

# Relapse Rate and Associated Factors Among Participants of Drug Detoxification-Rehabilitation Program in Indonesia: A Retrospective Study

Jubir  
*Faculty of Nuring*  
*Universitas Syiah Kuala*  
Banda Aceh, Indonesia  
Serune11@yahoo.com

Hizir Sofyan  
*Department of Statistics*  
*Universitas Syiah Kuala*  
Banda Aceh, Indonesia  
Hizir@unsyiah.ac.id

Fauziah  
*Nursing Academyf organization*  
*Universitas Abulyatama*  
Aceh Besar, Indonesia  
fauziahhozi79@yahoo.co.id

Bianca Marella  
*Department of Psychology*  
*Universitas Tarumanagara*  
Jakarta, Indonesia

Marthoenis  
*Department of Psychiatry and Mental Health*  
*Nursing Universitas Syiah Kuala Banda Aceh,*  
Indoensia  
*Corresponding author:marthoenis@unsyiah.ac.id*

**Abstract**— This study aims to determine the relapse rate and associated factors among residents attending a drug rehabilitation program in Banda Aceh, Indonesia. The study subjects consisted of 49 program residents who used drugs before admission to the program, and 49 families or caregivers. The median of age was 23 years old (IQR 19 – 27). The median of age when using the drug for the first time was 18 years old (IQR 16 – 21). All the rehabilitation residents were male and Muslim. On average, the residents reported that they had used drugs for approximately 6.3 years, while their family reported an average of 3.2 years ( $t=4.7$ ,  $p = 0.001$ ). Out of 49 ex-users who have had attended a drug rehabilitation program, 12 persons (24.5%) declared that they have relapsed, while the remaining 37 (75.5%) were free from using the drug. This information was also confirmed by their families or caregivers. The finding of a quarter of residents who relapse following the drug rehabilitation program was relevant to the relapse rate reported in other countries. A longer follows up study is suggested to evaluate the success of such detoxification-rehabilitation program in a longer period.

**Keywords:** *relapse rate, rehabilitation, drug addiction*

## I. INTRODUCTION

Among Acehnese Indonesian, there is a long history of cannabis or marijuana use. There are at least two conditions where the cannabis, or locally called “ganja”, being used the most. Ordinary people use ganja seeds as basic cooking ingredients. Meanwhile, Acehnese tobacco farmers grow ganja plants along with tobacco plants, as they believe that ganja plants strengthen the taste of tobacco [1]. Over time, the substance abused has changed. Ganja was once very famous in the province, has recently been replaced by methamphetamine. Most of the methamphetamines are illegally imported from neighboring countries, rather than produced locally such as ganja. In 2016, the Indonesian National Anti-Narcotics Agency – Badan Narkotika Nasional (BNN) identified as many as 53 types of new psychoactive substance (NPS) being used or distributed in Indonesia, citing ganja being the most abused drugs [2].

The 2017 BNN survey on substance abuse in Indonesia suggests that the point prevalence of substance abuse in 2017 was 1.77%, fallen from 2.18% in 2014. Jakarta had the highest prevalence with 3.34% but had reduced from 5.01% in 2014. The prevalence in Aceh was 1.69, reduced from 1.91% in 2014. Furthermore, the lifetime prevalence of

substance abuse was also decreased from 12.8% in 2012 to 9.1% in 2017. Lifetime prevalence was more common among male (12%) than female (4.6%) in 2017. Those who graduate only the secondary school was among the highest group abusing drugs (4.6%), while university graduate was being the lowest (2.5%). Moreover, the higher prevalence was also found among those who live in apartments, have income more than 15 million rupiah per month, those who work in the construction sector, and those who have an irregular job [3]. Apart from BNN, limited study has been conducted regarding substance abuse in Indonesia. It might be due to the fact that drugs are strictly illegal, thus data collection among drug users is challenging.

Relapse following drug rehabilitation is prevalent. A study in Bangladesh found a relapse rate of 71.9% among women and 54.5% among men at 2-month following discharge from a three-month detoxification and rehabilitation treatments [4]. In A developed country of Switzerland, a relapse rate of 80% at 6-month following the discharge, and approximately 75% of relapses took place in the first month [5]. In China, more than half (55.8%) individuals relapsed within 1 year [6], while in Eastern Nepal, as low as 33% relapse rate was reported [7].

People who use drug demand good access to decent quality and affordable detoxification and rehabilitation treatments [4]. However, standardized drug rehabilitation services are barely available in Aceh. There are only two institutions that provided drug rehabilitation treatment in the province, the BNN and Aceh psychiatric hospital. The drug rehabilitation unit of Aceh psychiatric hospital has provided the services since 2010. It can accommodate up to 60 residents in each batch for a period of three to six months duration of detoxification and rehabilitation. Despite this promising approach, there is no study that investigates the achievement of the programs. This study, therefore, aims to investigate the relapse rate and its determinants among residents attending drug detoxification and rehabilitation program in Banda Aceh, Indonesia.

## II. METHODS

Male drug users who had been enrolled in a government-run detoxification and rehabilitation facility in Banda Aceh

were included in this study. During the last two years before data collection of this study, a total of 110 residents had completed a 6-months detoxification and rehabilitation program in that facility. During the rehabilitation, they had to follow some program designed by the hospital to help them with the rehabilitation process. At around six months following the discharge of the last batch, a data collection was conducted by calling the ex-residents and their family. They were asked about their living and working condition, living environment, and whether they had started using drugs (relapse) and if so, what the reason for using the drug again. They also were asked about the expectation following the discharge and whether they obtain good support from their family.

### III.FINDINGS

The mean age of residents was 24.12 years old (SD = 6.3), and the mean of age when used drug for the first time was 17.9 years old (SD = 0.71). Two-third (75.51%) graduated high school and only two residents had university level of education. Before participating in the rehabilitation program, more than half (51.02%) used Amphetamine, and almost half (43.86%) used mixed of amphetamine and cannabis. Only three persons (6.12%) used cannabis only. The median duration of substance abused was five years (IQR: 4-8).

**Table 1. Demographic Characteristic of the Residents**

<b>Variables</b>	<b>n, % or SD</b>
Mean of age	24.12 ± 6.3
Mean of age at onset	17 ± 4.9
Median duration of substance use, y	5 (IQR 4-8)
<b>Type of substance abused</b>	
Cannabis	3 (6.1)
Amphetamine	25 (51.0)
Mixed	21 (42.9)
<b>Education</b>	
Did not attend any education	1 (2.0)
Elementary School	2 (4.1)
Secondary School	7 (14.3)
High School	37 (75.5)
University	2 (4.1)
<b>Currently living with</b>	
Alone	5 (10.2)
Family	34 (69.4)
Shelter	10 (20.4)
<b>Relapse</b>	
Yes	12 (24.49)
No	37 (75.51)
<b>Duration of Rehabilitation</b>	
3 months	5 (10.2)
4 months	1 (2.04)
6 months	39 (79.59)
9 months	4 (8.16)

The majority (79.59%) completed a six-month detoxification and rehabilitation program. Four persons (8.16%) relapsed after first rehabilitation and readmitted for the second three months, making nine months in total. Five persons (10.2%) only attended three months program and one person (2.04%) only attended four months and then requested to quit the program. None of those who attended the three months program relapsed. The person who quit the program at four months relapsed a few weeks following the discharge. Those who attended the six months program, eight were relapsed (20.51%) and those who attend nine months program, only one did not relapse (25%). Following the discharge from the rehabilitation program, most of them live with their families (69.4%), some (20.4%) live in a shelter provided for ex-drug users by a local Non-Government organization (NGO), and only five of them (10.2) live alone.

Furthermore, relapse was associated with the duration of rehabilitation (P = 0.014 – Fisher exact test) and living with whom following the discharge from rehabilitation program (P=0.025, - Fisher exact test) and not with any other variable. Those who live alone had the highest relapse rate (60%), while approximately a quarter (26.5%) who live with family were relapsed. No one of those who stays in a shelter relapsed following the discharge. Concerning the age at first time of drug use, the family confirmed that the residents on average used the drug at the age of 20.6 (SD=5.9), while the residents reported an average of younger age (17.9 years old, SD=4.9) (P = 0.01, t = 2.43). The family also informed the mean duration of drug use was 3.2 years, while the residents reported the mean duration of 6.3 years (P=001, t=4.77).

### IV.DISCUSSION

The finding of approximately 24.4% relapse rate among ex-drug users who had undergone detoxification and rehabilitation program in the present study might be among the lowest compared to the rate reported in previous studies [4]–[8]. This finding also might depict a success output of a drug rehabilitation program in a developing country of Indonesia. A six months program seems to be most preferable because the relapse rate among this group was around 20%. A three months program also shows no relapse, nevertheless, it has a smaller number of participants (five persons), thus more studies are needed to bring the evidence of its efficacy.

Following the discharge from the rehabilitation program, living in a different setting than before can prevent an individual from re-using drug [9]. The fact that living condition following the rehabilitation was associated with relapse in the present study. As many as 60% of those who live alone following the discharge were relapsed. Meanwhile, only 26% of those who live with the family were relapsed. Having a good family and positive social support are protective factors against relapse [9], [10]. In the other hand, lack of familial support, interpersonal conflict and peer pressure can be the ultimate cause of relapse [11]. Adjusting the living environment following the discharge is an important factor that attention should be paid to.

Communication between family and drug user is an important factor that can either induce or prevent relapse. In the present study, the family reported the mean age of 20.6

years old, while the residents reported the age of 17.9 years old, and the difference between them was statistically significant. This means that the family became aware of drug use two years later after the first-time usage. This finding is in line with the fact that lack of communication can shorten the duration of abstinence and reason for relapse [12]. Therefore, maintaining good communication between the family member is significant toward relapse prevention.

This study revealed that among drug users in Indonesia, the abstinence can be reached up to 75%, among the highest that ever been reported. A six-month detoxification and rehabilitation program seem to be promising. However, more studies using the prospective approach are required to examine the relapse rate overtime

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