

# The Factors of the Drug Addict Relapse in Malaysia: The Experts Views and Consensus

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## Abstract

This study aimed to get an agreement and expert views on the factors that lead to drug addict relapse in Malaysia. This study employs Fuzzy Delphi method using a 7 Likert scale to collect responses from 9 experts in various fields in Malaysia. A total of 11-item fuzzy questionnaire was given to experts for evaluation. Fuzzy Delphi Method was used for data analysis. Data were analyzed using triangular fuzzy numbering (triangular fuzzy number) and position (ranking) of each variable is determined using the “defuzzification” process. The findings show that response and expert consensus on factors of drugs relapse in Malaysia are at a good level. The overall findings of the expert consensus agreement exceed 75%, the overall value of the threshold ( $d$ )  $< 0.2$  and a  $\alpha$ -cut exceeds 0.5. The priority factors were sorted by priority and were refined by adding and dropping item as recommended by experts.

## Keywords

Fuzzy Delphi, Drugs, Relaps, Experts Consensus

## 1. Introduction

The issue related to drug use is not a new issue in the world at this point. Malaysia is among the countries affected by drug-related cases. Various initiatives have been implemented by the government to eradicate drug abuse (Azmi et al., 2016). But at this time the way to solve the mass concrete has not been found. The fact that in 1983 the government of Malaysia acknowledged drug misuse as a societal

issue and a threat to national security is strong evidence supporting the first point. Inflicting significant harm on all facets of society and the economy, drug misuse is widely recognised as a major security risk. The government must exert considerable effort if drug problems are to be resolved (Amat, Ahmad, Jaafar, & Zaremohzzabieh, 2020).

Drug addicts frequently experience relapse, which compounds the problem. One of the most challenging aspects of working with recovering addicts is preventing relapse. Since 1975, Malaysia has run treatment and rehabilitation programs to help addicts break free from their drug use (Chie, Tam, Bonn, Wong, Dang, & Khairuddin, 2015). Nonetheless, there is statistical evidence of a dramatic increase in relapse rates. While the number of relapse cases at the Narcotics Recovery and Addiction Centre (PUSPEN) is worrying, the number of new patients admitted each year is rising (Lian & Chu, 2013; Amat et al., 2020). NGOs, the local community, and even the government have all expressed curiosity about what might be causing this occurrence.

Many risk factors lead to relapse or none that helps them keep a drug-free life (Emrick & Beresford, 2016), making it difficult to completely understand the failure of former drug addicts to alter their way of life. In a similar vein, research conducted by (Ibrahim & Kumar, 2009) indicated that even ex-addicts who were surrounded by loving family members nevertheless relapsed. As the research also demonstrates, most addicts don't feel safe talking to their loved ones about their drug use. According to Chie et al. (2015), low self-esteem is a major contributor to a person's propensity to relapse after successfully overcoming an addiction. According to the results of their research, drug users' poor levels of self-esteem play a role in their frequent episodes of relapse. According to (Liu et al., 2017), elder siblings have a significant impact on the decisions and behavior of their younger siblings, which includes their drug usage. There is a stronger propensity for drug abuse among siblings if there is another addicted family member.

## 2. Drug Addict and Its Relation to Relapse

The drug epidemic poses serious dangers to society, neighborhoods, households, and people. The epidemic of substance abuse and addiction has spread over the world, and no nation has yet found a satisfactory solution to the problem, particularly when it comes to relapse. Drug addiction, as described by Nessa, Latif, Siddiqui, Hussain, and Hossain (2008), is a huge worldwide issue that poses serious risks to individuals' health and well-being, as well as to society as a whole, and that typically does not respond to standard methods of treatment. Drugs are not just addictive but also neurotoxic. Possible cognitive impairment leads to trouble keeping one's behaviors under control and a general lack of inhibitions. When someone is hooked, they will do whatever it takes to keep using the drug. That's bad news for addicts, their loved ones, and everyone else in the area (Ahmad, Shah, Sakari, Yusoff, & Suhaimi, 2020).

It is estimated that 5.5% of the global population aged 15 - 64, or around 271 million people, have used drugs (Hurst, 2019). The United Nations Office of Drugs and Crime (2019) estimates that worldwide, about 35 million people are affected by drug misuse, particularly in relapse, and are in need of treatment. In the meantime, there are 17,474 addicts in Malaysia, of which 7793 have relapsed (National Anti-Drug Agency, 2018). Relapse rates between 2014 and 2018 varied, as reported by the National Anti-Drug Agency's (2018) statistics. A total of 8172 relapse cases were recorded in 2014, with that number falling to 6379 in 2015. Statistics from 2016 demonstrate, however, that growth has resumed. Cases of relapse among drug users rose to 7921. Relapses were identified in 7428 patients in 2017, and in 7793 patients in 2018. Drug relapse cases that have not been identified by the agency are also excluded from those numbers. Statistics like these show that the occurrence of relapses in Malaysia is highly variable and cause for concern. If there are instances of relapse among young people, this will continue to be a problem for the country (Ahmad et al., 2020).

Among the many tough challenges that arise during the treatment and recovery of drug users, relapse is one of the most difficult. Relapse is a common problem for addicts undergoing or who have completed drug rehabilitation, treatment, and prevention (Azizul, Jaafar, & Khir, 2018). Furthermore, relapse is both a behavioral and psychological issue that demonstrates the addict's inability to control their need to return to drug usage once recovery has concluded. According to Rasmussen (2000), relapse is caused by persistent stressors including dismissing one's problems, experiencing depression, failing to make adequate plans for one's future, concluding that one's problems are intractable, and poorly responding to a given situation.

Multiple causes of relapse have been identified in previous research. However, the characteristics of self-efficacy, emotional intelligence, and social support are examined in this study to better understand how they can help drug users recover. Various elements, both external and internal, have been linked in numerous studies examining the causes of drug addiction (Marlatt, 1985). Relapse among addicts can be caused by a number of factors, including a lack of self-efficacy, emotional intelligence, and social support, as stated by Marlatt (1985). Self-efficacy (Abdollahi, Taghizadeh, Hamzehgardeshi, & Bahramzad, 2014; Ibrahim, Kumar, & Samah, 2011; Nikmanesh, Baluchi, & Motlagh, 2017; Torrecillas, Cobo, Delgado, & Ucles, 2015), emotional intelligence (Sudraba, Rancans, & Millere, 2012) and social support (Ibrahim & Naresh, 2009; Ibrahim, Zakaria, Nen, Sarnon, & Hassan, 2018) among relapse drug addicts.

Marlatt (1985) argues that boosting the addict's confidence in their ability to stay sober is a crucial step in reducing the likelihood of a relapse. Furthermore, the ability to regulate one's emotions is crucial in preventing drug users from returning to their old habits (Sudraba et al., 2012). Mental well-being is something that emotional acuity can help supply. Moreover, Flynn (2005) says that it's tough for ex-addicts to reintegrate into society as productive, healthy people without some type of social support. Moreover, because addiction is a disease, it

requires even more help than other types of illness (Nikmanesh et al., 2017). Recovering addicts require the love and encouragement of friends, family, and the community. Therefore, based on the amount of literature presented above, some factors are identified as factors that cause drug relapse. However, in this study, we will verify this factor based on expert opinion and consensus. Specialists are skilled and know in depth the factors related to drug relapse, here the researcher tries to get confirmation whether the factors emphasized in the literature are in accordance with the real context they are going through and in the knowledge of the experts involved.

#### **Research Objectives:**

Based on the issues discussed, this study aims to solve the following objectives:

- The study aims to see the factors that cause drug relapse among addicts in Malaysia based on experts view & consensus.

### **3. Methodology**

The Fuzzy Delphi method was used to confirm the variables that contribute to drug relapse in this investigation. Fuzzy delphi technique It is a hybrid of the classic Delphi method and the Fuzzy set theory, and it has been widely used in many different types of research. This method is particularly useful when the depth of the study necessitates consensus from a panel of specialists. In addition, the Fuzzy Delphi procedure is an appealing method for reaching a group conclusion on hazy concepts through the consensus of selected experts (Jani et al., 2018). In contrast to the classic Delphi method, which involves an endless number of assessment rounds until consensus among experts is reached, the new Fuzzy Delphi has the benefit of receiving responses in less time and at lesser expense, thus boosting the total number of survey responses. Experts' honest reactions can be interpreted without any distortion, guaranteeing fullness and uniformity of view (Noh et al., 2013). Since the Fuzzy Delphi approach has some advantages over the traditional Delphi technique, it was chosen as the primary review technique in this investigation. If the Delphi technique and process of interviewing individuals is not feasible owing to time limits and group composition, an expert questionnaire is a very good instrument that is valuable in the process of data collecting (Dalkey & Helmer, 1963).

#### **3.1. Fuzzy Delphi Method**

Since its inception by Dalkey and Helmer, the Delphi Method (DM) has undergone a number of iterations of improvement (Dalkey & Helmer, 1963). The Fuzzy Delphi Method (FDM), on the other hand, is an enhanced and more comprehensive variation of the classic Delphi procedure. The Delphi approach differs from FDM in that it employs probability theory rather than mathematical concepts to address fuzziness in the decision-making process. Therefore, Fuzzy DM (FDM) has been proposed based on the merging of fuzzy theory and conventional DM to account for individuals' linguistic preferences in the deci-

sion-making procedure (Hsu, Lee, & Kreng, 2010).

As an alternative, the FDM was developed by combining fuzzy theory and conventional DM. The research of Kaufmann and Gupta (1988) is considered one of the early publications on the use of FDM in forecasting, and the idea of combining classical DM and fuzzy theory to address the latter's imprecision was first put forth by (Murray, Pipino, & Gigch, 1985; Mustapha & Darusalam, 2022). The theory was developed further to incorporate FDM, as well as the max-min and fuzzy integration algorithms, in anticipation of the development of computers (Ishikawa, Amagasa, Shiga, Tomizawa, Tatsuta, & Mieno, 1993; Mustapha & Darusalam, 2022). To further emphasise the variety in expert knowledge and skill, weights were incorporated into the FDM version (Garai, 2013). A new fuzzy statistics-based variant of FDM that fits the continuous mathematically explicit membership functions can stabilise the iterative process (Chang, Hsu, & Chang, 2011).

Step in Fuzzy Delphi Method:

1) Selecting an Appropriate Expert: Seven Professionals Were Involved In This Investigation. For the purpose of establishing the weight given to the assessment criteria by the factors under consideration, an expert panel was assembled to analyse the value of linguistic variables.

2) The use of fuzzy triangular numbers to represent all linguistic elements in the deciding process (triangular fuzzy numbers). To this point, fuzzy numbers have also been incorporated into linguistic variables (Hsieh, Lu, & Tzeng, 2004). M1, M2, and M3 are each represented by a triangle fuzzy number (m1, m2, m3). Minimum (m1) represents the very lowest possible value, while maximum (m3) represents the highest possible value. The Fuzzy Scale, constructed from triangular fuzzy numbers, is then used to transform the original linguistic variables into fuzzy numbers (Figure 1).

3) In order to determine linguistic variables and average responses, the researcher must first convert all Likert scales to fuzzy scales after receiving a response from the chosen specialist. As a result, we are taking an overall average of all fuzzy numbers' opinions (Benitez, Martin, & Roman, 2007).

4) How to determine the value of "d" when it's absolutely crucial In order to determine the level of agreement among specialists, it is crucial to establish a cutoff value (Thomaidis, Nikitakos, & Dounias, 2006). Using the following formulas, you can determine the distance between two fuzzy numbers (Figure 2):

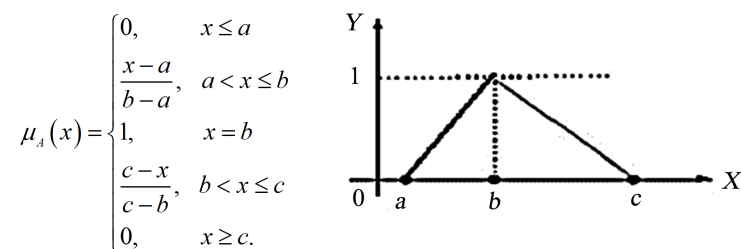


Figure 1. Triangular fuzzy number.

$$d(\bar{m}, \bar{n}) = \sqrt{\frac{1}{2} \left[ (m1 - n1)^2 + (m2 - n2)^2 + (m3 - n3)^2 \right]}$$

**Figure 2.** Fuzzy Delphi's range formula.

5) Figure out the alpha value needed for fuzzy summing: When all the experts settle on a vague rating for each item (Mustapha & Darusalam, 2018). The following equation is used to determine and calculate fuzzy values: Maximum available area =  $(4m1 + (2m2)m3)$

6) The defuzzification procedure makes use of the formula  $A_{max} = (1/4)(a1 + 2a2 + a3)$ . A score between 0 and 1 can be obtained using Average Fuzzy Numbers, or by averaging participants' responses (Mustapha & Darusalam, 2022). This method relies on three equations:

7) There are three different formulae for A:  $A = 1/3(m1 + m2 + m3)$ ,  $A = 1/4(m1 + 2m2 + m3)$ , and  $A = 1/6(m1 + 4m2 + m3)$ . In this case, we'll round up to one and claim that the median value of a shave is zero, making (-cut) equal to  $(0 + 1)/(22)$ , or half a dollar. Items with an A value lower than the -cut value = 0.5 are deemed to have insufficient expert consensus and are therefore rejected. Bodjanova (2006) suggests a higher alpha cut-value than 0.5 is necessary (Figure 3).

8) Prioritization is performed using a ranking system in which elements are chosen based on defuzzification values established through consensus amongst experts, with the item with the greatest value being granted the most prominent position (Fortemps & Roubens, 1996).

### 3.2. Sampling

In this analysis, we employ a method called "purposive sampling." If a researcher wants to get a certain kind of consensus from experts, then this is the right approach to take. According to Keeney, Hasson, and McKenna (2000), the Fuzzy Delphi Method is best implemented with a purposeful sampling strategy. There were further nine specialists involved in this investigation. Table 1 displays the participants who have given their permission to be included. These specialists were selected because of their expertise and credentials. This analysis requires a group of five to ten experts, with the precise number dependent on the nature of the problems being solved. There is usually a group of 10 - 15 specialists involved in a Delphi process (Adler & Ziglio, 1996). For this reason, 9 experts were consulted for the purposes of item validation and Fuzzy Delphi analysis.

#### Expert Criteria

Booker and McNamara (2004) state that experts are those who have put in the time and effort to attain the appropriate levels of education, training, experience, professional association, and peer endorsement (Nikolopoulos, 2004; Perera et al., 2012). The term "expert" refers to a person who possesses in-depth knowledge and experience in a specific area of study or work (Cantrill, Sibbald, &

$$x^* = \frac{\sum_{i=1}^n x_i \mu(x_i)}{\sum_{i=1}^n \mu(x_i)}$$

**Figure 3.** Defuzzification formula.**Table 1.** List of expert.

	Expert	Number of Experts	Field of Specialist
1	Senior Lecturer	4	Psychology
2	Councillor	3	Counselling
3	Care & Cure officer	2	Counselling/Drug rehabilitation center officer

Buetow, 1996; Mullen, 2003). Choosing experts is a major factor in Fuzzy Delphi studies. Experts should be chosen carefully and based on criteria to ensure the study's legitimacy, validity, and reliability are not compromised (Mustapha & Darusalam, 2018). Kaynak and Macauley (1984) state that the researchers and professionals involved must either represent or have a good grasp of the topic area. Experts are chosen by the researcher based on stringent criteria, such as seven years of experience and appropriate expertise and experience level for the study.

### 3.3. Instrumentation

The researcher read up on related materials to help develop the Fuzzy Delphi research tool. Researchers can build questionnaire items using prior research, small-scale experiments, and their own experiences (Skulmoski et al., 2007). This is why the Fuzzy Delphi technique's question development relied heavily on scholarly literature, in-depth interviews, and group discussions (Mustapha & Darussalam, 2018). Okoli and Pawlowski (2004) state that a literature evaluation and data collecting should precede the creation of study items and content. In the context of this study, the researcher highlights the literature and suggests an alliance to form elements/factors related to this study. After then, questions for experts are compiled fuzzy scale using a 7-point scale. As more scales were employed, the results became more exact and accurate, therefore a 7-point scale was adopted (Chen & Chen 2014). Table 2 shows how the researcher swapped out the fuzzy value for a scale value (between 1 and 7) to make it easier for experts to fill out the questionnaire.

### 3.4. Sampling Procedure

This study uses the FDM technique by applying a sampling technique that is specific to this technique. A total of 7 experts were involved in this phase. Experts are selected according to the criteria of qualified experts to carry out FDM

procedures. This study specifically uses a purposive sampling method. This strategy is most appropriate when the researcher wants to reach consensus on an issue. Purposive sampling is the most acceptable strategy according to FDM (Keeney et al., 2000). Meanwhile, this investigation has enlisted the help of 9 experts. These experts have been selected based on their knowledge and skills in their respective industries. If the experts involved in this investigation are homogeneous, then the required number of specialists is 5 - 10. According to Adler and Ziglio (1996), the appropriate number of experts in the Delphi technique, assuming a level of homogeneity, is between 10 and 15 people (homogeneous).

Based on the following **Table 3**, the researcher lists the factors that cause drug relapse based on the highlights of the literature and expert views.

#### 4. Findings

In this section, we will present the results of the analysis that has been carried out and explain it in detail in the next section. The findings of Fuzzy Delphi analysis (FUDELO) are as follows:

**Table 2.** Fuzzy scale.

Item	Fuzzy Scale
Strongly disagree	(0.0, 0.0, 0.1)
Disagree	(0.0, 0.1, 0.3)
Somewhat Disagree	(0.1, 0.3, 0.5)
Neutral	(0.3, 0.5, 0.7)
Somewhat agree	(0.5, 0.7, 0.9)
Agree	(0.7, 0.9, 1.0)
Strongly agree	(0.9, 1.0, 1.0)

**Table 3.** Factors contribute to drug relaps.

No	Items/factors
1	Lack of willpower
2	Family factor
3	Lack of religious knowledge and practice
4	Anger and resentment
5	Rejection from the community
6	Income factor
7	Boredom
8	emotional intelligence
9	lack of self-efficacy
10	Lack of social support
11	Social Media influence



The data (see **Table 4**) show that the bold threshold value is greater than the threshold value 0.2 (>0.2). This means that there is a lack of uniformity or consensus among the experts on a number of issues.

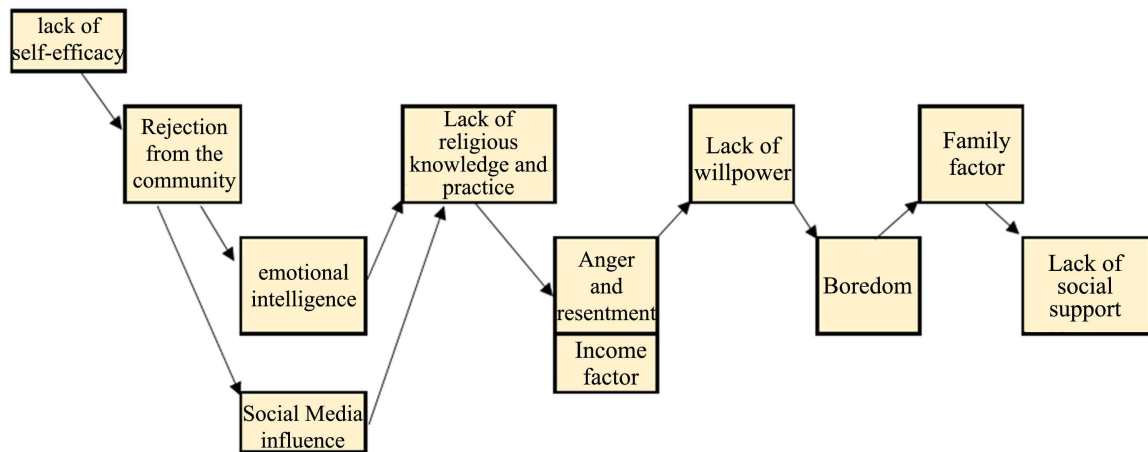
However, a value of (d) < 0.2, or 0.070, is shown by the average of all drug relaps factors. Expert agreement is considered to be high if the item’s mean threshold (d) value is less than 0.2 (Chen, 2002; Chang, Hsu, & Chang, 2011). At the same time, the total percentage of experts who agree stands at 96%, which is higher than (>75%) the threshold for satisfying expert agreement on this matter. Further, all values for Alpha-Cut defuzzification (mean of fuzzy response) are greater than -cut ≥ 0.5. In accordance with the recommendations of (Wu & Tang, 2014; Bodjanova, 2006), the alpha cut value should be greater than 0.5. The results of this study demonstrate that there is widespread consensus amongst experts on the drug addict relap factors. Experts have come to a consensus on a list of things, and those things have been ranked in order of importance (**Table 5** and **Figure 4**).

**Table 4.** The fuzzy analysis result.

Results	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
Expert 1	0.038	0.045	0.026	0.032	0.013	0.083	0.180	0.096	0.019	0.026	0.077
Expert 2	0.038	0.071	0.026	0.032	0.218	0.032	0.051	0.019	0.038	0.090	0.096
Expert 3	0.096	0.276	0.205	0.032	0.071	0.090	0.051	0.077	0.135	0.148	0.096
Expert 4	0.038	0.128	0.026	0.090	0.071	0.083	0.064	0.019	0.038	0.026	0.077
Expert 5	0.192	0.071	0.083	0.083	0.071	0.032	0.109	0.096	0.038	0.141	0.019
Expert 6	0.038	0.071	0.083	0.032	0.071	0.199	0.051	0.019	0.019	0.026	0.019
Expert 7	0.096	0.045	0.026	0.032	0.013	0.090	0.064	0.019	0.038	0.148	0.096
Expert 8	0.038	0.071	0.026	0.083	0.103	0.090	0.109	0.019	0.019	0.141	0.077
Expert 9	0.192	0.045	0.090	0.083	0.013	0.032	0.064	0.019	0.038	0.026	0.019

**Table 5.** Defuzzification result.

Statistics	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
<b>Value of the item</b>	0.08553	0.09124	0.06558	0.0556	0.07128	0.08126	0.08268	0.04277	0.04277	0.08553	0.06415
<b>Value of “d” the construct</b>	0.070										
<b>Item &lt; 0.2</b>	9	8	8	9	8	9	9	9	9	9	9
<b>% of item &lt; 0.2</b>	100%	88%	88%	100%	88%	100%	100%	100%	100%	100%	100%
<b>Average of % consensus</b>	96%										
<b>Defuzzification</b>	0.83333	0.77778	0.85556	0.84444	0.87778	0.84444	0.81111	0.86667	0.93333	0.74444	0.86667
<b>Ranking</b>	6	8	4	5	2	5	7	3	1	9	3
<b>Status</b>	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept



**Figure 4.** Ranking priority of the drug relap factors.

## 5. Discussion and Conclusion

The issue of drugs affects people all over the world. The quantity and variety of drugs being manufactured are on the rise. Prevalent interest lends credence to this theory. The fight against drugs has been hampered by a shift in international politics that followed the end of the cold war between the world's superpowers. This is because there is a widespread belief that national boundaries no longer exist and that people are free to travel freely throughout the world. Advanced methods of communication and transportation ease their travel. Those partaking in drug activity likely saw this type of operation coming as it became more professionalised and commonplace. Most authorities are more focused on punishing and rehabilitating drug addicts, but the aspect of observing the aspects that lead to repeated addiction is still minimal. Therefore, this study mainly focuses on identifying the dominant factors affecting repeat addicts.

Based on the researcher's study, we found that the main aspect is the lack of self-efficacy, followed by rejection from the community. These two factors are ranked as the most important cause of repeated or relaps of drug addiction. In addition, the aspect of emotional intelligence and social influence also leads to the main factor in repeated abuse. The factors of lack of religious knowledge, Anger and resentment, income factor and lock of power are factors that are in the middle ranking. Even so, this factor is seen as important in leading to repeated addictions. In addition, aspects such as boredom, family factor and lack of social support are the last factors in the priority ranking of factors that lead to addiction in drug addiction.

In particular, we conclude that comprehensive special attention needs to be done by the authorities and interested parties in eradicating this drug relapse problem. The findings of this study may be a guide and initiative that can be played by certain parties when the aspects that lead to relapse are known. Preventive measures and special attention need to be taken into account and emphasised, fix what is necessary, improve the parts that are lacking and mobilize a special task force to deal with this problem.

## 6. Future Research

Based on the importance of this study on drug relapse, some recommendations are suggested by the researcher for future studies. First, future researchers may examine and explore this in more detail to see this phenomenon more deeply. Studies such as qualitative and explanatory research can be implemented. Second, future researchers may be able to build specific modules or assistance programs to raise awareness among the target group. Thirdly, aspects such as religiosity, media effect and self-awareness can be used as subjects of study in the future. This study is also able to bring practical or theoretical implications. Based on this study, maybe the authorities can take concrete steps in solving this problem. Measures such as mobilizing awareness projects in the community such as awareness campaigns in social media considering that social media is the main medium at the moment. The results of information presented in social media may be able to raise awareness in the community. In addition, the authorities can cooperate with certain NGOs to create awareness programs in the community; this will have more impact on dealing with this problem.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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