

Validity and Reliability Test for Suicidal Ideation Behaviour Instrument for Drug Addicts

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Abstract: Suicidal ideation behaviour is a subjective mental health problem. However, there are some studies related to suicidal behaviour based on the conceptual framework by other researchers. Early detection of suicidal intent among addicts is important to ensure they do not take further action that could result in death. This study was conducted to component an instrument of suicidal ideation behaviour among drug addicts to track the level of suicidal intentions. This psychometric instrument is built based on the situation in Malaysia. The instrument of suicidal behaviour is based on four component namely interpersonal conflict, emotional disorder, depression and hopelessness. Exploratory Factor Analysis (EFA) is used to analyse the validity and Cronbach's alpha for use reliability test of each item. In terms of the validity of the items used, the value of the loading factor obtained is 0.450-0.895. This value range indicates that this item is acceptable and suitable for the instrument. The result showed significant consequences for developing suicidal ideation behaviour among drug addicts. The results showed that the SIBA instrument had a high Cronbach's Alpha value of 0.858 (interpersonal conflict) 0.858 (emotional disorder), 0.831 (depression) and 0.895 (hopelessness). The results of this study clearly show that the instrument has a high reliability and thus can be used in assessing suicidal ideation behaviour among drug addicts. In conclusion, this study can show that the component instrument can be used to measure the level of suicidal behaviour among drug addicts who are undergoing treatment at the rehabilitation centre.

Keywords: suicidal behaviour, conflict interpersonal, emotional disorder, depression, hopelessness.

I. INTRODUCTION

Suicide ideation is a deliberate act of causing one's own death. Approximately 90% of all suicides meet the diagnostic criteria for one or more psychiatric disorders [1]. According to World Health Organization (WHO) shows that the world's highest suicide rate is 16 per 100,000 people, meaning that every year more than one million people worldwide bow down. Suicide attempts are five to twenty times more common than completed suicides ([2] [3]). According to data from the research community, about 5% adults commit suicide at least once in a lifetime [4].

In 2012, the world's population ranging from 15 to 64 years old (324 million people) contributed 3.50% to 7.00% of the world's population that take a once-in-a-lifetime drug. As a result, there are 16 to 39 million drug users and 183,000 drug-related deaths in health [5]. In addition, male and female suicidal behaviour are nearly six times as high as that of non-

drug addicts. However, the number of suicide cases among male addicts is 2 to 3 times higher than non-addicts [6]. Suicide attempts mean a higher risk for victims to repeat failed attempts [7].

Various factors influence suicidal behaviour including mental disorders such as interpersonal conflict, emotional disorder, depression and hopelessness. However, in most cases of suicide among the addicts, the victim is either due to drug abuse or excessive use of the drug that causes them to be exposed to the suicide ([8] [9]). Although there is a link between the drug caused by the use of the substance drug, most addicts will not attempt suicide. Therefore, it is important to identify these individuals with these disorders caused by the use of substances that may be at high risk for suicide ([10] [11]). As a result, older drug addicts are at a higher risk for suicide attempts compared to teenager who misused drugs ([12] [13]). Thus, suicidal ideation is more damaging because discussions and strategies of addressing suicide issues are rarely carried out publicly. Over the past few years, suicide rates have risen to the point that social problems are threatening the country. However, behavioural intention to commit suicide leads to a death caused by behaviours that endanger oneself with the intent to die [14]. Suicide is thought as a solution to the problem for the addicts. The use of drugs can further the suicidal behaviour among the addicts.

II. LITERATURE REVIEW

Based on above definitions, the Suicide Ideation Behaviour Assessment (SIBA) component following is: some of the component that determine for suicide ideation behaviour is conflict interpersonal. Conflict interpersonal which type of conflict occurs when there are disagreements, objections, inconsistencies, interruptions and negative emotions when interacting with others ([16] ([17] [18])). It basically revolves around relationships between individuals and others. This includes how individuals manage their behaviour, thoughts and emotions when interacting with themselves or the people around them. In addition, suicidal tendencies are caused by stressful interpersonal conflicts and events ([16] ([17] [18])). However, it is also associated with the addicts' quality of life, for instance the addicts often feel that they are not as good as others in the community and family due to their internal problems [19]. Thus, these interpersonal conflicts increase the risk of suicide and result in self-harm ([20] [21] [22]).

Moreover, if the drug addicts have an interpersonal conflict, they experience a level of disturbance and emotional problems. Skills in controlling emotion can be a protective factor in avoiding risky behaviour, especially when using drugs. If the individual is able to understand and overcome their emotion then, it can reduce suicidal behaviour. Therefore, the individuals (especially the addicts) who managed to deal with emotional problems could protect themselves from suicidal behaviour. Suicide can be overcome by using the best methods of controlling emotion ([23] [24] [25]). The use of illegal drugs and symptoms of depression play a role in suicidal ideation. The researchers concluded that statistically significant drug use was associated with poorer suicide. It is hypothesized that this may be due to the attempts to eliminate unstable emotions through the use of drugs, thus not causing them to consider or even attempting suicide [26].

When an addict experiences problem such as stress, the addict experiences a state of depression [27]. Depression is dangerous because it negatively affects emotional health. In a study by [28] in identifying possible risk factors that led to suicide, the researchers found that among those suffering from depression, the addicts were more likely to attempt suicide. Previous suicide attempts represent a strong risk factor for repeated suicide attempts. [29]. Affective disorders in general, depressed mood to be more specific, are the risk factors for suicide in general and among the addicts ([4] [12] [13]). Another very important fact when it comes to suicide is the drug used. It is known that heroin and sedatives are the most commonly used in suicide attempts, while other drugs are less common [13]. Suicidal addicts tend to have certain emotional and behavioural problems that greatly influence their activities, such as impulsive reaction and inability to control behaviour [30].

Individuals with depression eventually experience severe depression that results in suicidal thoughts [31]. They become pessimistic whenever they think of their future because of the suicidal tendencies ([32] [33]). To put it simply, hopelessness is the extent to which it influences individuals to believe that they have a dark and gloomy future. Male drug users in treatment at the Psychosocial Support Centre (CAPS) have reported drug use as a motivation for suicidal behaviour. They also cite a relationship between hopelessness with resilience and the intention to end their own lives to stop the discomfort of people around them including their families. By hurting themselves and losing their lives, they will no longer be persecuted by those around them ([34] [35]). In this context, we emphasise on the importance of health care for individuals involved in drugs. Those who promote community health and professionals who deal directly with the demands of health services have a great responsibility in identifying risky situations, particularly in relation to drug addiction and abuse and suicidal behaviour regardless of health care level to avoid loss of lives. In conclusion, suicide attempts among the drug addicts give an impression of suicide intention. Therefore, precautions should be taken to help them from doing so.

III. METHODOLOGY

This cross-sectional validation study was performed in Cure & Care Rehabilitation Centre (CCRC), Besut of Malaysia from Jun to September 2019. The inclusion criteria were the addicted people referred to addiction treatment occupation and consent to participate in the study. At least, they used a type of drug. The exclusion criteria included did not agree to participate in the study. Participants were selected using a multistage random sampling method. All participants agreed to complete the questionnaires. Informed assent and consent were obtained from participants. The study was conducted with approval from Director of CCRC, Besut. Data collection methods were based on anonymous questionnaires completed by the participants, and also among the illiterate people. This study uses samples selected from age 25 and above at CCRC. Study respondents were determined from previous studies that had been researched by previous researchers on suicidal ideation behaviour. The survey respondents for this study consisted of (N = 123) respondents and only (N = 40) study respondents were involved in the pilot study conducted. Sample sizes were selected based on rules in determining sample sizes indicating that sample sizes greater than 30 and less than 500 were appropriate for most researchers.

The researchers explain that the SIBA instrument used in this study is quantitative and the instruments developed are organized based on various suicides theories. These instruments had already gone through several processes of content validity, such as determining the definition of its content component items component and subject matter on experts from the related research field as suggested by [36]. The questionnaire was constructed in Bahasa and was build four component which's conflict interpersonal, emotional disorder, depression and hopelessness.

This suicidal behaviour tool had 40 items. This survey used 4 Likert scales with the respondents expressing their consent to the statement of inventory in the self-determination questionnaire. In addition, other scales were used to measure aspects of knowledge that the respondents would choose from most disagree (strongly disagree), disagree (disagree), agree (agree) and most agree (strongly agree). 40 questions were included in the instrument. It is important to note that, the questionnaire presented to the participants was in Malay language. This is due to the fact that the respondents to this survey are those who understand the Malay language. Therefore, it will help them comprehend the questionnaire instruction more easily. The current study selected its respondents based on non-probability, convenience sampling. This method is selected due to the fact that each case in the population does not have the known probabilities to be included in the sample, and sample representation may be compromised [37].

The instrument of suicidal ideation behaviour was developed based on various suicides theories. This research aimed to introduce measurable suicidal behaviour to individuals. It was

developed from several major buildings related to suicidal behaviour. For the first component which is interpersonal conflict, it emphasizes on the negative feelings of the other person and the negative feelings of the other person. Then, each component consisted of 10 items. The second component is emotional disorder, in which one has a restless and frustrated behaviour. Similarly, there are 10 items for each component. In addition, the depression component also has 10 items and the other component is the hopelessness aspect that also contains 10 items to build. The total number for the questions is 40 items that act as contributors to analyse suicidal behaviour among addicts. The instrument investigated the aspects of interpersonal conflict, emotional disorder, depression and hopelessness that may lead to suicidal behaviour. This instrument is somewhat different from the other suicide instruments as it focuses more on suicide among the drug users.

Prior to the data collection process, the content validity assessment process was an integral step in measuring how well an item was developed and is important in measuring the component in this questionnaire. Content validation methods had helped the researchers to conduct a pilot study while developing the inventory of suicidal behaviour. It helps in selecting items to be stored in the procedure and development test. A pilot study helps to increase and strengthen the credibility of the researcher's findings in determining the reliability of instruments [38]. The instrument reliability is important in a research since it functions as a measurement for the consistency of an item in a component. The optimum value is 1.00, thus the nearest value means that the instrument has high reliability. Table 5 presents the analysis of the pilot study showing the Cronbach's Alpha reliability scores for the four component of suicide risk assessment ranged from 0.831 to 0.895. Based on the obtained value, it is proven that the Suicide Ideation Behaviour Assessment (SIBA) has high reliability and justify that the instrument items are valid and reliable.

IV. RESULT

4.1 Validity of Language Experts

This study involved all professionals who are directly involved in the field and work in the field [39]. This is because, according to [40], among the things that should be considered in the selection of expert panels is depending on the area of expertise, the number of publications and also work experience. In this study, the oldest period was 30 years while the shortest experience of the panel of experts in this field was 13 years. therefore, the Researcher has met with all the experts who have been appointed by explaining about the background of the study, the definition of operations and also the components that have been done by the researcher. the expert panel has also prepared all relevant documents for evaluation purposes whether in the form of comments, corrections or suggestions. The validity of the instrument consists of four components, namely interpersonal conflict,

emotional disorder, depression and hopelessness that have produced a questionnaire consisting of 40 items. therefore, this questionnaire was modified from a questionnaire created by the previous researcher. Confirmation of each of these components and items was confirmed by several experts including Professor, Associate Professor and lecturer from Universiti Sultan Zainal Abidin (UniSZA), Universiti Malaysia Terengganu (UMT), and Universiti Pendidikan Sultan Idris (UPSI).

4.2 Content validity (Exploratory Factor Analysis (EFA))

Validation analysis was performed using Exploratory Factor Analysis (EFA). EFA is a statistical procedure used to study the basic factors of each variable in the study. EFA was performed to determine the dimensionality of the questionnaire using the principal component analysis with varimax rotation. Factor loading values of 0.3 or higher were considered acceptable and showed that there was an important relationship between items and factors [41].

Furthermore, Kaiser-Meyer-Olkin (KMO) was used to measure and determine the adequacy of the samples given in SPSS [42]. According to ([43] [44]), the KMO value is 0.6 while [45] suggested the acceptance value on 0.6 and above. However, KMO values between 0.5 and 0.7 are considered "moderate", 0.7 and 0.8 are "good", 0.8 and 0.9 are large and values between 0.9 and above are "very good". The criteria used to determine the subscales (factors) were minimum Eigenvalues >1.00 (Kaiser Criterion) [46].

1) Interpersonal Conflict

The table below shows the analysis results of interpersonal factors. In this study, it can be seen that the KMO measurement for interpersonal conflict is 0.843, thus reflecting the excellent adequacy, which is appropriate for the factor analysis. Additionally, the Sphericity Bartlett test value can be seen as 477.163 with the same value represented at 0.000 is within acceptable range. This indicates that the KMO measurement and Bartlett's test of Sphericity results indicated that the items used in the interpersonal convection measurement are in line with the standard factor analysis. Therefore, items in the interpersonal conflict had a rotational factor in between .450 and .811 indicating that the second item was significantly related.

Table 1: Number of Factor Analysis Conflict Interpersonal

| Item | Component 1 | Component 2 |
|---------|-------------|-------------|
| Item 7 | .811 | |
| Item 9 | .808 | |
| Item 10 | .792 | |
| Item 5 | .698 | |
| Item 8 | .644 | |
| Item 1 | | .804 |
| Item 3 | | .777 |

| | | |
|--|--|---------|
| Item 4 | | .703 |
| Item 2 | | .504 |
| Item 6 | | .450 |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .843 |
| Bartlett's Test of Sphericity Approx. Chi-Square | | 477.163 |
| Df | | 45 |
| Sig. | | .000 |

2) *Emotional Disorder*

The table 2 shows the analysis of factors related to the component of emotional disorders. From the table below, it is known that the Kaiser-Meyer-Olkin (KMO) value is 0.834, which shows good reliability as suggested by [45].

Furthermore, it can continue the analysis of the proposed factors. The Bartlett Sphericity Test value is 459.479 while the mean value is 0.000. Additionally, emotional distress items can be observed to have a rotational factor of 0.489 and 0.864. Therefore, this analysis is acceptable for factor analysis [47].

Table 2: Number of Factor Analysis Emotional Disorder

| Item | Component 1 | Component 2 |
|--|-------------|-------------|
| Item 6 | .827 | |
| Item 7 | .761 | |
| Item 5 | .711 | |
| Item 2 | .673 | |
| Item 1 | .580 | |
| Item 3 | .489 | |
| Item 9 | | .864 |
| Item 10 | | .813 |
| Item 8 | | .685 |
| Item 4 | | .512 |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.834 |
| Bartlett's Test of Sphericity Approx. Chi-Square | | 459.479 |
| Df | | 45 |
| Sig. | | .000 |

3) *Depression*

The table 3 shows the analysis results related to depression, the analysis shows that the KMO value is .752, which shows good value. In addition, the Bartlett Sphericity Test value is 210.464 with a low value of 0.000. Simultaneously, it shows that the KMO measurement and Bartlett's test of sphericity results show that the results used in depression are in accordance with the standardised factor analysis standard. Therefore, the rotation factor value is between 0.487 and 0.872 as suggested by [49]. It suggests that the item correlates

significantly with the factor itself alongside the factor of rotation.

Table 3: Number of Factor Analysis Depression

| Item | Component 1 | Component 2 | Component 3 |
|--|-------------|-------------|-------------|
| Item 1 | | | .699 |
| Item 2 | | | .793 |
| Item 3 | | | .700 |
| Item 4 | | .820 | |
| Item 5 | | .872 | |
| Item 6 | | .487 | |
| Item 7 | .821 | | |
| Item 8 | .740 | | |
| Item 9 | .768 | | |
| Item 10 | .796 | | |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | | .752 |
| Bartlett's Test of Sphericity Approx. Chi-Square | | | 458.721 |
| Df | | | 45 |
| Sig. | | | .000 |

4) *Hopelessness*

The table 4 shows the analysis of factors related to hopelessness. The table below shows that the Kaiser-Meyer-Olkin (KMO) value is 0.894, which shows good values as suggested by [45]. In addition, it can continue the analysis of the factors involved. The Bartlett Sphericity Test value is 794.061 while the mean value is 0.000. Furthermore, the hopelessness item can be observed having a rotational factor of 0.605 and 0.869. Therefore, this analysis is acceptable for factor analysis [47].

Table 4: Number of Factor Analysis Hopelessness

| Item | Component 1 | Component 2 |
|--|-------------|-------------|
| Item 1 | .605 | |
| Item 2 | | .730 |
| Item 3 | | .852 |
| Item 4 | | .687 |
| Item 5 | .760 | |
| Item 6 | .861 | |
| Item 7 | .791 | |
| Item 8 | .774 | |
| Item 9 | .759 | |
| Item 10 | .869 | |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .894 |
| Bartlett's Test of Sphericity Approx. Chi-Square | | 794.061 |
| Df | | 45 |
| Sig. | | .000 |

4.3 Phase of Reliability

Reliability analysis was performed using Cronbach Alpha. Cronbach Alpha values above 0.60 are often used as instrument reliability index ([48] [49] [50]). Therefore, Cronbach Alpha value of 0.60 to 0.80 is acceptable while value above 0.80 is considered good and a reliability value of less than 0.60 is considered low. therefore, the authors used the Cronbach Alpha value to determine the reliability of the questionnaire [51]. Table 5 presents the analysis of the pilot study showing the Cronbach's Alpha reliability scores for the four components of suicide risk assessment ranged from 0.831 to 0.895. Based on the obtained value, it is proven that the Suicide Ideation Behaviour Assessment (SIBA) has high reliability and justify that the instrument items are valid and reliable.

Table 5: The Results of Reliability Obtained from Cronbach's Alpha Coefficient

| Component | Cronbach's Alpha Coefficient |
|------------------------|------------------------------|
| Conflict Interpersonal | 0.858 |
| Emotional Disorder | 0.858 |
| Depression | 0.831 |
| Hopelessness | 0.895 |

V. CONCLUSION

As mentioned before, some of the elements that have been discussed are relevant to the intent of suicide behaviour. However, these aspects can also lead to suicidal behaviour among the addicts. Therefore, for future research, researchers should learn more ways to help the responsible person in identifying the characteristics of future suicidal behaviours. Besides, this study is also used to assist the responsible party in assessing the behaviour of other researchers. The results of this study had confirmed the validity and reliability of Suicide Ideation Behaviour Assessment and proven that this instrument is a useful and a suitable tool in assessing suicide intention behaviour. However, an extensive research is needed to further refine this instrument by involving different traits of the respondents to establish more credible measures when assessing suicide ideation behaviour.

VI. RECOMMENDATION

Future studies may explore suicidal behaviour from a broader perspective with a combination of theories from various theories related to suicidal behaviour or a comparison of existing or domestic theories. It is suggested that, this combination will provide a much more reliable findings than those found in this study. This study is quantitative, it is proposed for future research that will be conducted to explore the behaviour of a qualitative suicide attempt for a deeper understanding of suicide from the respondents' perspective rather than a quantitative form of structured tool.

Therefore, the use of mixed methods is encouraged to be adapted in future research by researchers to examine suicidal behaviour in a more meaningful way than applying a method that can be categorized as limiting which its importance is emphasized in the previous literature. This study proposed the use of a sample associated with the study of sample selection among drug addicts at a rehabilitation centre in Malaysia to obtain more accurate findings than those in the current study for generalization purposes. This proposed study could be one of the nation representatives in the study of suicidal behaviour among drug addicts. It is suggested that these instruments of suicidal behaviour should be demonstrated across different populations. Further longitudinal studies need to be conducted on suicidal behaviour to analyse possible critical periods for the development of understanding suicidal behaviour in humans.

The current study highlighted the instrumentation of suicidal behaviour and its validity, without clinically significant findings in suicidal behaviour. Further investigation is encouraged to draw out possible effects of suicidal behaviour in relation to the subjective suicide related to the behaviour. In addition, this study focused on male addicts only, so future studies could be conducted on female addicts or comparisons of both genders.

Consequently, efforts should be made by all parties such as the government or any private agencies, counsellors, social workers and other areas responsible in ensuring and helping to combat suicide among the drug addicts. Therefore, it can help ensuring that those individuals with suicidal behaviour would receive appropriate help and treatment.

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