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Translation and validation of the Addiction Recovery Questionnaire (ARQ)

Muhammad Saghir [1]   Mazhar Iqbal Bhatti [2]   Fayyaz Ahmed [3]

Abstract: *Substance abuse is a pandemic disease in Pakistan. The use of stimulants such as methamphetamine and ecstasy is common among adolescents, and it is increasing day by day. Our educational institutes are also facing this problem. So, in the present study, the Addiction Recovery Questionnaire (ARQ) was translated and validated in Pakistani culture to address the language barrier. The present study aimed to translate and validate the addiction recovery questionnaire on a sample of 140 substance users. Five independent translators who were experts in translation were selected to translate the ARQ in Urdu, which was finalized by the committee of 3 experts. Similarly, 3 English translators were contacted to translate the Urdu version back into English and shared with the Authors for their feedback. The author's recommendations were also incorporated. The alpha reliability of the ARQ was reported as α = 0.60, which shows the reliability of the measure. CFA was applied for the translated version for model fit, and to confirm the factor loading, the value of Chi-Square 63.20 with RMSEA of 0.04 indicates an adequate fit of the model. The reliability of the measure was first time established in the present study, and the CFA was also done to determine the construct-based factors of recovery. Hence, the ARQ is a reliable and brief recovery outcome that can give information about different dimensions of recovery, such as abstinence, normal living, and positive life expectancy.*

Introduction

In the treatment of drug addiction or substance dependence, high relapse is the most common problem. Mostly, individuals with drug abuse come to treatment, but they get back to drugs after treatment because of the high relapse rate. Drug addiction is a chronic and relapsing disorder. Despite its negative consequences, compulsive drug-seeking or drug-taking behaviors are persistent among those who use drugs. Initially, drugs produce euphoria or pleasure, which reinforces subsequent use as well (Cami & Farré, 2003). Furthermore, it is a challenging public health problem.

Drug addiction is a growing problem in the world. According to UNODC (2013) and the Ministry of Interior and Narcotics Control (2013), the general prevalence of drug abuse is increasing in Pakistan. It reports that substantial portions of the population aged 15-64 are suffering from overwhelming consequences of substance abuse. The report proposed that the rate of substance abuse is 5.8 %, which comprises 6.4 million adults using drugs in their last 12 months, and 4.1 million adults were concluded to be dependent on drugs in Pakistan (as cited in Muhammad, 2022). A survey conducted by the South Asia Strategic Stability Institute reported in the Senate Standing Committee on Interior explained that 53% of students from leading private schools were addicts. They reported that seven million people are addicted to drugs, and 700 people die every day due to drug-related complications (Ahmed, Yousaf, Saud, & Ahmad, 2020).

According to Malik and Sarfaraz (2011), most opiate users use heroin, and they abuse multiple drugs too. Drug abuse among the youth is increasing, and it's a major problem in Pakistan. According to the Ministry of Narcotics Control, Islamabad (as cited by Masood & Us-Sahar, 2014), 25% of the young population is somehow using any kind of drug, and cannabis is the most commonly used drug. Moreover,

[1] PhD Scholar, Department of Psychology, International Islamic University, Islamabad, Pakistan.
[2] HOD, Department of Psychology, International Islamic University, Islamabad, Pakistan.
[3] Senior Lecturer, Riphah International University, Gulberg Greens Campus, Islamabad, Pakistan.

drug addiction involves considerable morbidity and mortality, which makes it a serious socioeconomic concern in Pakistan (Javed et al., 2019).

Addiction Recovery Questionnaire (ARQ)

Addiction Recovery Questionnaire (ARQ) is a measure of recovery from substance dependence. It can also be used to navigate the treatment journey and to achieve goals. Twelve items of ARQ cover key areas related to normal living, abstinence, and positive expectancy, so working on these goals can enhance recovery positively. Scores can be calculated by taking the sum of participants' responses. ARQ has 12 items, and it is a four-point scale such as 0 = not at all, 1 = rarely, 2 = often, and 3 = all the time. The maximum score is 36. There are four items that need to be reverse scored Q 5, Q 6, Q 8, and Q 9. (Truby, 2020). ARQ was developed to measure recovery and can be used in outcome assessment with high face validity (Iveson-Brown & Raistrick, 2016).

ARQ has three subscales:

i. Normal living (items 1, 2, 3, 4, 5) is related to having enough money, trust building through being consistent in reliable behaviors, suitable accommodation so that to have stable living, activities of daily living such as hygiene, and daily routine, and lastly, criminal activities

ii. Abstinence (items 6, 7, 8, 9) The subscale consists of staying away from drugs, making new friends, being abstinent, and substituting prescriptions to prevent relapse.

iii. Positive expectancy (items 10, 11, 12) This subscale includes optimism, self-esteem, and confidence as a change in thinking in a variety of situations.

Objectives

- To translate ARQ in Urdu language for cultural relevance
- To determine the reliability of the instrument

Sample

The sample of the present study was comprised of 140 substance users who were hospitalized in different residential treatment facilities in Islamabad. Their age range was 15 to 64, and their level of education was primary to Ph.D. They came from the different areas of Pakistan. The sample was selected using a convenience sampling technique. Patients with psychological disorders having no history of substance abuse were not selected for this study.

Procedure

Before conducting the research, institutional permission was sought along with the permission of the participants for their recruitment in the study. The participants were approached in their residential treatment centers. They were briefed about the nature of the study. During this process, questionnaires were handed over to their corresponding psychologists and individually administered to them. The data was gathered by their response on the rating scale. For data analysis, statistical tools were used according to the objectives of the study.

Procedure for Translation of ARQ

Before initiating the process of translation, permission to use this scale, as well as translate it into the Urdu language, was sought from the author of the instrument. After successfully attaining permission from the author (Iveson-Brown & Raistrick, 2016) for translation, an individual who has experience in drug addiction rehabilitation, along with their proficiency in the English language as a secondary language, was requested to translate this scale into Urdu. Three PhD scholars who had field experience of approximately ten years and two M.S Psychology who were practicing as clinical psychologists translated this scale into Urdu.

A focus group was arranged to finalize the best translation of the scale. The original English version of the scale was translated by five independent translators who read and translated all the items, including the instructions. All translations were compared by a committee of 3 experts along the original

instrument for the selection of best-translated items after reviewing every item from all Urdu versions of the translation. After developing the consensus, a final draft was prepared, which was based on the selected items.

Secondly, the final Urdu version was also back-translated into the source language. Four participants were contacted for translation, and a review committee of two experts was also incorporated to review discrepancies and select the most relevant version of the scale. Finally, the English version was emailed to the authors for their opinions. His opinion was also mentioned in the study, along with the recommendations from the authors.

Back Translation

According to Harkness and Schoua-Glusberg ([1998](#)), back translation is generally used in survey research. It's a type of translation of a translation back into the source language for assessment of the translation quality. The purpose of the technique is to compare and contrast the back translation with the source text.

Suggestions of Author and Co-developer of ARQ

The finalized version was emailed to the author for the opinion. The author evaluated the version with the co-developer, and their opinions and recommendations were given in the table below.

Stated below are the things people find important in their recovery. Kindly answer each question given below. In regards to the previous month, have you…

a. Absolutely not   b. Rarely   c. Often   d. Always

Table 1

No.	Items	Suggestions
1.	Was there enough money to meet the necessities of life?	Okay
2.	People important in your life trusted you?	Okay
3.	Have you been staying in a reasonable residence?	Okay
4.	Been continuing your daily activities?	Okay
5.	Have you been involved in criminal activities?	Okay
6.	Have you been in contact with drug addicts and alcohol users?	Okay
7.	Have you been friends with people who do not use drugs or alcohol?	Okay
8.	Have you been completely abstinent from alcohol and other drugs?	Okay
9.	Have you been taking drugs or psychiatric medications?	Drugs in the UK would mean illegal drugs – can you work this so that your word for medication applies to both addiction and mental health medications?
10.	Had a positive feeling about the future?	Okay
11.	Feeling generally good about yourself?	Okay
12.	Have you been confident in your resistance to using alcohol or other drugs you might feel using?	The important thing is that you do NOT want to take them.

After incorporating the suggestions of the review committee, the final version of the forward translation was emailed to the authors for their valuable review and feedback. As per the review of the authors, the following are the important concerns:

i. The question of how the questions flow from the initial instruction - the question stem statement says, "With regard to the previous month have you…" and so each question should follow with appropriate grammar. In English, questions 4, 7, 8, 9, 10, and 12 follow perfectly, whereas the others have an additional verb or lack one. It may, of course, be that this reads ok in Urdu.
ii. See attached two issues in the wording of questions 9 and 12.

Suggestions reported in Table 3 showed that the authors agreed to all items except items 9 and 12. They mentioned that these items were related to the original scale. They also pointed out the grammatical changes in the question stem statement in order to correct the sentence flow.

Additionally, they suggested some changes in the wording of items 9 and 12. In item 9, the construct is about the medication for mental illness and drug addiction, but the translators translated drugs as medicine, which was the cause of confusion or misleading towards illegal drugs. Similarly, item 12 also needed to be modified in terms of wording as per the suggestion, and the question should focus on the willingness to not take drugs.

Table: Incorporate the suggestions of the Authors

The following table shows the ARQ's version with incorporated suggestions.
Stated below are the things people find important in their recovery. Kindly answer each question given below. In regards to the previous month, have you...

    a. Absolutely not   b. Rarely   c. Often   d. Always

Table 2

No	Items
1.	Enough money to meet the necessities of life?
2.	Have you been trusted by important people in your life?
3.	Have you been staying in a reasonable residence?
4.	Been continuing your daily activities?
5.	Have you been involved in criminal activities?
6.	Have you been in contact with drug addicts and alcohol users?
7.	Have you been friends with people who do not use drugs or alcohol?
8.	Have you been completely abstinent from alcohol and other drugs?
9.	Have you been taking medications for mental illness or drug addiction?
10.	Had a positive feeling about the future?
11.	Feeling generally good about yourself?
12.	Have you been confident in refusing to use alcohol or other drugs you might feel to use in a situation?

The table shows the incorporation process. These suggestions were recommended by the authors of the ARQ. The suggestions were incorporated into three items: item 2, item 9, and item 12. In item 2, the item sentence was not in accord with the stem statement. The flow of the question was not following the statement, so the item was re-worded by the expert's committee. The committee was comprised of 2 experts. Moreover, the modification of item 2 was suggested as "been trusted by important people in your life?".

Similarly, the committee also modified item 9 because the authors suggested that the word drug has a different meaning, and it indicates an illegal drug; however, the item is about medicines. Hence, the item is modified as "been taking medications for mental illness or drug addiction?". Finally, item 12 was also modified according to the suggestion of the authors. The item was slightly modified by the expert committee as "been confident in refusing to use alcohol or other drugs you might feel to use in a situation?". This suggestion was about not taking drugs by individual in time of craving or exposure to triggers.

Results
Table 3
Sociodemographic characteristics of participants

Characteristics of participants	Full Sample	
	N	%
Age		
Late adolescence	46	32.9

Early adulthood	52	37.1
Middle adulthood	42	30.0
Gender		
Male	136	97.1
Female	4	2.9
Marital status		
Unmarried	64	45.7
Married	70	50.0
Divorced	5	3.6
Widow	1	0.7
Education		
Primary	32	22.9
Middle	17	12.1
Matric	27	19.3
Intermediate	36	25.7
Graduation BS	22	15.7
M.S / M. Phil	5	3.6
Ph. D	1	0.7
Choice of drugs		
Opioids, heroin, or painkillers	23	16.4
Cocaine	5	3.6
ICE, Methamphetamine	25	17.9
Alcohol	12	8.6
Cannabis, weed, marijuana	45	32.1
Multiple drugs	30	21.4
Number of relapses		
No relapse	62	44.3
One time relapse	21	15.0
Two times relapse	24	17.1
3 to 4 times relapse	23	16.4
More than five times relapse	10	7.1
Duration of drug use		
0–1 year	24	17.1
2–3 years	20	14.3
3–5 years	25	17.9
5–10 years	37	26.4
11 and more	34	24.3
Comorbid mental illness		
Psychotic disorder	39	27.9
Neurotic disorder	8	5.7
No mental illness	93	66.4

Note: N = 140

The above table explains the frequencies and percentages of the important demographic information. The age range of the substance users reports that 32.9% are in late adolescence, 37.1% are in early adulthood, and 30% are in middle adulthood. The gender of the study indicates that there were 97.1% males and only 2.9% females. The marital status indicates that there are 45.7% unmarried substance users, 50% married, 3.6% are divorced, and 0.7% are widowed. The educational level indicates that 22.9% are with primary, 12.1% middle, 19.3% matric, 25.7% intermediate, 15.7% graduate, 3.6% M.S / M. Phil and 0.7% have done Ph. D. Choice of drugs indicate that 16.4% are using an opioid, heroin, and pain killer, 3.6% are cocaine users, 17.9% are using ICE, methamphetamine, 8.6% are using alcohol, 32.1% are cannabis, weed, and marijuana users, 21.4% are multiple substance users. A number of relapses indicate that 44.3% have no relapse, 15% have relapsed once, 17.1% have relapsed twice, 16.4% have relapsed three to four times, and

7.1% have relapsed more than five times. Duration of drug use indicates that 17.1% are using substances for one year, 14.3% are using substances for 2–3 years, 17.9% are using substances for 3–5 years, 26.4% are using substances for 5–10 years, and 24.3% are using substances for 11 and more years. Comorbid illness indicates that 27.9% are with psychotic comorbidity, 5.7% are suffering with neurotic disorders, and 66.4% have no mental illness.

Table 4
Psychometric properties of ARQ scale and subscale

Scale	M	SD	Range	Cronbach's α
Addiction recovery questionnaire	20.50	5.44	0–29	0.60
Normal living	13.92	2.35	0–12	0.16
Abstinence	8.84	2.72	0–12	0.47
Positive expectancy	8.17	2.20	0–9	0.51

Note: The ARQ Addiction Recovery Questionnaire has three subscales.

This table emphasizes the psychometric properties of the research scale, which was translated into Urdu. The alpha reliability α = 0.60 of this scale indicates that the reliability of this scale is falling in the acceptance range. The α = 0.16 for the subscale of normal living indicates a low level of reliability, the α = 0.47 for the subscale of abstinence also indicates low reliability, and α = 0.51 for the subscale of positive expectancy also explains the low level of reliability because of the limited number of the items.

Validation of the Translated Version of the ARQ Scale

The Addiction Recovery Questionnaire Scale was translated into Urdu for this study. Since it had been translated and validated before, the first step in the study was to validate the translated version. The results of CFA and values for model fit indices are shown below (see Table 3).

Table 5
Confirmatory factor analysis of ARQ scale (N=140)

Model	χ^2	Df	P	CMIN/df	Fit indices				
					CFI	GFI	TLI	IFI	RMSEA
Model D	102.86	51	.00	2.017	.72	.87	.64	.74	.08
Model 1	63.20	48	.07	1.317	.92	.92	.88	.92	.04

Note. DF=Degree of Freedom, P-value, CFI=Comparative Fit Index, GFI= Goodness of fit index, TLI=Tucker Lewis Index, IFI=Incremental Fit Index, RMSEA=Root Mean Square Error of Approximation

The above table explains the results of confirmatory factor analysis (CFA), which compares the two models (Model D and Model 1) and depicts the goodness of fit. The calculated value of the Chi-square, 63.20 indicates that model 1 is well within the acceptable range, with a p-value of 0.07 indicating a better fit. The computed value of CFI (Comparative Fit Index) and GFI (Goodness of Fit Index) 0.92 for model 1 indicates a good fit. The values of TLI (Tucker Lewis Index) and IFI (Incremental Fit Index), 0.88 and 0.92, also indicate a good fit. The value for RMSEA was, however, 0.04. Hence, the model showed an adequate fit to the data.

Discussion

In the present study, the demographics of the sample having drug addiction are reported in terms of age, substance type, duration of use, and the number of relapses. So, drug addiction was reported in three age cohorts: 33% in late adolescence, 37% in early adulthood, and 30% in middle adulthood. Additionally, results also showed the percentages of choice of drugs. The percentage of cannabis is 32%, a second higher percentage is 21.4% for multiple substance users such as a combination of cannabis with ice or opioids and alcohol, 18% are using ICE (methamphetamine), and 16.4% are using opioids such as heroin, painkillers. Sau, Mukherjee, Manna, and Sanyal (2013) also reported research with percentages such as opiates rate reported as 57% in males, 51% rate of heroin, alcohol 38% rate, rate of heroin, and 22% rate of cannabis. Results were also consistent with old research, such as research conducted by McLellan (2017), which

reported that 85% of the individuals who met the criteria of substance use disorder fall in adolescence. Additionally, the report of Drugs and Crime (2018) stated that drug use is higher among 18-25 years of age (Sau et al., 2013). Moreover, they reported the data from 28 states of Europe, along with Norway and Turkey, that the use of amphetamine and ecstasy among individuals under age 35 is two to three times higher than older individuals. Additionally, the lifetime use of cannabis among young individuals aged under 35 is much higher, and these findings are also consistent with the cannabis use in the present study, which was reported as 32%, which indicates that cannabis is most common among addicts. Data from the Plurinational State of Bolivia showed that the recent use of multiple substances is significantly higher among the age group 18-24 than among those in another age group 36-50. According to the European Monitoring Centre for Drugs and Drugs addiction, the concurrent use of more than one substance is characteristic of young individuals as compared to older individuals, and it's more common as recreational and regular drug use. It also involves more established patterns of multiple substance use, which are further linked with patterns such as the increased risk of long-term problems, risk-taking through binge drinking of alcohol, or binge use of stimulants at parties or in group settings (as cited in Drugs & Crime, 2018). The present study also indicated the relapse rate of the patients as 44% of the patients were in their first treatment, and 66% relapsed one time or more than one time. In a research conducted by Sau et al. (2013), 31% of the sample were relapse individuals.

Comorbid illnesses were also reported in the present study. The results indicate that 27.9% are with psychotic disorders, 5.7% are suffering with neurotic disorders, and 66.4% have no mental illness other than substance use disorder. Past literature also showed the rate of comorbid disorders of substance use disorder. The common co-occurrence illnesses were anxiety (44.7%), depression (30.6%), and paranoid delusion (9.8%) (Sau et al., 2013). According to Volkow (2001), drugs have a role in triggering psychosis in those without a history of psychiatric illness. Thought is that the stimulant drugs trigger psychosis, and there is an excess of dopamine concentration in the brain. Additionally, individuals with a history of methamphetamine abuse still have symptoms of psychosis; however, they have a loss of dopamine transporters in the brain.

The psychometrics of the scale, especially the reliability and validity, were not determined before. This was the first attempt at reliability analysis, and the results showed the alpha reliability $\alpha = 0.60$ of this scale indicates that the reliability of this Urdu version scale is falling in the acceptance range. Which shows the items have internal consistency among items. The authors of the original scale reported the face validity, which was good. When asked about the top three items for recovery, they put abstinence at the top for recovery. For problem drinkers, 65% of them put abstinence as the first thing for recovery, 8% put accommodation and mental health as the second level, 59% of problem drug users also put abstinence as the first level, and 14% said staying away from other users is a second level thing for recovery. Conclusively, 86% of problem drinkers and problem drug users, 49% of concerned others, 36% of specialists, 43% of generalists, and 42% of commissioners put abstinence first (Iveson-Brown & Raistrick, 2016). ARQ also has the ability to discriminate the respondents into three groups, such as well functioning, treatment, and recovery, as validating the outcome of ARQ (Truby, 2020).

The results of confirmatory factor analysis showed acceptable results with a df to chi-square ratio of 63.20, which is well within the acceptable range. The value for RMSEA was, however, 0.04. Hence, the model showed an adequate fit to the data. The results of this study are also evident by the author of ARQ (Iveson-Brown & Raistrick, 2016), where he constructed the scale and ran the Exploratory factor analysis. The component analysis for ARQ found three factors, abstinence, normality, and positivity, which are also confirmed by the confirmatory factor analysis of this research with an acceptable range of chi-square value of 63.20 and RMSEA value of 0.04 with adequate fit of the model.

Ethical Considerations

The present study involves human participants, and the ethical considerations were reviewed and approved by the Departmental Ethics Committee (Board of Advance Studies and Research, BASR) at the International Islamic University, Islamabad (F. No. IIU/2021-Exams-6,511). Written informed consent to participate in this study was provided by the participants and their legal guardians.

Limitation

In the present study, the reliability was reported through Cronbach alpha; test re-test reliability should also be considered for comparison with Cronbach alpha. Moreover, the validity of the scale was not determined in the present study; another measure of recovery should be considered for comparing the validity of the scale. Finally, the sample of the present study was based on the clinical population, and all participants were hospitalized in residential treatment centers. Hence, considering the normal population in the research for determining the psychometrics would signify the findings of the research.

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