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Reliability and Validity of ACREDA Drug-Related Locus of Control Scale

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Abstract: There are a huge number of drug abusers grappling with recovery process and it reflects that individuals hold a great deal with the difficult circumstances, thus necessitating the vast range of literatures on the study of humans' locus of control academically. However, the instruments for measuring it among the drug inmates are still scarce. Therefore, this study examines the reliability and validity of ACREDA Drug-Related Locus of Control among Malaysians. The scale consists of 19 items where 15 of them were translated from DR-LOC Scale by Elizabeth Hall (2001) into Malay language by two counselling experts by using back translation method and the rest 4 were newly constructed ad hoc covering due to the cultural adaption factor. Its validity was examined by sampling the total of 80 clients from the selected drug rehabilitation centers in Malaysia and the face validity was undergone by 2 counselling experts for scale validation. Its reliability revealed the Cronbach`s alpha, 0.823 indicating a high reliability reading while the split- half reliability showed Cronbach's alpha of 0.774 for part 1 and 0.768 for part 2 making this scale reliable and suitable to be used in Malaysian population.

Key words: Reliability · Validity · DR-LOC · ACREDA · Back Translation · Cross-Culture

INTRODUCTION

On the blink of 21st century we are dwelling in, the gross amount of illicit drug cases in Malaysia is still particularly worrying. National Anti-Drug Agency, Malaysia, NADA [1] has officially reported that there were 26,668 drug addiction cases with the 6,739 relapse cases alleged [1]. It is important to highlight that the problem of substance-related abuse is born from the crushing kingdom of one's inner self. This happens when an individual is incapable of managing his or her state of control [2] that is invisible but voluntarily manifested through emotion and behaviour, thus the unbalanced self is inclined to hook with substances abuse as a matter of escapism of their problems as a substitute to happiness [3]. Thus, psychologically speaking, whenever drug seems to be pleasurable to them, it will be frequently consumed and with kind of that mind set, the issues of lapse and relapse will continuously happen. Oshikoya and Alli [4] opine that these happen are due to the drug dependency and addiction usually attributed by compulsive drug craving seeking behaviours. The factor of initial experimentation to independence also might contribute to substance abuse problem where it is initiated by the sense of curiosity and belief such substance may relief stress and helpful to feel grown

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especially when they are surrounded with the environment that promotes drug abuse related behaviours [5].

In psychological arena, the discourse of this kind is referred to the timeless concept of Locus of Control (LOC) introduced by Rotter in 1966 as derived from his Theory of Social Learning [6]. Cardinally, this theory was well-established with internal versus external control conception propounding the proposition where *"The degree to which persons expect that a reinforcement or an outcome of their behaviour is contingent on their own behaviour or personal characteristics versus the degree to which persons expect that reinforcement is a function of chance, luck or fate, is under the control of powerful others, or is simply unpredictable"* [7].

Choudhary *et. al* [8] underpin that LOC is basically a dimension in which individual bases the results of their lives by internal factors such as self- efforts and courage as contrary to external factors such as fate, luck and chance. It is found that people with internal locus of control will always have a more active pursuit of goals like social action, more enthusiasm in engaging more achievement, balanced interpersonal relationship, better emotional adjustment, a good sense of well-being and agreeable level of performance, truth seeking, alertness and autonomous in making decision whereas people with external locus of control are portrayed as someone who is always in depression, anxiety, less resilience and inability to control their stress [9, 10].

Manichander [11] further extends that persons with an internal locus of control (LOC) believe that they possess such a higher degree of control in their lives in the sense that what they do matters the question of safety, health, productivity and leadership (or any dimensions of work and life). This is because they have an attitude of personal responsibility for the foreseeable effects of what they do. When undesirable events happen, they are the first to reflect and ponder upon what they could have done differently. Persons with an internal LOC hold responsibility for their lives (totally responsible person) and actions as they are more enthusiastic, empowered, helpful, goal and service-oriented and diligently work to bring about positive change.

In contrast, persons with an external locus of control perceive events and circumstances as the controlling agents of their lives while what is happening is a matter of fate that they has no or less sense of possession no matter what they do. Such individuals oftentimes reluctant to pay as close attention to procedures and safety protocols. Their attitude is more prone into pointing fingers and blaming when undesired things happened and apparently more likely to perceive themselves as victims as if to feel helpless and powerless. This indulgence of playing the victim mentality makes them easily do blaming, criticizing, complaining, fault-finding, giving up and checking [10, 11].

On this note, it is agreeable to admit that locus of control is one of the pertinent concepts in psychology and oftentimes being the extensively examined construct, yet its extension into the area of substance abuse has been having a room for literature enrichment [12]. Therefore, this paper is aimed at enhancing the literature in this area and particularly presenting the validity and reliability of ACREDA DR-LOC instrument that is born from the original version of DR-LOC formulated by Hall [13]. This improvised version perhaps could be more comprehensive than its original counterpart and capable of being applicable worldwide.

MATERIALS AND METHODS

This quantitative study examines and the validity and reliability of the translated and improvised Drug Related-Locus of Control Scale. This study involved 80 drug addicts (79 Malays and 1 Indian by race) with the age ranging from 21 to 45 years old from the selected rehabilitation centers in Malaysia. Four selected counselors were chosen to facilitate the study. The researcher instructed the counselors on how to administer the scale. The respondents answered the scale, which took about 20 minutes to complete, in the space provided. The respondents are randomly selected from all the volunteers. All the respondents were informed that there was no right or wrong answers. The completed scale was collected for analysis.

This study used the ACREDA Drug-Related Locus of Control, the derived version of Drug Related-Locus of Control Scale, developed by Hall [13] as inspired by Rotter's conception of Theory of Social Learning. Drug-Related Locus of Control Scale (DR-LOC) consists of 15 items from its original counterpart, forced-choice measure of drug-use control expectancies in a variety of drug-use related situation. The researchers added another more 4 items, making it 19 items altogether covering new items suitable with Malaysians' ethical norms and beliefs.

Tracing back the construct of DR-LOC built by Hall [13], the development of this scale has been evolving decade by decade. It has been pioneered by Rotter in 1966

Table 1.0: Drug- Related Locus of Control [13]

Item Num.	Items
1	a. I feel so helpless in some situations that I need to get high.
	b. Abstinence is just a matter of deciding that I no longer want to use drugs.
2	a. I have the strength to withstand pressures at work or home.
	b. Trouble at work or home drives me to use drug.
3	a. Without the right breaks you cannot stay clean.
	b. Drug abusers who are not successful in curbing their drug use often have not taken advantage of help that is available.
4	a. There is no such thing as an irresistible temptation to use drugs.
	b. Many times there are circumstances that force you to use drugs.
5	a. I get so upset over small arguments that they cause me to use drugs.
	b. I can usually handle arguments without using drugs.
6	a. Successfully kicking substance abuse is a matter of hard work, luck has little or nothing to do with it.
	b. Staying clean depends mainly on things going right for you.
7	a. When I am at a party where others are using, I can avoid taking drugs.
	b. It is impossible for me to resist drugs if I am at a party where others are using.
8	a. I feel powerless to prevent myself from using drugs when I am anxious or unhappy.
	b. If I really wanted to, I could stop using drugs.
9	a. It is easy for me to have a good time when I am sober.
	b. I cannot feel good unless I am high.
10	a. I have control over my drug use behaviours.
	b. I feel completely helpless when it comes to resisting drugs.
11	a. Sometimes I cannot understand how people can control their drug use.
	b. There is a direct connection between how hard people try and how successful they are in stopping their drug use.
12	a. I can overcome my urge to use drugs.
	b. Once I start to use drugs I can't stop.
13	a. Drugs aren't necessary in order to solve my problems.
	b. I just cannot handle my problems unless I get high first.
14	a. Most of the time I can't understand why I continue to use drugs.
	b. In the long run I am responsible for my drug problems.
15	a. Taking drugs is my favourite form of entertainment.
	b. It wouldn't bother me if I could never use drugs again.

and being pursued by other former psychologist scholars such as Nowicki and Duke in 1974 and 1983 [13]. However, Hall [13] says that due to the constant criticisms given against its unidimensional construct, there were many psychologists improvised the former models into more particular and comprehensive LOC scales such as the Internality, Powerful Others and Chance Scales by Levenson [14] Multidimensional Health LOC Scale by Wallston and Wallston [15] Marital LOC Scale [16] and Mental Health LOC Scale by Hill and Bale [17] as well as Drinking Related Internal-External LOC Scale [13]. In the light of wanting more predictive treatment of outcome and of particular for various ranges of substance-abuse issues as suggested by Donovan and O' Leary [18], Hall adapted Drinking-Related Internal-External LOC Scale and targeted the instrumentational aim towards the other paradigm of control that is drug abuse.

Table 1.0 presents the original version of DR-LOC by Hall [13] that was written in English language, thus necessitating the scale to be translated into Malay language. The scale was then being translated by two panels that were well-proficient in both languages (Malay language and English). The translated Malay version and the original English version then were given to two experts with promising scholarship in counseling to impose the face validity approach upon the said instrument. The 15 original items with 4 new items in the translated scales were then administrated to the participants.

In addition to the latest scale improvised in ACREDA DR-LOC, four new items were inserted for making the scale in tandem with the code of morality held by Malay culture that puts God (in this case is predestination concept) as ultimate goal in life where the fate for an individual has been ascertained by God but still humans are ordained to give their best effort to attain desirable results. The Table 2.0 lays down the four new items in ACREDA-LOC version.

Table 2.0: DR-LOC ACREDA New Items

Item Num.	Items
16	a. I believe I can stop taking drug without falling into relapse.
	b. I am not confident that I can stop taking drug.
17	a. I can be socially active without using drug.
	b. I can make new friends that are none of the drug addicts.
18	a. I know God has ascertained my fate, yet there still have rooms for me to change it.
	b. There is nothing I can do. God has fated me to be a drug addict.
19	a. Without having supports and assistance from my family, I would not be able to stop from taking drug.
	b. I can control my drug addiction by myself with internal strength and spirit.

RESULTS AND DISCUSSION

Translation Process: Due to the cultural background differences, the adaptation of cross-cultural was employed in translating the psychological testing

particularly in bringing out the very meaning of each item in this scale. Therefore, the back translation technique was made possible in this research. First, the actual instrument of DR-LOC was translated by the two appointed experts in English Language and Counselling from English to Malay version. The need of undergoing the translation from English to Malay was because it was the respondents' native language, thus, the depth and breadth of respondents' understanding to each item would possibly being captured.

Chiefly, back translation has been suggested as a quality-control check because the process takes a few stages to be done. Generally, back translation is functioning to detect errors in translation and it involves the extensive checking, pretesting of the translation and also debriefing, crucial to make sure a reliable and accurate translation [19]. Basim *et al.* [20] advocate this idea positing back-translation as to focus on ensuring the conceptual equivalence of a new translated instrument with it original counterpart. The translator that fully proficient in both languages is needed in back translation to ensure that it has the same understanding of the subject domain measured. And to gain the best translation, the translator usually will avoid literal translation which is word by word being translated alone and combine it at the end as a sentence. It is crucial for the translator to use such a different word but carry the same meaning across languages [21]. On the same note, Pym [22] connotes that back-translation is when a translated document is translated (back) into the original language. The idea is that the author can then verify whether the translation encompasses all aspects of the original. According to Behling and Law [23] back translation is considerably a well-renowned method in preserving the very meaning of the original version.

Validity: Next, the aspect of validity is also crucial to be discussed here. Kumar & Govindarajo [24] simply connote that validity is an ability of a tool to measure what is required to be measured in which the researcher will test, compare and measure the concept with its accuracy as well as the instrument needs to be ensured for its content, construct and face validity. The researchers of this study who are all learned in the area of counselling have also established the face validity technique in this research. After preparing the DR-LOC instrument in both versions, the face validity was imposed. Two counsellors are approached to undergo the face validity upon the instrument that is in Malay version to obtain their insights on the subject matter assigned. This is in tandem with Jasmi *et a.l* [25] saying that the validation of content or modules should be referred to specialists who are in the said area.

Patton [26] defines face validity as the extent to which an instrument looks as if it measures what it is intended to measure. If one can look at an instrument and understand what is being measured, it has face validity. Face validity is indeed a complex and multidimensional construct that are helpful for measuring how test items are appeared to respondents and others [27]. As opined by Brickman *et al.* [28] face validity is well- known as the simplest assessment of validity technique because it does not involve any statistical or numerical technicality in implementing it whereas [29] affirm that face validity is believed to be very casual, soft and often being perceived as passive measure of validity. Another celebrated view on face validity propounded by Sangoseni *et al.* [30] is that face validity seeks the experts to inspect the items provided in questionnaire and endorse the test as valid in tandem with the concept involved that is being measured just on the face of it, thus experts are expected to measure whether each item matches any conceptual domain of the concept.

Reliability: Yusliza and Ramayah [31] highlight that reliability test is done through the internal consistency evaluation in which the Alpha Cronbach measure is employed. In this research reliability test was conducted by using Cronbach's alpha, thus the new translated version of DR-LOC ACREDA obtained the value of 0.823 indicating the high reliability value. The result of the new version of the DR-LOC scale was literally higher than the original version which was 0.81. These results show that the translated version of the DR-LOC-ACREDA is highly reliable and appropriate to measure the Locus of Control among the individuals involved in drug abuse. Moreover, this revised scale represents a short and convenient psychological tool for practitioners in Malaysia particularly.

Table 3.0: Reliability Test of the DR-LOC-ACREDA

Constructs	Item Numbers	Total Cronbach's Alpha Value
DR-LOC (Original Version)	15	0.810
ACREDA DR-LOC	19	0.823

Table 3.0 presents the comparison between DR-LOC (Original Version) and ACREDA DR-LOC in term of their total Cronbach's Alpha value. The reliability value for DR-LOC original version is 0.81 whereas the ACREDA

DR-LOC hits the value of 0.823. In this study, the split half technique was also being used to assess the reliability of the scale. The Cronbach alpha reliabilities of two parts split half (Part 1 & 2) are shown in Table 3.0. The Cronbach alpha for Part 1 comprising 10 items is 0.774 and reliability for Part 2 comprising 9 items is 0.768.

Table 4.0: Split-Half Reliability

Part	Cronbach Alpha	Number of Item
Part 1	0.774	10
Part 2	0.768	9

Split- Half reliability technique was used to assess the reliability consistency of the scale. According to Nugent [32], split-half reliability correlates responses from one half of a test with the other half. Piaw in Amin *et al.* [33] noted that split-half technique is one way to measure the reliability of a quantitative research. This technique is done by splitting the items of the scale into two groups and computing and analysing the correlation values. The reliability is considered high if the items in both groups are highly correlated. Rudner & Schafer [34] also mention that split-half reliability coefficient is obtained by dividing the test into half, correlating the score by each half and correcting for length. The split is based on odd versus even items numbers, randomly selected items, or manually balancing content and difficulty. The advantage of this approach is that it only needs a single test administration. Piaw [35] also mentioned that correlation values ranging from 0.75 to 0.95 indicate satisfactory reliability.

Diagram 1.0 exhibits the procedure for the ACREDA Drug-Related Locus of Control formulation in a pragmatic way. The original DR-LOC Scale developed by Hall [13] was back translated from English to Malay by two experts in the first place. The Malay-translated versions of DR-LOC from both experts then were compared and the finest consensus between the two versions was created. The later procedure for this back translation continued to further translate the DR-LOC Scale in Malay version into English to establish internal consistency, eliminate errors and situate the context of the scale correctly by another two counselling experts who are well-proficient in English.

Akin to the former procedure, the English version of DR-LOC was translated into Malay as the final translational point. The latest Malay version of DR-LOC was then undergone the face validity by another two experts to make a cross- examination and capture their insights on the contents of the scale. After considering their commentaries, the Malay version of DR-LOC underwent the reliability test for the first time and

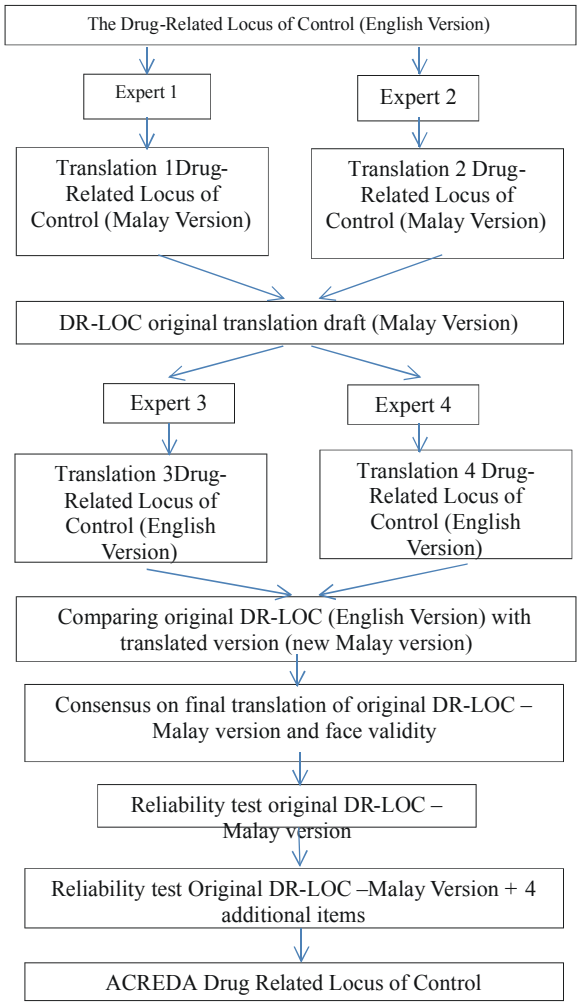

Diagram 1: Procedures of ACREDA Drug-Related Locus of Control Formulation

continued to be retested with the inclusion of 4 additional items that made its establishment as ACREDA Drug-Related Locus of Control Scale. These procedures do promote the reliability consistency in the matter of scale content that make it more credible to be applicable worldwide. This has been advocated by Maneesriwongul and Dixon [36] asserting that back-translation is helpful in accomplishing conceptual equivalence, preserving instrument's strength and strengthens the credibility of the findings.

CONCLUSION

The split-half reliability indicates that the scale is reliable and can be used for Malaysian population. Thus, ACREDA Drug-Related Locus of Control is a valid and

reliable scale. It can be used to examine self-determination of drug abuse directed by internal states or external states that clarify the beliefs an individual holds on to. While the instrument has proven to have excellent psychometric values, further validity and reliability studies are necessary to support the finding of this initial study, especially with more diverse sample and more sophisticated statistical analysis.

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