulsive manner and the highest number was reported from Colombo.

Of the psychotherapeutic drugs, 25% had used diazepam in a compulsive manner, 12% flunitrazepam (Rohypnol), 09% phenobarbitone and 07% chlorphenieramine maleate (Piriton). Of the above, 06% had used methadone, 05% largactil, 04% librium or pethidine and 02% amphetamines.

Table 5

Abuse of prescription drugs by heroin users

	1988 (N=936)	1992 (N=247)
	%	%
Diazepam	04	25
Flunitrazepam	04	12
Barbiturates	03	09
Chlorpheniramine maleate	02	07
Largactil	02	05
Methadone	02	06

DISCUSSION

THE DATA COLLECTION of the study had to be confined to the districts of Colombo, Gampaha, Galle and Kandy due to time and resources limitations. The previous Careers Study was carried out only in Colombo, Galle and Kandy Districts. Hence, the survey was repeated in these districts. Gampaha District was included for the survey as there is a known high prevalence of heroin use there and as it is adjoining the Colombo District. Furthermore, the activities of the NDDCB Project are concentrated mostly in these districts.

Some other districts with a known high prevalence of heroin use such as Ratnapura and Kurunegala were not included for the survey due to the limitations mentioned above. Due to the prevailing situation, it was not possible to get any reliable information on drug abuse or to conduct data collection in the Northern and Eastern areas. Hence, the survey result would be more applicable to the Southern and Western areas of the country.

The drug users reported to the treatment facilities and the law enforcement agencies represented the "casualties" of drug use or a marginal group of them. Thus, it was decided to include the most number of drug users for the survey from the community. Of the sample interviewed, 84% was from the community and 16% from the prisons.

This was 09% more than the persons interviewed from the community in the previous Careers Study. Other studies conducted on heroin users in Sri Lanka have been mostly on persons who came for treatment for heroin dependence at government hospitals (Mendis 1985; NDDCB 1986)

In a research of this nature it would be difficult to ensure participation of drug users among the higher social and economic strata of the society, due to the social stigma and the illegality associated with drug abuse.

Thus, steps were taken to ensure the participation of heroin users of all walks of life in the present study as this would provide different dimensions of heroin use in the society.

In order to ensure more reliable data, the questionnaire and the survey procedures were pre-tested. The field investigators were trained on data collection and they were closely supervised. However, it should be noted that exaggeration, distortion and forgetting of information on the part of the users are intrinsic limitations of a questionnaire survey.

As in the previous study, in this study, too, statistical confidence intervals (99% and 95%) were computed. The data were compared with national statistics, whenever it was found possible. In addition, statistical tests -- Chi-square and contingency tables -- were performed to compare the data with those of previous studies.

Even though the sample of the present study (371 persons) was smaller than that in the previous study (936 persons) there is no significant difference in the distribution of heroin users by the source, i.e., community or prison (X^2=3.01 df=1 $p<0.05$).

Socio-Demographic Characteristics

The socio-demographic characteristics of the heroin users of the study are discussed in the following sections.

Age. The majority of the heroin users in the present study were youth, 49% of them between 15 to 29 years of age and 90% less than 40 years with an average of 31 years. In the previous Careers Study (1988) too, of the users 92% was between 16 and 30 years of age. The average age was 26 years and the age ranged from 17 to 63 years.

Comparison of the previous study (1990) with the present study (1992) suggests that most of the users of the previous study had continued the habit. The difference in the average ages of the samples corresponds to the time interval between the two surveys, i.e., 31=26+5 years.

Of the sample of the present study, 22% was above 35 years of age whereas in some previous studies (Mendis 1985 and NDDCB

1987) no persons of that age or older had been reported. This supports the view that the same users who had started the habit around 1983 had continued it and had grown older. However, it is noteworthy that 38% of the sample constituted much younger persons who had started the habit after 1987.

As in many Asian countries, in Sri Lanka too, most drug users are in their prime ages or youth (Abarro 1988).

Sex. Heroin users in Sri Lanka were predominantly males, the male to female ratio being 24:1, whereas it was 32:1 in the previous Careeers Study (1990). In the general population, the ratio is almost 1:1. Even though the ratio has decreased compared to the previous study, the difference was not significant ($X^2=2$ df=1 $p<0.05$).

Profile of the Female User

Of the 15 female users studied, 10 (66%) were from the prisons. Hence, the findings about the females would be more applicable for specific female groups in the districts where the survey was carried out. Amongst the females, 46% was between 15 and 29 years of age, with a mean age of 32 years. Even though the females were young they were slightly older than their male counterparts, i.e., 31 years. The literacy rate of the females was 93% whereas it was 84% for the males. Thus, the females were more literate than the males.

On average, a female user spent approximately Rs.250.00 a day on heroin and consumed 6 heroin packets (approximately 60 mg), whereas a male spent approximately Rs.150.00 a day and consumed 4 packets (approximately 40 mg). Among the females too, "chasing the dragon" was the most common method of use. Most females got money for heroin from their spouses or partners.

Many studies on narcotic addiction and sex differences had been conducted in foreign countries with the aim of comparing male and female characteristics of drug use. Studies by Anglin et al. (1987), Hser et al. (1987), and Westermeyer (1988) are a few of the important ones. These studies reported younger age, unemployment and living with many partners as significant characteristics amongst women drug users. All except Westermeyer identified influence of the spouse as a significant factor in the women users. However, Westermeyer could not find any such differences amongst the male and female users in Laos.

Anglin et al. proposed the hypothesis that family problems were the major reason for the initiation of females to drug use whereas it was curiosity for males. The results of the previous Careers Study also supported these views. Of the females, 20% was either divorced or widowed at the onset of drug use.

Of the female users, 80% was married and this was almost double the number of the males. It is noteworthy that 10% of the female users had been introduced to heroin by their spouses. Rosenbaum is of the view that after introduction to heroin, sustained usage is indicative of the traditional sex role expectation -- the role expected to be played in the society due to the gender difference.

Rosenbaum (1981) pointed out that in a patriarchical or male-dominant society, a woman is expected to become integrated to the society through identification with one man, usually through marriage. If a man is an addict, the woman's social role dictates that she too, shares that activity. It was found that after initiation, women become addicted to heroin faster than men. Of the women, 47% became addicted within 3 months after the first use.

Among the female users, 93% was tobacco smokers whereas it was 01% of the general population. Westermeyer, based on the studies in Laos, is of the view that sex-linked social traditions (e.g., women sharing betel-areca at a work break and men smoking together) were also powerful determinants of exposure to psychoactive substances. Women may have shown a group preference for stimulants while the men may have shown it for sedatives.

If the latter is a valid observation, sex-linked work responsibility may be a casual factor in the initiation of drug use (Westermeyer 1988). It would be useful to study the degree of exposure of the females to drugs and their work as well as social traditions.

Marital status. Of the users 52%, the majority, was unmarried. It is noteworthy that 70% had been unmarried even before heroin use. Of the marriages, 66% had taken place after initiation to the drug use. At the same time, the number of separations too had increased after heroin use.

Comparison of the unmarried of the general population with the drug user population in the age group of 15 to 40 years showed that

there were more unmarried persons than married persons amongst the heroin users. The number of divorces (03%) and separations (01%) amongst the heroin users was also significantly higher than that of the general population.

The distribution of the sample by the marital status of people between 15 and 40 years of age when compared to that of the general population between the same ages was significantly different (X^2=24.6 df=4 $p<0.05$). However, there was no such significant difference when compared with the previous Careers Study (X^2=2.67 df=03 $p<0.05$).

Anglin's studies in Chicano and Anglo American communities, suggest the view that, more often marriages elude drug addicts or that they end in divorces (Anglin 1988). Findings of the study do support his view.

Ethnicity. No significant difference was observed in the ethnic distributions between the samples of the present and the previous studies (X^2=1.08 df=03 $p<0.05$). However, the distribution of the sample when compared to the general population is significantly different (X^2=21.5 df=03 $p<0.05$). Hence, it should be noted that the findings of the sample cannot be extrapolated to the general population in terms of ethnicity.

Among the researchers on the relationship between ethnicity and narcotic use in the United States, there is a general consensus that ethnic differences do exist among narcotic users. However, there is no agreement on what those differences are, or what those significant differences may be (Anglin 1988). Due to the exploratory nature of the present study, no conclusions are possible on ethnic differences in the drug use.

Literacy. Heroin users were as literate as the general population, the figures being 84% and 89%, respectively. No significant difference was observed in the literacy level between the two groups (X^2=2.25 df=01 $p<0.05$). The literacy level of the heroin users of the present study when compared to that of the previous study, showed no significant difference (X^2=0.26 df=01 $p<0.05$). The literacy level of the female users was as high as that of the general population (X^2=1.62 df=01 $p<0.05$). A significant relationship exists between the sexes and the literacy level of the heroin users (X^2=4.01 df=01 $p<0.05$).

The female heroin users (93%) were more literate than the males (84%). The high literacy level of the heroin users reflects the high literacy level of the general population. This aspect is conducive to better preventive educational programmes.

Employment. Of the sample, 41% was small-scale entrepreneurs, 39% labourers, 04% "white collar" workers and, of them, 01%, executives. Of the users, 01% was artistes and 03% employed in the tourist industry. However, 07% was unemployed. The average daily income of a user was Rs.217.00. In the previous study, too, 50% was small-scale entrepreneurs (Careers Study 1990).

A considerable number of the users were employed persons with a significant income and skills. A heroin user spent, on an average, Rs.150.00 per day on it. This not only affects the income but also affects their productivity. Apart from the economic cost, the above causes negative health and social ramifications in the families as well as in the society.

Area of residence. The majority of heroin users lived in urban areas. However, only 22% of the Sri Lankan population is urban (Census 1981). Hence, it could be said that heroin abuse affects the urban areas more than the rural areas. It is one of the main reasons for poverty in the urban slums and shanty areas and is an impediment to social development. It affects the socio-economic and socio-cultural aspects in the areas.

According to a study on drug use amongst secondary school students in Colombia, the use of all psychotropic drugs was high among students from urban areas than among those from rural areas. In the urban areas, access to psychoactive substances was easier and the students abided by the family standards of these areas (Drug Dependence 1979). It is possible to draw a parallel to similar situations in urban slum areas in Sri Lanka too.

Housing. The housing facilities of the users were better than those of the general population. The dwellings of the heroin users had more rooms than those of the general population (t05, 342=58). A lesser average number of persons per room (i.e., 1.1 persons per household) lived in the dwellings of the users than in those of the general population (i.e., 2.4 persons per household). Hence, it

could be considered that the users lived in less-crowded dwellings compared to the general population.

The average number of residents per household, as compared to the previous study, i.e., 6.1 persons per household was lesser among the users of the present study, i.e, 2.9 persons per household. The average number of persons per room of the present study (i.e., 1.1 persons) was lesser than the number in the previous study (Careers Study 1990).

The average number of rooms per household, compared to the previous study, too, was less in the present study. However, no significant difference in the type of the structure of residence of the present and past studies was observed (X^2=0.31 df=03 $p<0.05$).

Hence, it could be concluded that the users of the present study when compared to those of the previous one, live in houses with more rooms with a lesser number of residents. A larger living area is an indicator of a better standard of living. The findings suggest that the heroin users come from a higher socio-economic stratum than the poor of the society.

Family relationships. In the present study the majority of the heroin users lived with their families. They were supported by their families, mostly by mothers and other female family members. Of the above, more fathers were dead than mothers. Of the sample, 03% lived outside the family and only 01% with a friend. Despite the drug use, few families had abandoned them altogether. Many family members were willing to assist and support the users if they stopped the heroin use.

The majority of the female users were interviewed in prisons. However, they said that they had little support from their families and would not be accepted by them even if they stopped using the drugs. It appears that the family relationships of the females were more strained than those of the males.

The family relationships of the sample reflect the close family bonds which exist in the Sri Lankan society. It also indicates stereotype sex-role expectations. Female drug use was viewed differently from male drug use.

Findings of a study on drug dependence among students in Colombia indicate that the incidence of consumption of psychoactive substances was lower amongst students who lived with both parents. It might be due to better family cohesion and greater opportunities to identify with paternal standards.

The proportion with "loving" fathers was more amongst the non-drug users than among the high-consumption users. This could be related to the young person's search for values, his constant clash with the established values and the parent-child communication gap due to inadequate understanding of the problems of adolescence or the young persons's rejection of every thing which seems to savour of authority or establishment. The high-consumption users had more conflicts with the parents than the non-users (Drug Dependence 1976).

Tobacco and alcohol use among the family members of the present sample is an important characteristic. Of the males, 50% was tobacco smokers -- 30% brothers, 20% fathers; 45% was alcohol users -- 25% brothers and 20% fathers.

Of the fathers of female users, 33% was alcohol users whereas the corresponding figures for male users was only 17%. Thus, the alcohol use of the fathers of the former seems to be double that of the latter.

Studies on alcoholism have suggested that parental alcohol abuse has a great influence on the likelihood of subsequent development of alcoholism in the offsprings (Swinson 1980). It would be useful to study whether the tobacco and alcohol use of the parents has any effect on the offsprings.

Regarding the use of illicit drugs among the family members, 04% of the brothers of male users used cannabis and 05% heroin. Of the fathers, 01% was either cannabis users or heroin users.

Of the female sample, 20% husbands was either cannabis users or heroin users. Of the fathers, 07% was cannabis users. As compared to husbands, among the wives only 01% was either cannabis users or heroin users. Thus, the licit and illicit drug use among the family members of the females were more than those of the males.

The above suggests the view of Anglin (1987) that in accordance with traditional sex role expectations, addicted females tended to live with the traditional spouses or they were supported by the spouses or common-law partners, who were already apt to be daily narcotic users.

The major reason for heroin use by females appears to be the decisive influence of the spouse or the partner. Many of these men are addicts or drug dealers at the time the women become addicted. It is unknown whether this is because deviant women choose deviant partners or addicted partners induce or encourage the women with whom they get involved.

The involvement in anti-social activity by the male family members of the intravenous drug users was more than among the non-intravenous drug users and female users.

Drug Use Characteristics

Duration of use. The history of heroin use in Sri Lanka is almost a decade old. The mean duration of heroin use was 07 years in 1992. It was 4.3 years in 1988 (Careers Study 1990). The mean age of a heroin user was 31 years in 1992 and 26 in 1988. Of the users, 47% had used heroin for the first time before 1984 -- prior to the establishment of the NDDCB. Of them, 31% had started it in 1983. On the other hand, of the sample, only 25% had used it for the first time after 1988, after the establishment of the UN assisted NDDCB Project.

It appears that the governmental and non-governmental drug intervention programmes have been successful in reducing the spread of heroin abuse in the country at least to a considerable extent. The assistance and guidance provided by the international organisations -- UNDFAC, UNDP and WHO -- in this endeavour are highly laudable.

Year of initiation. The use of heroin for the first time in the majority of the sample was in 1983, followed by 1987. It is noteworthy that both the years were politically as well as socially unsettled periods. Hence, it is worthwhile to probe whether there is any association between the two factors.

Reason for initiation. Curiosity was the most important reason for the initiation to heroin use (41%), followed by a need for relief from physical discomfort (30%) and peer influence. Of the persons, 85% had used it for the first time with friends or peers. Only 02% had been initiated by foreign tourists.

This suggests that the curiosity, the need to get relief from physical discomfort or to relax, and the peer influence affect the initiation to drug use much more than the company of tourists.

Studies conducted on secondary school students in Colombia revealed that curiosity was the main reason for using drugs for the first time; second comes the desire to get relief from pain or to relax; and third to be sociable (Drug Dependence 1976). The findings of the present study support this view. The first reason lies at the root of the drug use "fashion", since curiosity is in itself a characteristic of an experimenter, who wishes to explore the world he shares with his friends. It is one of the typical factors during the development of adolescents.

The second and the third reasons reflect the desire for escapism or for the release from the constraints imposed on the user by the environment or by his personality. They reveal an egocentric attitude towards the social environment.

Anglin, based on the studies on Spanish and Anglo-American drug users, reported that the overwhelming majority of addicts had said curiosity was the main reason for the first-time use of narcotics. Next was the acceptance by the peers. Only a small proportion, except for Spanish females, gave solving problems, or relief from pain, or their spouse or partner as the main reason for the initiation to drug use..

Anglin (1988) has reported that the vast majority had received their first narcotics as a gift, but for males the sources for the first use were different. They were most likely to have purchased or obtained it through other means, e.g., by stealing them.

Membership of user groups appears to be strongly conducive to the use of psychoactive substances. One explanation for this is a well-known phenomenon of adolescence -- namely the need for identification, which makes the young persons to be more vulnerable to group pressure (Drug Dependence 1976).

Tobacco use amongst heroin users was high when compared to that of the general population above 12 years of age. Of the sample, 100% of the males smoked compared to the 55% males of the general population. Amongst the female sample, 93% was tobacco users, which figure is 01% or less in the general population.

Cigarettes were the most popular brand of tobacco amongst the heroin users. It was more commonly used among the users than in the general population (X^2=19.66 df=2 $p<0.05$). However, the mean number of smoking units (e.g., cigarettes) per day, i.e., quantity smoked by the users and the others was the same, i.e., 12 units per day.

Mode of heroin use. The findings suggests that, of the heroin users, 96% was "chasing the dragon" or "chinese" -- inhalation of the fume of heroin heated on a tinfoil -- 03% was intravenous (IV) users and 01% sniffed it. Even though "chinese" is still the most common method, the intravenous use had increased considerably between 1988 and 1992.

The current trend differs from that prior to 1988. In the present sample, 42 out of 371 persons reported were intravenous users. It was only 03 out of 936 persons in the previous Careers Study sample (X^2=4.09 df=01 $p<0.05$). Of the above, 18% had used intravenous heroin at least once, 06% had experimented, 04% had used it occasionally and 03% had become regular users. The number of regular intravenous users has increased twofold from 1988 to 1992.

Intravenous drug use. Of the sample, 03% was regular intravenous drug users. Most of them were from Colombo. Throughout their drug careers they had been intravenous drug users (IVDU). One reason for the increase of intravenous drug users is the price increases of heroin during the last five years. In response to high price, the quantity of heroin in a packet and the purity of the contents had decreased. This has caused more and more heroin users to resort to intravenous use. According to an experience of a regular intravenous user, he would manage with a quarter of the quantity of heroin that is needed for "chinese" per day, if he injected the drug intravenously.

Rosenbaum had observed two basic types of heroin use for women users after initiation: intermittent use ("chipping") and sustained or

persistent use. Most women had "chipped" for a long time before becoming daily users. Heavy use by women was often precipitated due to personal or family problems. Rosenbaum (1979) had pointed out that key variables in determining drug use patterns were the easy availability of the drug or living with a person dealing with them. Studying the patterns of use of local heroin users would facilitate devising of more suitable intervention programmes.

Intravenous drug use was more prevalent amongst young unmarried males, mostly among labourers and entrepreneurs. Of the intravenous users, 75% had been involved in anti-social or criminal activities and these were mostly drug-related offences. The prevalence of intravenous use was most amongst the Muslims and the Christians in the sample and least amongst the Hindus. The majority of the users lived in permanent houses.

Nearly, 50% of intravenous users had started on heroin in their "teen" ages and 10% had used it intravenously even for the first time. According to the reason(s) given for intravenous use, 75% had done so to have an increased "kick" at a lesser cost. Most users had come to know about intravenous use through another intravenous user. Regular intravenous users were rare: 02% using the drug daily and 16% using it once a month.

Needle sharing was considerably high among intravenous users. Of the users, 40% had shared needles and syringes with others. Generally, they injected heroin along with a partner. Hot water or soap water was often used to clean their needles and syringes. However, only 50% of intravenous users cleaned them to prevent diseases. The same number of intravenous users considered they could contract the Human Immunodeficiency Virus (HIV) through improper needle use.

The majority (94%) of the intravenous users were heterosexuals while 04% was bi-sexual and 02% homosexual. Promiscuity was high: on average, a user has had sex with 07 partners. Only a third has had sexual relationship only with their spouses. Nearly, 66% had used heroin to enhance their sexual intercourse. Many reported sex problems (e.g., premature ejaculation) without it. Of the intravenous users, 16% has had "sex for money/reward or drugs" and 04% with foreigners. Some had engaged in prostitution to support their drug habit.

Most engage in vaginal sex, while a quarter of them had engaged in anal sex, a high-risk factor for the spread of HIV.

It is noteworthy that condom use is high amongst the intravenous users. Of the users, 66% had used condoms while having sex with some one other than a regular sexual partner and 33% even with a casual partner. This could be attributed to the easy availability of condoms and its ready acceptance by the Sri Lankan population. The main reason for using it was to prevent Sexually Transmitted Diseases (STD) rather than for contraception. Thus, the use of condoms should be encouraged as a preventive measure for harm reduction of drug use and the spread of the HIV epidemic.

The intravenous drug users had a fairly accurate knowledge on AIDS/HIV epidemic. Of the users, 90% was aware that HIV (AIDS) does not spread through non-sexual physical contact (e.g., handshake) but that it could spread through unprotective penetrative sex, and 50% was aware that HIV could reduce the body's ability to fight diseases. Only, 10% thought that AIDS could spread through mosquitoes. Such accurate knowledge on HIV (AIDS) could be attributed to the preventive education campaign on AIDS carried out on the electronic and print media in the recent past.

The knowledge of the intravenous users on HIV (AIDS) contributes towards a positive attitude which would be conducive to intervention programmes. Of the users, 58% considered that AIDS patients should not be barred from using public utilities, and 50% considered that AIDS patients should not be separated from the healthy population and 40% disagreed that AIDS is amoral, i.e., that AIDS is not a god-given punishment. Such positive attitudes could be attributed to better knowledge on the HIV (AIDS) epidemic.

Even though the number of regular intravenous drug users is much less, its implications to public health, especially to the HIV epidemic, is significant. During the last 5 years (i.e., 1988 to 1992) intravenous heroin use had increased to 12% from less than 01%. Thus, intravenous drug use has an epidemic potential. Hence, there is a need for a clear-cut policy and a programme for the prevention of the spread of that epidemic. It should be a cornerstone of any drug abuse prevention and control programme.

Treatment. Amongst the heroin users, 67% had sought treatment for heroin dependence at least once. The places of treatment for more than 50% were the dispensaries of the General Practitioners and at private treatment facilities. Nearly 33% was treated at the NDDCB treatment centres, 17% at government hospitals and 07% at psychiatric hospitals. Another, 10% was treated at NGO treatment facilities.

Since 1988, the trend in the treatment has changed. While more persons sought treatment at the private treatment facilities, the number seeking treatment from government hospitals and psychiatric hospitals has decreased. Of the government facilities, more persons sought treatment from NDDCB centres and the number has steadily increased and it accounts for a third of the persons treated. Thus, the findings suggest that the establishment of NDDCB treatment centres has reduced the burden of treating heroin dependents at the government and psychiatric hospitals.

This has also facilitated to "de-medicalize" the drug treatment modalities. Prior to this, the most common treatment methods were "cold turkey" -- weaning off the drug use without medical intervention -- and methadone maintenance at the psychiatric hospitals. The latter method ran into many operational difficulties due to lack of trained staff, facilities and proper planning of activities. Many valuable lessons could be learnt by probing into its history in Sri Lanka.

Due to the social stigma attached to drug use and other reasons, most of the users preferred private treatment facilities. At the same time, 10% had been treated through the NGO treatment facilities. It is a case in point, to encourage more NGOs to participate in the treatment of heroin dependents.

Westermeyer (1988) reported that the sampling data suggest that women with psychoactive use disorders enter treatment centres less often than men. In seeking treatment, they appeared to prefer a traditional setting (e.g., a Buddhist temple) over a modern setting (e.g., a medical facility) as compared to men. The NDDCB's ad hoc camps for treatment of heroin users which are often housed in Buddhist and other religious settings could be a more suitable method for the females.

Rosenbaum (1979) had pointed out that women tended to maintain their drug habits longer before trying abstinence; they also show less oscillation than men between drug use and voluntary abstinence.

Men emphasized their intention to change the overall pattern of their lives and functioning as a reason for abstinence. Secondarily, they cited relationship between drugs and health problems as well as the expense of drugs as the major reason for withdrawal from drug use. By comparison, half the women gave drug-related physical problems as the reason for their decision to make an effort to withdraw from heroin use and change their life style.

Brown (1971) has reported that the major reason for failing in efforts to withdraw from heroin use was the psychological need which remained even after they had ended their physical need. Furthermore, for women, relief from personal problems was the second most-cited explanation, while for men, the easy availability of heroin and its use to get relief from personal problems were of some consequence in resuming its use.

The access to narcotics could partially explain the relapse, but accessibility appears at best a necessary rather than a sufficient condition for relapse.

Zahn and Ball (1972) have reported that other reasons appeared to be more compelling, such as lack of meaningful human ties or disruption of established ties.

Marital and, especially, parental roles may well increase motivation to stay away from narcotics and thus partially explain the longer resistance of women to relapse.

Illegal activities. Sixty one percent of the drug users of the present sample had been arrested for involvement in illegal or criminal activities during the 12 months prior to the interviews. However, only 33% of the previous sample was involved in such activities. Thus, the number involved in illegal or criminal activities has increasd by about one third from 1988 to 1992.

The number of persons arrested for drug-related offences has increased from 35% in 1988 to 49% in 1992. The number of drug-

related arrests and prison admissions have also increased during the above period. The number of persons arrested for drug-related offences was 3,782 in 1988 and this has increased to 8,988 in 1992 (DAMS 1991). Similarly, drug-related prison admissions which numbered 2,337 (28%) in 1988 had increased to 6,654 (47%) in 1990 (Prison Statistics 1991).

Desmond and Maddux (1984) have observed that the majority of addicts, regardless of ethnicity, had reported having some contact with the law enforcement agencies at some time in their drug careers. Burglary, theft and drug trafficking are the most common sources of illegal income for all addicts; forgery, prostitution, armed robbery, and gambling are the least likely.

Rosenbaum (1979) is of the view that perhaps because women have the option of supporting their drug use through prostitution, they tend to have fewer convictions and incarcerations, and are employed for shorter periods of time than men.

Chambers (1970) has pointed out that research on the relationship between prostitution and drug use indicates that approximately 40% of all female heroin users supports their habits through prostitution, while some estimates range as high as 70%. However, the present findings do not support this view, probably due to the fact that the sample was predominantly male (96%).

Eldred and Washington (1979) have reported that several studies had shown that women received money to suport their drug habit from the spouses, whereas men most often resorted to pushing, dealing or stealing drugs. Some research indicates that engaging in criminal activities to support the drug habit is common for both men and women, and that there is no significant difference between men and women in the tendency to resort to crime to raise money for drug purchase.

Waldorf (1973) is of the view that there exists a general cultural bias which tends to deal with male deviants legally or formally and female deviants paternally or informally or medically. Men are more affected by arrests than women, since they are incarcerated with more regularity (resulting in enforced abstinence). Women, however, kick the habit on their own or through treatment.

In the present sample too, the majority of the users of the prison sample were male. However, the majority of the female sample too, were interviewed in the prisons. This suggests that the female users were also considerably involved in drug-related offences. Perhaps, due to the abovementioned cultural bias, enforcement of the drug laws on women could be lenient. In such a situation, it could have many cultural, socio-economic and legal ramifications. It may facilitate the spread of heroin use among females.

Frequency of use. The quantity of heroin used for a day by a user could be an indicator for its demand and the extent of the problem. This quantity would depend on its purity, price and other factors. As it is an illicit drug, it would not be possible to enumerate accurately the actual quantity of heroin consumed. On average, a heroin user may consume 4 to 6 packets a day. Compared to the previous Careers Study sample, there seems to be no marked difference in the number of packets used for a day per person, i.e., an average of 4 packets for a day.

However, the heroin users are of the view that during the last 5 years, while the price of heroin has increased significantly the quantity and purity have decreased. This has resulted in, despite the poor quality of heroin, some users switching over to intravenous use to economize and for "better effect".

Anglin (1987) has reported that of those who had used heroin, about 25% had become addicted within the first month of use. More women than men fall into this category, and, on average, women took less time to become addicted. Further, when addicted for equivalent time periods, women become more dependent on the drug.

He is of the view that women and men seem to follow similar narcotic use patterns, but women's careers were "compressed" or were in a shorter cycle. Other major areas of differences were in accordance with the sex role stereotypes, and are not related to age.

Expense on heroin. On average, a heroin user spent Rs.150.00 on heroin for a day. For controlled users it was Rs.149.00 (S.D.=Rs.124.00) and for compulsive users it was Rs.160.00 (S.D.=Rs.144.00). The expense ranged from Rs.10.00 to 1,000.00

a day for controlled users and Rs.10.00 to 1,250.00 for compulsive users. In 1988, average daily expense on heroin per person was Rs.110.00. During the period 1988 to 1993, it has increased by nearly a third.

In the sample of the present study, 371 heroin users spent approximately Rs.55,000.00 (US$1,122) on heroin a day and Rs.20 million (US$408,163) a year. A population of 50,000 heroin users spent Rs.7.5 million (US$150,000) a day and Rs.2,735.50 million (US$55 million) a year. This is equivalent to a per capita GNP of approximately 150,000 Sri Lankans (annual per capita GNP in 1989=US$369) or nearly 01% of the total GNP of Sri Lanka.

Anglin (1988) has reported that the vast majority had received their first narcotics as a gift, but the source difference was significant for men. They were most likely to have purchased or obtained them through other means, e.g., by stealing them.

Multiple drug use. Most of the heroin users were multiple drug users. In addition to heroin, they had used tobacco, alcohol, cannabis, opium, hashish and cocaine, etc. Psychotherapeutic or prescribed drugs were also abused by them in order to supplement the effect of heroin or in lieu of it. Commonly used psychotherapeutic drugs were diazepam, flunitrazepam, chlorphenieramine maleate, methadone, largactil, librium, phenobarbitone and amphetamines. Some had used more than one of the above.

According to a survey on drug dependence (1976) among secondary school students in Colombia, the incidence of multiple drug abuse was highest among the narcotics users. The use of LSD, hallucinogens, fungi, and barbiturates was relatively low among users of marijuana, inhalants, and other popular substances.

Rosenthal (1979) has reported that women are more likely to use psychotherapeutic or prescribed drugs, and men are more likely to use illicit drugs such as opiate, marijuana, and cocaine.

Based on a study in Laos, Westermeyer (1988) has reported that in a context of rapid socio-cultural change, young men choose similar psychoactive substance in different forms -- cigarettes, canned beer, heroin -- as compared to older men who used opium,

rice wine or whisky, and tobacco pipes. The younger women were also breaking from tradition by giving up betel chewing.

Tobacco use. All the males of the sample and 93% of the females were tobacco users. Cigarettes were the most popular brand and, on an average, a person smoked 12 cigarettes a day (S.D.=8). The average duration of smoking was 12 years. Amongst the sample of the previous Careers Study, 99.5% was tobacco smokers.

A study on Smoking Patterns (1990) in Sri Lanka indicates that among the tobacco smoking persons above 12 years of age, there were 55% males and 01% females. Compared to the general population, the prevalence of tobacco smoking is high amongst heroin users.

Alcohol use. Of the sample, 73% males and 27% females had consumed alcohol. Most of them were spirit drinkers. Of the sample of the previous study, 88% had consumed alcohol. Wijesinghe et al. (1978) have reported that the prevalence of alcohol use is around 0.5% and is uniformly prevalent in different parts of Sri Lanka.

Swinson's (1980) studies on alcoholism have suggested that the paternal alcohol abuse has a great influence on the likelihood of the subsequent development of alcoholism in the offspring.

Suffet and Bortman (1978) have reported that men were more likely to use alcohol particularly to cope with depression or stress, while women tended to use more of prescription drugs.

Cannabis use. Of the sample, 72% had used cannabis and 20% was females. Of the previous study, 86% of the users had used cannabis.

Psychotherapeutic drug use. Psychotherapeutic or prescribed drugs were used by heroin users, to enhance the effect of heroin as well as stop gap measures to overcome heroin withdrawal symptoms. The mostly used prescribed drugs were diazepam, flunitrazepam, chlorphenieramine maleate, methadone, largactil, librium, phenobarbitone and amphetamines. Some persons have used more than one type at a given time.

The regular or compulsive use of the above amongst the users has considerably increased during the period 1988 to 1992. The use of diazepam has increased 5-fold, flunitrazepam 6-fold, chlorphenieramine maleate 3-fold, methadone 2-fold, largactil 2-fold, and librium 2-fold. The major reasons for this increase were the unethical dispensing practices and the easy availability of the drugs.

Chambers (1970) has reported the extensive concurrent use of sedatives and hypnotics -- usually barbiturates -- by female opiate addicts; 67% of the above had stated it was a part of their drug histories.

Westermeyer (1988) has reported that sex-linked social traditions -- e.g., women sharing betel-areca and men smoking pipes -- were also powerful determinants of exposure to psychoactive substances. Women in Laos showed a group preference for stimulants while the men showed it for sedatives. If the latter observation is valid, sex-linked work responsibilities may be a causal factor of the above.

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