Pacini Editore & AU-CNS

Regular Article

*Heroin Addict Relat Clin Probl 2022; 24(2): 27-34*

HEROIN ADDICTION & RELATED CLINICAL PROBLEMS

www.europad.org
www.wftod.org

# Relapse rate following institutionalized rehabilitation of male heroin addicts: A Sri Lankan experience

Nuwan Darshana, Champa Wijesinghe, and Vijitha De Silva,

*Department of Community Medicine, Faculty of Medicine, University of Ruhuna, Sri Lanka*

*Summary*

**Background**. Relapses following rehabilitation are identified as a major drawback in the rehabilitation process of drug addicts in many countries, including Sri Lanka. The present study was conducted to assess the relapse rate following institutionalized rehabilitation programmes among male heroin addicts in selected rehabilitation centres in Sri Lanka. **Methods**. A descriptive cross-sectional study with a follow-up was conducted among a randomly selected sample of 189 male heroin addicts in five selected rehabilitation centres in Sri Lanka. Study participants were followed up for six months with two follow-up interviews at 3 months and 6 months after discharge from the respective rehabilitation centre. A 'relapse' was defined as a return to heroin use after a period of abstinence often accompanied by reinstatement of dependence symptoms. **Results**. At the end of three months, the relapse rate was 48.7% (n=92), while after six months it was 59.6% (n=109), excluding cases where patients failed to attend follow-ups (n=6, 3.17%). The easy availability and accessibility of heroin within the living community was identified as the main reason for relapse in as many as 82.6% (n=90) of heroin users who had relapsed. A majority (66.1%, n=72) of those who relapsed did so within the first six weeks (mean (SD) 5.7 (5.3) weeks) after discharge. **Conclusions**. Relapse was identified as a common problem in the drug rehabilitation process in Sri Lanka. This calls for the attention of policy makers who are responsible for planning and implementing follow-up programmes for drug addicts, including heroin addicts, especially during the initial period after discharge from rehabilitation centres to minimize the number of relapses.

**Key Words**: Heroin addicts; relapse rate; rehabilitation

## 1. Introduction

According to the World Health Organization, relapse can be defined as "a return to drug use after a period of abstinence often accompanied by reinstatement of dependence symptoms" **[18]**. Globally, many drug addicts end up with relapses even after a successful rehabilitation programme **[3, 7, 8, 11, 13, 15, 17]**. Although few data are available on the topic of the relapse rates of drug addicts in Sri Lanka, many rehabilitation centres have reported a high proportions of readmissions following relapses.

Heroin is the illicit drug that is associated with the greatest drug-related damage to health and the many problems arising from substance dependence in Sri Lanka. As a result, rehabilitation programmes in the country are mainly focused on heroin addiction. At present, almost all treatment admissions (>99%) as well as heroin-related arrests made in Sri Lanka affect male patients. Although heroin addiction is a growing problem among females in many countries throughout world, it would not be feasible to recruit an adequate sample of female heroin addicts for a study in Sri Lanka due to the extremely low prevalence rate for heroin use in female patients

Corresponding author: Dr. Ipitagama Liyana Arachchige Lecturer in Community Medicine, Department of Community, Medicine, Faculty of Medicine, University of Ruhuna, PO Box 70, Galle, Sri Lanka.
Phone: 094714196948 Fax: +94 91 2222314 E-mail: ilandare@gmail.com

compared with males. That is the reason why only institutionalized male heroin addicts were included in the current study.

Usually, heroin addicts have to face many challenges such as problems at work, ongoing emotional and psychological issues, financial hardship, rejection by social support networks and challenges in personal relationships within the subject's specific social environment after discharge from rehabilitation centres **[1]**. Most heroin addicts are unable to cope with these new challenges and end up with a relapse. With the higher number of readmissions, rehabilitation centres become overburdened, and are unable to provide adequate facilities to heroin addicts who should be able to rely on their services. It is therefore essential to assess the relapse rate following rehabilitation to understand the extent of this burden of readmissions. Such information is valuable in attracting the attention of policy makers to the issue of how best to improve drug rehabilitation services. To sum up, this study was carried out both to assess the relapse rate and the effectiveness of existing rehabilitation programmes among heroin addicts in selected institutions.

According to the literature, most of heroin addicts have relapsed during the first six months after discharge from rehabilitation centres **[2, 9, 12]**. Their follow-up status was therefore assessed at 3-monthly intervals (at 3 months and at 6 months) after discharge from their rehabilitation centre. Relapse status, service satisfaction regarding rehabilitation and follow-up status after discharge from each patient's rehabilitation centre were the main data assessed in this study and reported in this paper.

## 2. Methods

### *2.1. Design of the study*

An institution- and/or community-based, descriptive cross-sectional study with a follow-up of 6 months was carried out by us. This study was conducted in institutional and community settings among a sample of heroin addicts each of whom had been discharged from one of five selected drug rehabilitation centres in Sri Lanka.

### *2.2. Sample*

A sample of 189 randomly selected heroin addicts who had been admitted to one of five selected rehabilitation centres and were then discharged after completing their three-month rehabilitation period were included in the study. The sample was selected by simple random sampling using a computer-based random number generator. Heroin addicts who had not completed their treatment period and who were then admitted to a two-week pain relief programme were excluded from the study.

### *2.3. Data collection instrument*

An interviewer-administered questionnaire was used for data collection. The questionnaire included study variables identified in reviews available in the literature, and discussions were held with experts in the field of drug addiction. Status of relapse, the degree of satisfaction felt about the rehabilitation service, together with follow-up status were assessed in the questionnaire.

### *2.4. Procedure*

Prior to initiation of the study, ethical approval was obtained from the Ethical Review Committee, Faculty of Medicine, University of Ruhuna, Sri Lanka (Ref. No. 11.07.2016:3.13). Informed consent in writing was obtained from study participants to permit data collection. The contact numbers of the heroin addicts and their family members, as well as their residential addresses, were noted down after informed consent had been granted at the initial stage of the study, and this contact information was used to locate the selected subsample of heroin addicts during the follow-up stage. Data collection was done during follow-up meetings with the selected participants that were held at the rehabilitation centres, at the residence of the participant whenever possible, or via telephone conversations, as appropriate. The principal investigator visited the rehabilitation centres during follow-up meetings to conduct the interviews, or visited the residences of heroin addicts who did not attend the follow-up meetings. The interviews were held at a place where privacy could be assured. When face-to-face interviews were not feasible, the participants were contacted via telephone with their consent, at a time convenient to them. All data were collected by the leading investigator, after obtaining informed consent, using the same format for all the settings (at follow up meetings, at home visits or via telephone calls), to maintain uniformity in data collection.

The participants were followed up during the 6 months after discharge, with the support of social workers attached to the rehabilitation centres. To minimize the loss to follow-up, support was obtained from the rehabilitation centres that had been selected, family members and outreach officers of NDDCB. The effectiveness of the rehabilitation programme (whether a relapse had occurred or not) was obtained from the heroin user and cross-checked with a family member of the drug user and the respective rehabilitation centre to ensure the validity of the information gathered.

**Table 1:** Basic sociodemographic profile of drug users in the follow-up sample (N=189)

| Basic Characteristics | Number | Percentage |
|---|---|---|
| Age[1] | | |
| < 25 years | 56 | 29.6 |
| > 25 years and over | 133 | 70.4 |
| Ethnicity | | |
| Sinhala | 166 | 87.8 |
| Tamil | 4 | 2.1 |
| Muslim | 17 | 9.0 |
| Malay | 2 | 1.1 |
| Religion | | |
| Buddhist | 150 | 79.4 |
| Hindu | 3 | 1.6 |
| Islam | 18 | 9.5 |
| Catholic | 18 | 9.5 |
| Level of education | | |
| Unsatisfactory | 119 | 62.9 |
| Satisfactory | 70 | 37.1 |
| Residential District | | |
| Western Province (implying an urban setting) | 126 | 66.6 |
| Outside Western Province (semi-urban setting) | 63 | 33.4 |

[1] Mean±SD=29.68(±7.85) years , Median= 27.0 years, Range = 16-58 years

### *2.5. Data analysis*

Sociodemographic data of drug addicts in the follow-up sample, the follow-up status, health and social problems found in drug addicts after discharge from their particular rehabilitation centre, service satisfaction and relapse rate were calculated using means, standard deviations, medians and interquartile ranges, percentages, frequency tables and graphs, as appropriate.

The relapse rate was calculated at 3 months and then at 6 months, after determining the individual drug user's relapse status according to the following equation: Relapse Rate = Number of drug addicts who had relapsed after rehabilitation process at a given time period X 100 divided by the total number of drug addicts followed up over the same time period.

## 3. Results

A sub-sample of 189 male heroin users randomly selected from among 431 heroin users and followed up for a six-month period after discharge from rehabilitation centres. Among the follow up sample, a majority of heroin addicts were Sinhalese (n=166, 87.8%), Buddhist (n=150, 79.4%), aged 25 years or more (n=133, 70.4%) and residents from a Western province (i.e., in an urban setting) (n=126, 66.7%). Nearly two-thirds (n= 119, 62.9%) of the subjects had an unsatisfactory educational level (**Table 1**).

### *3.1. Relapse rate after discharge from rehabilitation centre during the follow-up*

All 189 heroin addicts were successfully followed up until 3 months had elapsed after their discharge from the rehabilitation centre, and the response rate was 100%. The relapse rate was calculated at the end of three months. At that time, 92 rehabilitated heroin users had resumed drug use after abstinence, so giving rise to a relapse rate of 48.7%. Ninety-seven patients (51.3%) had not relapsed.

By the end of six months, 182 heroin addicts in the follow-up sample had been successfully followed up. One heroin user died due to heroin overdose. Six heroin users (3.2%) were lost to follow-up during this period, so that the response rate at six months was 96.8%. The relapse rate was calculated at the end of those six months. At the end of six months, 109 (59.6%) rehabilitated heroin users had resumed their drug use after abstinence, there had been one death due to drug overdose, while seventy-four (39.1%) participants had not relapsed. At the end of six months, the relapse rate was 59.6%, excluding those lost to follow-up (see **Figure 1** and **Table 2**).

A majority (percentagewise, 84.4%) of the heroin users who relapsed had experienced their relapse within the first three months after discharge from their respective rehabilitation centre. The mean time that passed before relapse was less than one month (mean= 3.1 weeks and SD=4.8 weeks).

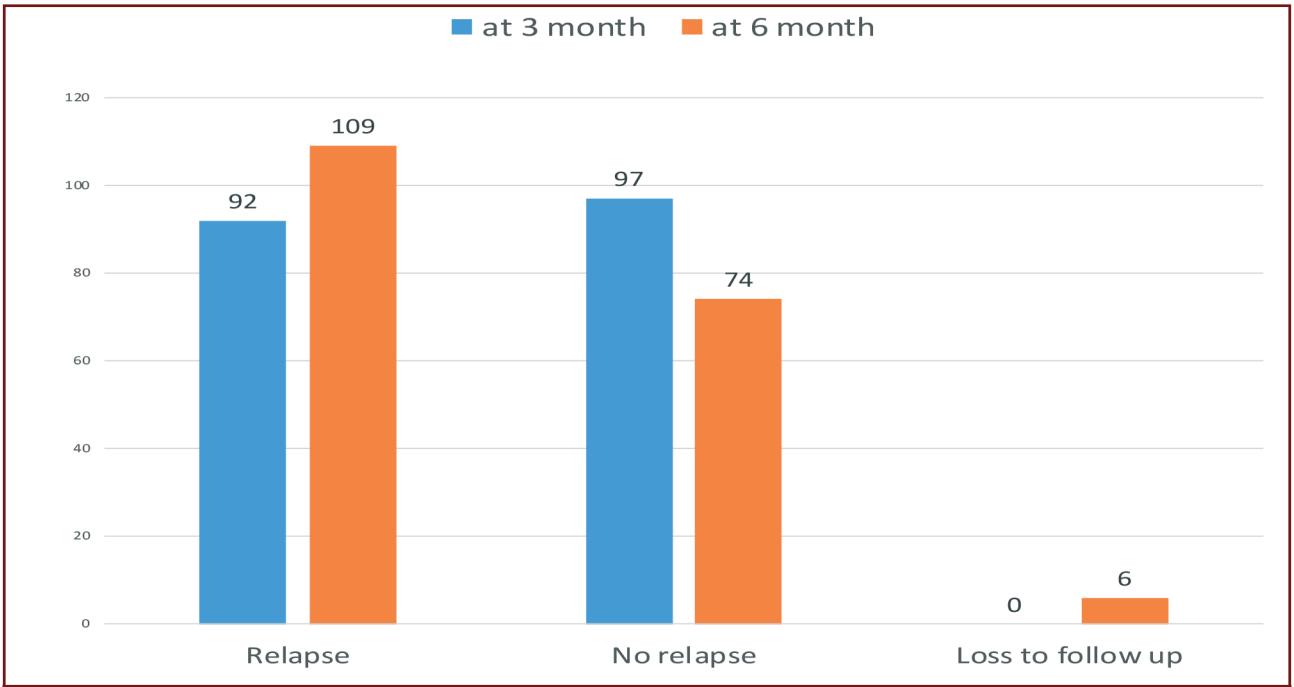


**Figure 1:** Follow-up status of the sample (N=189)

The desire to take heroin after returning to the same social conditions was identified as the main reason for this outcome among the 82.6% (n=90) of heroin users who did relapse. Approximately 16% of the previously rehabilitated heroin users (n=17) reported that they relapsed due to stress, whereas 1.8% (n=2) relapsed due to the use of alcohol and tobacco after discharge from each participant's rehabilitation centre.

### *3.2. Follow-up status of drug addicts after discharge from rehabilitation centres*

The efforts made by the various rehabilitation centres to contact the patient for follow-up were assessed at the beginning of the follow-up status assessment. A clear majority of the heroin users (n=163, 86.2%) were followed up using telecommunication (phone calls) by rehabilitation centres, though only 48.1% of drug users (n=91) participated in follow-up meetings held by the five selected rehabilitation centres. A minority (n=33, 17.5%) were, however, followed up by outreach officers attached to these rehabilitation centres.

Regular follow-ups (once a month, until three months had elapsed after discharge from the respective rehabilitation centre) were reported by 55.2% of heroin users (n=104) after their discharge from rehabilitation centres by any of the above methods, and irregular follow-ups (1-2 follow-up sessions during the three-month period after discharge) were reported among 31.7% (n=60) of heroin users. On the other hand, 13.2% of heroin users (n=25) were not followed up on at least one occasion by the rehabilitation centre in question, due to a failure to use any of the methods described above.

Status of heroin use at three months and at six months after discharge from one of the chosen rehabilitation centres was assessed using the same questionnaire; the results are presented in **Table 3**. At the three-month follow-up, one death (1.4 %) and two prison admissions (2.8 %) due to heroin use were reported among routine drug users (n=72) after discharge from the rehabilitation centre. At the six month

**Table 2:** Relapse rates among rehabilitated drug addicts as specified in the assessment formulated by that rehabilitation centre three and six months after participants had been discharged (N=189)

| | Status of relapse | | | | |
|---|---|---|---|---|---|
| Follow up | Relapsed | No relapsed | Loss to Follow- ups | Total | Relapse rate |
| First follow up at 3 months | 92 | 97 | 0 | 189 | 48.7% |
| Second follow up at 6 months | 109 | 74 | 6 | 189 | 59.6%* |

*Excluding loss to follow-ups

**Table 3:** Status of drug use among drug users after discharge from their specific rehabilitation centre (N=189)

| | At three months | | At six months* | |
|---|---|---|---|---|
| Drug use status | N | % | N | % |
| Routinely used drugs | 72 | 38.1 | 79 | 42.1 |
| Drugs used on and off | 20 | 10.6 | 16 | 8.5 |
| Use of alcohol and tobacco instead of illicit drugs | 3 | 1.6 | 1 | 0.5 |
| No use of illicit or psychoactive drugs | 94 | 49.7 | 86 | 45.7 |
| Lost to follow up | 0 | 0.0 | 6 | 3.2 |

*At the six-month follow-up total drug users numbered 188, due to one death reported during the first three months

follow-up, two prison admissions (2.5 %) and 18 admissions into rehabilitation centres (22.8%) were reported among routine heroin users (n=79) after discharge from their particular rehabilitation centre. Five heroin addicts (1.3 %) were on medical treatment for drug use behaviour.

Service satisfaction during rehabilitation and after discharge from a rehabilitation centre was assessed; a majority of the study participants were satisfied with the service received during rehabilitation (n=174, 92.1%), and after discharge from the rehabilitation centre (n=157, 83.1%).

## 4. Discussion

The present study assessed the relapse rate and effectiveness of rehabilitation in a subsample of 189 heroin addicts. At the end of the first three months of follow-up, the relapse rate was 48.7%. At the end of six months, the relapse rate was 59.6%. These findings confirm that a clear majority (84.4%) of the heroin users who relapsed had experienced their relapse within the first three months after discharge from a rehabilitation centre **[10]**. The mean time passing before relapse was less than one month (mean = 3.1 weeks and SD = 4.8 weeks). Relapse rate within selected rehabilitation centres varied, whether considering the 3-month or the 6-month period. However, the number of participants recruited from respective rehabilitation centres varied too, which could have affected the representative weight of the relapse rate within the subsample. As a high relapse rate (nearly 60%) was detected during the first six months after discharge from the rehabilitation centres, there is consequent concern about the effectiveness of rehabilitation programmes.

In the local context, there were no data related to the relapse rate. A study carried out in Iran, however, did find a relapse rate of 30.4% with an almost two-year mean time before relapse **[5]**. When compared with our relapse rate, the Iranian drug users had a lower one (30.4% vs. 60.8%) and a higher mean time before relapse (>24 months vs. <3 months). It would be worth reviewing the rehabilitation procedures in Iran to gain greater understanding about the factors that may have contributed to the observed effectiveness of their rehabilitation programmes. That would enable the policy makers and health programme planners to incorporate positive changes into rehabilitation programmes in our country.

A study carried out by Maehira et al. in Bangladesh found a relapse rate of 54.5% two months after patients' discharge from their respective rehabilitation centre. The median time to relapse was 45 days **[9]**, which was very similar to the present study findings. Sri Lanka and Bangladesh are countries within the same region and both countries share similar characteristics and patterns of heroin use **[17]**; these similarities may account for the similar patterns observed in relapse, too.

In a study carried out in England using 80 rehabilitated drug addicts, a 71% relapse rate was observed after six weeks **[4]**. This is a higher relapse rate, with a longer mean duration before relapse occurs, compared with our study. Similarly, in a study conducted in China involving as many as 620 heroin addicts, it was found that 80% of the relapses occurred within a period of two years **[12]**. Another study, carried out in the USA, found a high relapse rate of 87% after a follow-up of 200 drug addicts; in that study the duration of follow-up was a full year **[16]**. These findings make it clear that many heroin addicts end up with relapse despite having completed rehabilitation. As the present study showed a relapse rate of nearly 60% in a six-month period after discharge from participants' rehabilitation centres, it can be safely assumed that if the sample was followed up further, the relapse rate might turn out to be higher, so that the reported results could be compatible with the studies done in England, China and the USA **[12]**.

Several theories have been suggested to explain relapses by researchers such as genetic theory, metabolic theory, learning theory, social learning theory, psychopathology, and conditional theory, etc. **[10]**. Although the causes for relapse were not assessed in depth in this study, we identified the main reasons for relapse. Tendency to take heroin in the same social background (82.6%), seeking relief from problems (15.6%) and use of alcohol and tobacco (1.8%) were identified as being the main reasons for relapse. Stephens and Cottrell identified three factors as the main

reasons which led to relapse; interpersonal stress, patient's craving or enjoyment of the euphoric effects and the "magnetic" pull of the addict subculture, and inability to cope with their own problems and frustration **[16]**. When compared with our study findings, the inability to cope with one's own problems and frustration was compatible with the reason for relapse reported as being "due to stress" in our study. The patient's craving or enjoyment of the euphoric effects and the "magnetic" pull of the addict subculture was compatible with the desire to take drugs in a setting that had the same social background. Although interpersonal stress was not identified as the main reason for relapse in our study, it seems to reflect the interrelation between all those factors. Furthermore, in the study done by Maehira et al., peer influence and family-related stress were identified as the main reasons which had to relapse **[9]** which were not reported in our study.

According to Gossop and co-researchers, the first lapse into opiate use usually did not herald or predict a full-blown relapse into substance use dependence, and it showed variations over time **[4]**. Some drug addicts who relapsed can go into an abstinence period again over time, while only a few study participants, once they have entered a period of abstinence, end up with a relapse. In the present study too, although the relapse rate increased over time, in line with the definition of relapse, some drug addicts who relapsed within the first three months were no longer using any drugs at the six-month follow-up. What is more, some drug addicts ended up with readmission into rehabilitation centres, left the country, were imprisoned or actually changed their usual living environment, so supporting the findings of Gossop et al. When drug addicts and their family are jointly disappointed with the experience of a relapse following drug rehabilitation, they try to find alternatives to prevent further relapses by sending the addict abroad or to an area remote from the usual living environment, while some try to get help from an alternative rehabilitation centre. However, According to the as literature, however, as well as by reference to our study results, it is evident that it is difficult to prevent relapses, so that it requires a well-planned, multidisciplinary rehabilitation programme with a closely monitored follow-up to prevent them.

A majority of the heroin users in the follow-up sample expressed satisfaction with the services received during rehabilitation and after discharge from the specific rehabilitation centre. According to a systematic review carried out by Keith, rehabilitation related to health care generally shows high levels of satisfaction **[6]**. As drug rehabilitation is widely considered as health care-related rehabilitation, that finding was compatible with the high level of service satisfaction revealed in this study.

Although there are outreach officers attached to rehabilitation centres who are responsible for following up drug addicts after discharge, only 17.5% of heroin addicts were visited at their residence by outreach officers in our study. In addition, only 48.1% of heroin addicts had participated in at least one follow-up meeting. Follow-up of heroin addicts within their own community through home visits can be considered as the best option for follow-up, while multimember follow-up meetings can be conducted in parallel with home visits, rather than using telecommunication **[14]**. Regular follow-up was, in any case, reported among nearly half of the heroin users after discharge from their particular rehabilitation centre using some method, whereas 13.2% of heroin users were not contacted in this way, an outcome that makes clear the need for proper follow-up services for heroin users after discharge from rehabilitation centres so as to deliver better care, while minimizing relapses.

**Limitations:** All the rehabilitation centres that provide island-wide services were included in the study, with a view to increasing the representative value of the sample. As the results of our study revealed, however, a majority of the heroin users in these centres came from the country's urban community, so limiting the generalizability of the findings to the population of heroin addicts within the entire country. This finding must be identified as a limitation to the study.

**Clinical implications:** As a high relapse rate was observed throughout the present study, the introduction of discharge plans at an individually tailored level according to the sociodemographic background of each heroin addict is recommended before discharge, and should be followed up according to the discharge plan. Our specific recommendation is to obtain help from a multidisciplinary team, including family members, social workers, authoritative members of the criminal justice system, health professionals, staff working in top-performing rehabilitation centres, and many others, to raise the chances of success of this discharge plan. Further, a proper discharge plan will help in communicating from the outset with heroin addicts who are still in the initial stage of relapse, so avoiding their return to heroin addiction. Hence the study recommends the need for a proper follow-up plan at the individual level, with a special priority to be dedicated to home visits.

## 5. Conclusions

Relapse has been identified as conspicuous problem in the drug rehabilitation process in Sri Lanka, in line with our study results. A significant number of heroin addicts ended up with relapse occurring only a very short time after discharge from rehabilitation centres. This should draw the atten-

tion of policy makers and health programme planners towards developing comprehensive follow-up programmes for drug addicts, especially during the initial period after discharge from rehabilitation centres. Variations in follow-up status over time, even in individual drug addicts, further draw attention to the need for tailor-made follow-up plans that respond to the need to actively help drug addicts at the initial stage of relapse. As a result, the study recommends the design and implementation of a comprehensive follow-up plan on an individual basis, featuring home visits with the help of a multidisciplinary team, including family members, social workers, officers in the criminal justice system and staff selected from leading rehabilitation centres.

## References


1. Alcohol and Drug Foundation (2019): New Psychoactive Substances [Online]. Melbourne. Available: https://adf.org.au/drug-facts/new-psychoactive-substances/ [Accessed 12.06.2019 2019].
2. Andersson H. W., Wenaas M., Nordfjærn T. (2019): Relapse after Inpatient Substance Use Treatment: A Prospective Cohort Study among Users of Illicit Substances. *Addict Behav.* 90: 222-228.
3. Evren C., Yilmaz A., Bozkurt M., Can Y., Umut G., Evren B. (2014): Motor Impulsivity Discriminated Relapsed Male Heroin Dependents from Those Who Were Still in Buprenorphine Maintenance Treatment at the 12-Month Follow-Up. *Heroin Addict Relat Clin Probl.* 16(4): 49-54.
4. Gossop M., Green L., Phillips G., Bradley B. (1989): Lapse, Relapse and Survival among Opiate Addicts after Treatment: A Prospective Follow-up Study. *Br J Psychiatry.* 154(3): 348-353.
5. Kassani A., Niazi M., Hassanzadeh J., Menati R. (2015): Survival Analysis of Drug Abuse Relapse in Addiction Treatment Centers. *Int J High Risk Behav Addict.* 4(3): e23402. 10.5812/ijhrba.23402
6. Keith R. A. (1998): Patient Satisfaction and Rehabilitation Services. *Arch Phys Med Rehab.* 79(9): 1122-1128.
7. Lin M.-F., Lang S.-Y. (2021): The Effect of Cognitive Behaviour Group Therapy on Drug Dependence among Heroin Addicts in Taiwan: What Roles Do Drug Beliefs, Drug Craving, and Intention to Relapse Play? . *Heroin Addict Relat Clin Probl.* 23(4): 5-14.
8. Maremmani I., Hill D., Scherbaum N., Auriacombe M., Bacciardi S., Benyamina A., Casella P., D'agnone O., Daulouede J.-P., Deruvo G., Fonseca F., Guareschi M., Maremmani A. G. I., Villeger P., Ratcliffe K., Somaini L., Touzeau D., Vernole E., Walcher S., Dart R. (2021): Early-Readmission after Agonist Opioid Treatment in Five European Countries. A Drug Addiction Health Policy Challenge? *Heroin Addict Relat Clin Probl.* 23(4): 69-79.
9. Mcauliffe W. E., Feldman B., Friedman R., Launer E., Magnuson E., Mahoney C., Santangelo S., Ward W., Weiss R. (1986): Explaining Relapse to Opiate Addiction Following Successful Completion of Treatment. *Relapse and recovery in drug abuse.* 72: 136.
10. Mccoy C. B., Lai S., Metsch L. R., Wang X.-R., Li C., Yang M., Yulong L. (1997): No Pain No Gain, Establishing the Kunming, China, Drug Rehabilitation Center. *J Drug Issues.* 27(1): 73-85.
11. Mohd Fahami N. A., Nazrun Shuid A., Abdullah A., Naina-Mohamed I., Chin K.-Y., Mohamed N., Masbah N., Haji Mohd Saad Q., Kamisah Y., Muhammad N. (2019): A Systematic Review of Methadone Maintenance Therapy Studies in Preventing Relapses in Addiction: Evidence from Asean Countries *Heroin Addict Relat Clin Probl.* 21(5): 13-30.
12. Pedroso R. S., Guimarães L. S. P., Zanetello L. B., Gonçalves V. M., Lopes-Rosa R., Pianca T., Pechanky F., Kessler F. H. P. (2016): High Rates of Relapse in Adolescents Crack Users after Inpatient Clinic Discharge. *J Bras Psiquiatr.* 65(3): 215-222.
13. Sarami Foroushani N. (2019): The Impact of Mindfulness-Based Relapse Prevention on Craving, Lapse and Mindfulness Fostering in Addicted Patients in Methadone Maintenance Treatment. *Heroin Addict Relat Clin Probl.* 21(5): 33-40.
14. Smyth B. P., Barry J., Keenan E., Ducray K. (2010): Lapse and Relapse Following Inpatient Treatment of Opiate Dependence. *Ir Med J.* 103(6): 176-179.
15. Solati K., Hasanpour-Dehkordi A. (2017): Effectiveness of Cognitive-Behavioural Stress Management on Self-Efficacy and Relapse of Substance Use Disorders Symptoms. *Heroin Addict Relat Clin Probl.* 19(4): 25-34.
16. Stephens R., Cottrell E. (1972): A Follow- up Study of 200 Narcotic Addicts Committed for Treatment under the Narcotic Addict Rehabilitation Act (Nara). *Br J Addict Alcohol Other Drugs.* 67: 45-53. 10.1111/j.1360-0443.1972.tb01167.x
17. United Nations Office on Drug and Crime (2018): World Drug Report.
18. World Health Organization (1994): Lexicon of Alcohol and Drug Terms. Geneva.



### *Acknowledgements*

We would like to thank: the Chairman of the National Dangerous Drug Control Board, Sri Lanka, for granting permission for data collection; the managers and staff members of the five selected rehabilitation centres for their unfailing support during data collection; the University Grant Commission, Sri Lanka, for its financial assistance to the study; and all the participants in the study for their cooperation in implementing its aims.


### *Contributors*

ND, CW and VDS each contributed to conceiving and designing the study. The data were collected by ND. The gathered data were analysed and interpreted by ND under the supervision of VDS and CW. ND wrote the manuscript under the supervision of VDS and CW. VDS and CW contributed equally to reviewing the manuscript. The three authors had shared equally in revising and approving the manuscript.


### *Role of the funding source*

The study was funded by the University Grant Commission (UGC) of Sri Lanka under the UGC Grant for financial assistance to university teachers for higher studies (Grant Number: UGC / VC / DRIC / PG 2016 (II) / RUH / 01). Grant supported to cover registration fees for the research study and for research expenses.

*Conflict of interest*

The authors declare that they have no competing interests.

*Ethics*

Authors confirm that the submitted study was conducted according to the WMA Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects. All patients gave their informed consent to the anonymous use of their clinical data for this independent study.

*Note*

It is the policy of this Journal to provide a free revision of English for Authors who are not native English speakers.

*Received March 10, 2021 - Accepted August 5, 2021*