

ORIGINAL ARTICLE

Assessing Warning Signs of Relapse in Drug Addicts: Translation and Validation of Advance Warning for Relapse (AWARE) Questionnaire

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ABSTRACT

Aim: To translate and validate Advance Warning of Relapse (AWARE) Questionnaire in to Urdu language for assessing relapse among drug addicts of Pakistan.

Methods: The research comprises of translation of AWARE, temporal validation of translated scale, and its construct validation. Two items (22, 28) were modified keeping structural and functional equivalence. Sample for validation was obtained from rehabilitation centers of Islamabad and Rawalpindi, with age ranging from 18-60 years ($M=29.3$; $SD=8.2$). Temporal validity was determined by test-retest reliability. Exploratory factor analysis (EFA) was used to determine the valid factor structure, whose model fitness was assessed using Confirmatory factor analysis (CFA). Reliability was used to assess the internal consistency.

Results: It was found that translated scale possess significant temporal validity ($\alpha= .81$). EFA demonstrate a unifactorial structure ($\lambda > .30$) explaining variance of about 34.3%; such that four items (8, 14, 20, 26) were removed based on poor factor loadings. Indices of model fit through CFA confirm factor structure. Reliability of scale was also significant ($\alpha= .90$).

Conclusion: Findings suggested the reliable and valid nature of AWARE-Urdu to assess warning signs of relapse in drug addicts.

Keywords: Warning signs, relapse, drug addicts, Urdu translation, validation, AWARE

INTRODUCTION

Addiction is a recurring and difficult to control behavior that is signified by physical and psychological inability to avoid a substance or activity despite of its prevailing harmful effect.¹ Drug addiction however is defined by National Institute on Drug Abuse (NIDA) as the chronic disease involving the behavior of drug seeking and usage which is compulsive in nature; hence long lasting and is excessively repeated despite harmful consequences for the individual². It is a menace to the society as it results in enslaving the individual of drug or substance³ and the addicted person start deteriorating physically by being at high risk of HIV, lung or heart diseases, cancer^{4,5}, mentally⁶, emotionally⁷ and socially^{8,9}.

Drug addiction is associated with the intense compulsive urges to use the drug and thus there are high chances of relapse¹⁰; that is a return to addictive behavior signified by recurrence of past condition that exist before treatment¹¹. These urges are caused by biological changes¹² as well as the psychological and social determinants^{13,14}.

Relapse is thus very difficult to fight with because the individual has to again overcome effectively all the biological as well as the psychosocial factors which are associated with the relapse condition. Drug relapse prevention is so a very significant part of the recovery for addicts because of the persisting risk of relapse for many years after the treatment.² Statistics indicate that in Pakistan approximately 6.7 million people are drug addicts comprising of 6% of the total population¹⁵ and of which around 70% are with history of relapse¹⁶. This indicates an alarming situation and thus a dire need to study the concept of relapse among drug addicts of Pakistan. This objective could be achieved by using a reliable and valid measure to assess the relapse.

Different scales have been developed to estimate the relapse; of them Stimulant Relapse Risk Scale (SSRS) estimates the risk for relapse¹⁷, Time to Relapse Questionnaire (TRQ) determine the time taken by the individual from thought of initial drug to the actual use of drug¹⁸. Advance Warning of Relapse (AWARE) Questionnaire is a valid measure in this regard with good predictability for the occurrence of relapse ($r=.42$, $p<.001$)¹⁹. The measure is also used in the recent researches which provides evidence for the applicability of the measure in assessing relapse^{20,21}.

The Advance Warning of Relapse Questionnaire was devised with an intent to assess chances of relapse by determining the warning signs associated with relapse condition, as described by Gorski and Miller²². These warning signs can be broken down into three main categories; i.e., emotional, mental, and physical relapse. During the "emotional type of relapse the person although not consciously thinking about drug usage but they are setting themselves up for it and are in some denial about the possibility that a relapse can occur. The second category is "mental relapse" in which the person is thinking about drug usage, but they are at the state of war with themselves between wish of using the drug and not using it. This state of inner war makes the person tired and less able to deal effectively with the situation. The last one is "physical relapse" when a person finally returns to drug use²³.

Urdu translated or adapted version of the scale is not yet devised. The translation and validation of research instruments is however of great significance for addressing cultural variability and establishing the cultural equivalence²⁴. The establishment of construct validity and psychometrics of the research instruments is also very important so as to ensure factor structures around the culture the psychometrically sound data; that is reliable and valid.²⁵ The present study thus aimed to translate, modify, and validate the scale thus making it culturally adaptable for drug addicts.

METHOD

Research Type: The study was conducted to obtain a valid and reliable Urdu version of Advance Warning of Relapse (AWARE) Questionnaire after approval from IRB. The data was collected between November 2018 to March 2019. The population of the study comprised of drug addicts who are currently under treatment. Sample ($N=165$) was approached at the rehabilitation centers Rawalpindi and Islamabad.

Data Collection Tools: The data collection was carried out through AWARE Questionnaire.

Advance Warning of Relapse Questionnaire: This is a self-report measure designed to assess the warning signs associated with relapse, as described by Gorski.²² The current version of the scale comprised of 28-items and was refined from original version of 37-items after subsequent analyses. The items are scored on 1-7 Likert type rating scale; such that, 1 denotes *never* and 7 denotes *always*. The scoring is reversed for the five items of the questionnaire: 8, 14, 20, 24, 26. The higher score indicate prevalence of more warning signs of relapse and thus lower

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prevention against relapse. The score ranges from lowest possible score of 28 to highest possible score of 196. The scale possesses good internal consistency ($\alpha=.92$) as well as test-retest reliability ($\alpha=.92$)²⁶.

Data Collection: Data was collected by administering the questionnaire in an individual setting with drug addicts.

Data Analysis: The data was analyzed by using test-retest reliability to establish temporal validity. Cronbach's α reliability assessed the internal consistency of the questionnaire. Factor analysis was used to determine factor structure (i.e., exploratory factor analysis) and confirm that factor structure (i.e., confirmatory factor analysis).

Translation of Advance Warning of Relapse Questionnaire: The original author of Advance Warning of Relapse (AWARE) Questionnaire "William R. Miller" was contacted via E-mail to acquire permission for translation and modification. The translation was carried out by using the well-established method of forward-back translation²⁷.

Validity and Reliability of Advance Warning of Relapse Questionnaire: The validity of questionnaire was assessed by determining linguistic, temporal, and construct validity. The reliability was assessed by calculating the internal consistency.

Linguistic Validity: The independent Urdu translations were obtained from five bilingual experts and these forward translations were reviewed by committee of subject matter experts. The finalized Urdu version of the scale was then back translated into English by five bilinguals and the appropriate final back translation was selected through committee approach.

Temporal Validity: Temporal validation was established by determining the consistency of scores across the time through test-retest reliability. The purpose was achieved by administering the Urdu version of Advance Warning of Relapse (AWARE) Questionnaire "AWARE-Urdu" on a sample of 25 drug addicts. The sample ($N=25$) was obtained from a rehabilitation center in vicinity of Islamabad which comprised of the participants aged 18-42 years ($M=28.4$, $SD=5.9$), majority had secondary level of education, and all were males. Prior to the administration permission was acquired from the authorities of rehabilitation centers by briefing them about the purpose and that the participants were to be re-tested after the time period of one-week. Urdu-Urdu test-retest condition was used to accomplish the goal of study. The Urdu translated version of instrument was administered on the participants and after one-week same participants were re-tested using same Urdu version of the instrument.

Construct Validity: The factor structures for construct validity were determined through EFA and confirmed by using CFA. Independent samples were obtained for both analyses comprising of 140 ($M=30.03$; $SD=8.35$) and 150 ($M=29.45$; $SD=8.83$) drug addicts respectively from drug rehabilitation centers in the locality of Islamabad and Rawalpindi. Authorities were assured about all the ethical consideration including; confidentiality, anonymity, and psychological safety of the participants.

Internal Consistency: Internal consistency was determined by using the reliability estimates.

Ethical Principles of the Study: The permission for the translation and modification for AWARE was obtained from original author. The author was ensured of the ethical considerations and also of maintaining the functional and conceptual equivalence. The study participants for validation of instrument were ensured about the anonymity and confidentiality of their responses.

RESULTS

The results for validation and psychometric properties of the translated instrument are mentioned as follows:

Content Validity: The content validity was achieved by the committee of experts and the final back translation was sent to the original author of AWARE for the review. The author mentioned suggestion regarding the conceptual equivalence based on which Item-1 was changed from "I feel anxious or uncertain about my

ability to quit drug" to "I feel anxious or uncertain about my ability to stay drug free" (Table 1).

Table 1: The Modified Item of AWARE-Urdu Based on Author's Review

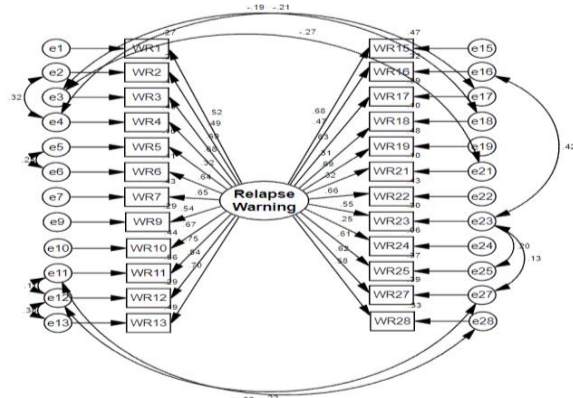
Previous item before review	Modified item after review
۱- میں اپنے نشہ چھوڑ دینے کی صلاحیت کے بارے میں پریشانی یا بے یقینی محسوس کرتا/کرتی ہوں	۱- میں اپنے نشہ سے دور رہنے کی صلاحیت کے بارے میں پریشانی یا بے یقینی محسوس کرتا/کرتی ہوں

Table 2. Factor loadings for Advance Warning of Relapse Questionnaire-Urdu through Principal Component Analysis ($N=140$)

Items	Components		Items	Components	
	λ	h^2		λ	h^2
11.	.71	.57	15.	.62	.45
10.	.70	.49	17.	.61	.38
19.	.70	.47	9.	.58	.35
22.	.69	.45	23.	.57	.31
13.	.67	.48	2.	.55	.30
6.	.67	.45	1.	.53	.30
3.	.67	.45	28.	.52	.31
4.	.66	.45	16.	.50	.24
7.	.65	.43	21.	.40	.19
12.	.64	.38	5.	.32	.20
25.	.62	.38	18.	.31	.14
27.	.62	.41	24.	.30	.18
Eigen Values				8.24	
% of Variance				34.33	

Note. λ = factor loadings; h^2 = communalities

Figure 1. Measurement model of Advance Warning of Relapse Questionnaire-Urdu (24 items).



Temporal Validity: Temporal validity was established by assessing the test-retest reliability of the translated version of scale which demonstrated significance correlation ($\alpha = .81$, $p < .01$). This provides support for the temporal validation of the translated instrument.

Construct Validity: Construct validity of Advance Warning of Relapse (AWARE) Questionnaire-Urdu was established by exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA was used to determine factor structure of AWARE-Urdu. Bartlett's test of sphericity was significant ($\chi^2 (378) = 1745.80$, $p = .000$) which demonstrates that the items possess adequate common variance for the conduction of factor analysis; that is, items could lead to the definite factor structures by the exploratory factor analysis (EFA). Kaiser-Meyer-Olkin Measure (KMO) of sample adequacy was .83 which is close to 1 thus indicating that the data set is adequate for the factor structuring²⁸.

The factor loadings; that is, how much each factor is contributing towards the construct, indicated that Item-8, 14, 20, and 26 possess poor factor loadings ($\lambda < .30$). These items are thus removed and EFA was conducted again. Bartlett's test of sphericity was found to be significant ($\chi^2 (276) = 1480.924$, $p = .000$) and Kaiser-Meyer-Olkin Measure (KMO) of sample adequacy was also improved to .87. The factor extraction method of Principal

component analysis (PCA) was used for factor analysis as used by the authors of original version of the AWARE Questionnaire.²⁶ Factor analysis results into a unifactorial structure. The analysis demonstrated that 24 retained items of AWARE-Urdu possess good factor loadings $>.30$ and are explaining the 34.3% of the total variance (Table 2).

The construct validity of this factor structure was established through Confirmatory factor analysis (CFA) by using AMOS 21. This was done by determining the indices of goodness fit for all the items that constitute the AWARE-Urdu so as to validate those items for our sample of study. Results indicate that the model

possesses good indices for the fitness (Model-1) which demonstrate that the model is good fit for our data with error covariances applied to decrease error variance and increase the relative true variance. Model-2 however show the model fit without error covariances thus showing poor model fit (Table 3). The model is also shown in Figure 1.

Reliability: The reliability estimates for the Advance Warning of Relapse (AWARE) Questionnaire-Urdu were also estimated which indicated the existence of significantly high reliability ($\alpha = .90$).

Table 3: Confirmatory Factor Analysis of Advance Warning of Relapse Questionnaire- Urdu (Indices of Model Fit) (N=150)

Model	χ^2	Df	P	CMIN/df	Fit indices			
					CFI	NFI	TLI	RMSEA
Model-1 Second Order CFA (24 items – with error covariances)								
	408.93	212	.00	1.93	.92	.85	.90	.06
Model-2 Second Order CFA (24 items – without error covariances)								
	805.18	252	.00	3.19	.72	.64	.69	.10

Note. χ^2 = Chi-square, df = degree of freedom, CFI = Comparative Fit Index, NFI = Non-Normed Fit Index, TLI = Tucker Lewis Index, RMSEA = Root Mean Square Error of Approximation

DISCUSSION

The topic of relapse among the drug addicts is of due importance and has been studied in the past^{23,29}. Due to the importance of this construct it is a vital need to measure it across cultures. This purpose could be achieved by translating the instrument measuring relapse prevention in to the culturally relevant language. In the current study the Advance Warning of Relapse (AWARE) Questionnaire²⁶ was translated in to Urdu language. This instrument assesses the warning signs of relapse whose timely diagnosis could help to prevent relapse.³⁰ The translated version of this instrument could thus help to address the cultural variability and making the measure conceptually understandable as well as reliable across the culture²⁴.

Forward-Back translation approach was employed to obtain the translated version.²⁷ Two items; Item-22 "I think about drinking" and Item-28 "I am drinking out of control" were modified during the translation phase. In these statements the word "drinking" is replaced by "drug use" because the instrument was to be administered on drug addicts for our research whereas originally the instrument was developed and administered on alcoholics (Table 1). The temporal validity of Urdu version was established by determining the test-retest reliability which provides evidence that the translated version of scale give reliable scores over a time lapse.

The construct validity was also established through Exploratory factor analysis (EFA) and Confirmatory factor analysis (CFA). EFA resulted to obtain a unifactorial structure retaining 24 out of 28 items of the original version (Table 2). Item-8 "I become successful in every plan that I make", Item-14 "I have good eating habits", Item-20 "I am able to think clearly", and Item-26 "I do such activities through which I could abstain from addiction" were removed because of possessing poor factor loadings; which indicated that these items are not significantly explaining variance in the warning signs of relapse as measured by AWARE-Urdu. The reason behind this could be the maintenance of social desirability as all the above-mentioned items are negative predictor of relapse. Literature also supports the fact that drug addicts have a strong desire to maintain socially desirable character and thus exhibit response editing, which is under or over response rate due to the stigmatization being associated with the behavior of addiction³¹.

The factor structure obtained as the result of EFA was confirmed by using Confirmatory factor analysis (CFA). CFA help express the degree of variation between the empirical and predicted factor analysis structures through the measure of chi-square (χ^2) and the good fit indices²⁵. The indices of model fit (Table 3) provide the support for the construct validity of AWARE-Urdu. The reliability estimate provides the support for the reliable nature of scores on AWARE-Urdu.

CONCLUSION

Relapse, that is a return to addictive behavior signified by recurrence of past condition that exist before treatment, is observed among majority of the drug addicts. It is thus a topic of great interest to be studied. A translated version would help to obtain information more conveniently from drug addicts, however no Urdu translated version is yet devised. The present study thus aimed to translate and validate the instrument for assessing relapse among drug addicts; that is, Advance Warning of Relapse (AWARE) Questionnaire. Findings demonstrate the valid and reliable nature of AWARE-Urdu. The validated Urdu version of AWARE can be used by the researchers to study relapse in drug addicts with understanding of Urdu language. There are also certain limitations; such as the study lacked women sample and comprised only of male drug addicts. The variable sample using random sampling from all the provinces could help in generalization. The cross-language validity for the scale was not established due to unavailability of bilingual sample of drug addicts.

Conflict of interest: Nil

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