

Cross-cultural adaptation and validation of the Drug and Drug Problems Perceptions Questionnaire for Brazil

Adaptação transcultural e validação do *Drug and Drug Problems Perceptions Questionnaire* para o contexto brasileiro

Adaptación transcultural y validación del *Drug and Drug Problems Perceptions Questionnaire* para el contexto brasileño

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Abstract

Background: The health field has been studying attitudes with the purpose of investigating their relationship with the several practices that are part of their action scope. In nursing, one of those perspectives refers to students' attitudes about working with alcohol and/or drug users.

Objective: To perform the translation and cross-cultural adaptation, to test the internal consistency and construct validity of the scale Drug and Drug Problems Perceptions Questionnaire in a population of Brazilian nursing students.

Methodology: Methodological study, with Brazilian nursing students ($N = 246$) of technical and higher courses. The translation and cross-cultural adaptation were carried out and the principal component analysis and Cronbach's alpha calculation were conducted.

Results: The results were consistent with the organization of the dimensions proposed by the authors of the original version, in spite of the difference in the structure of the items that constitute them. The overall internal consistency was $\alpha = 0.85$.

Conclusion: The instrument was considered cross-culturally adapted and showed good values of construct validity and internal consistency.

Keywords: validation studies; attitude; nursing; students, nursing; nursing evaluation research

Resumo

Enquadramento: A área da saúde tem estudado atitudes com o intuito de investigar a sua relação com as diversas práticas que fazem parte do seu rol de atuação. Uma dessas perspectivas, na enfermagem, refere-se às atitudes dos estudantes sobre o trabalho com indivíduos que usam ou abusam de álcool e/ou drogas.

Objetivo: Realizar a tradução e adaptação transcultural, testar a consistência interna e a validade de construto da escala *Drug and Drug Problems Perceptions Questionnaire* numa população de estudantes de enfermagem brasileiros.

Metodologia: Estudo metodológico, com estudantes de enfermagem brasileiros ($N = 246$) de nível técnico e superior. Foi realizada a tradução e adaptação transcultural do instrumento e procedeu-se à análise de componentes principais e cálculo do alfa de Cronbach.

Resultados: Os resultados foram consistentes com a organização das dimensões propostas pelos autores da versão original, apesar da diferença na estrutura dos itens que as compõem. A consistência interna global foi de $\alpha = 0,85$.

Conclusão: O instrumento foi considerado adaptado transculturalmente e mostrou bons valores de validade de construto e de consistência interna.

Palavras-chave: estudos de validação; atitude; enfermagem; estudantes de enfermagem; pesquisa em avaliação de enfermagem

Resumen

Marco contextual: En el área de la salud se han estudiado actitudes con el fin de investigar su relación con las diversas prácticas que forman parte de su papel de actuación. Una de esas perspectivas, en la enfermería, se refiere a las actitudes de los estudiantes sobre el trabajo con individuos que consumen o abusan de alcohol y/o drogas.

Objetivo: Realizar la traducción y adaptación transcultural, probar la consistencia interna y la validez de constructo de la escala *Drug and Drug Problems Perceptions Questionnaire* en una población de estudiantes de enfermería brasileños.

Metodología: Estudio metodológico, con estudiantes de enfermería brasileños ($N = 246$) de nivel técnico y superior. Se realizó la traducción y adaptación transcultural del instrumento y se procedió al análisis de componentes principales y al cálculo del alfa de Cronbach.

Resultados: Los resultados fueron consistentes con la organización de las dimensiones propuestas por los autores de la versión original, a pesar de la diferencia en la estructura de los ítems que las componen. La consistencia interna global fue de $\alpha = 0,85$.

Conclusión: El instrumento se consideró adaptado transculturalmente y mostró buenos valores de validez de constructo y de consistencia interna.

Palabras clave: estudios de validación; actitud; enfermería; estudiantes de enfermería; investigación en evaluación de enfermería

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Introduction

The attitudes can be defined as categories of evaluative responses regarding an object, person, or group and are composed of affective, cognitive, and behavioral components. It is a state of mental readiness susceptible of change since these evaluative responses can be perceived as learned and not innate predispositions (Harling & Turner, 2012). This topic has been widely studied in the field of nursing, once it is connected to the relational aspects and can affect positively or negatively the provided care, depending on the knowledge and skills of the professional (Melo et al., 2017; Takano, Kawakami, Miyamoto, & Matsumoto, 2015).

Several studies on the work with individuals who use or abuse alcohol have been conducted in Brazil, with the use of psychometric instruments that have been validated for samples of nurses and/or nursing students (Carraro, Rassool, & Luis, 2005; Pillon, Laranjeira, & Dunn, 1998; Vargas, 2011; Vargas & Luis, 2008).

In the case of evaluation of therapeutic attitudes in relation to individuals who use or abuse drugs (except alcohol), the Nursing Education in Alcohol and Drug Abuse (NEADA) has already been employed in Brazil, an adaptation of the General Attitude and Belief Scale, which is part of a training program on alcohol and drugs of the United States of America (USA) for nurses, nursing students and teachers in the field (Lopes, Lemos, Lima, Cordeiro, & Lima, 2009; Lemos, Pena, Cordeiro, Lima, & Lopes, 2007). For this scale, only the procedures of translation and cross-cultural adaptation are described (Carraro et al., 2005). Therefore, it is evident there is a scarcity of reliability and validity studies which show in detail the psychometric properties of instruments that evaluate therapeutic attitudes in relation to drugs and their users in Brazil.

In view of this, this study aims to perform the translation and cross-cultural adaptation, test the internal consistency and the construct validity of the Drug and Drug Problems Perceptions Questionnaire (DDPPQ), called DDPPQ-br, in a population of Brazilian nursing students.

Background

Although in Brazil alcohol is the major cause for

death and other damage of multiple kinds (Caetano, Madruga, Pinsky, & Laranjeira, 2013), several drugs are considered relevant from an epidemiological point of view, as they associate with serious problems of mental health, crime, and violence (Claro et al., 2015).

The nursing professionals who deal with this kind of problems in their daily lives need to be ready to provide care in an integral way for people who use drugs. Previous studies have demonstrated that the nurse-patient relationship is quite affected by negative attitudes influenced by the stigmata, not only among nurses, but also among nursing students (Anandan, Cross, & Munro, 2016; Harling & Turner, 2012).

Within this context, evaluating the attitudes can be a means to predict the behavior of a professional in a certain situation. However, research related to the topic, conducted in the main health indexing databases such as Latin American and Caribbean Literature in Health Sciences (LILACS); the Spanish Bibliographic Index of Health Sciences (IBECES); Medical Literature Analysis and Retrieval System Online (MEDLINE) and Scientific Electronic Library Online (SciELO), has identified the need for greater focus in the variable of attitudes of nursing professionals regarding individuals who use and abuse of drugs (excluding alcohol) and also for specific psychometric instruments validated for the Brazilian context that could evaluate their attitudes.

A useful tool to measure this construct is the DDPPQ, an instrument originally adapted and validated for the English language (United Kingdom), which measures the attitudes of professionals who work with individuals who use or abuse drugs, except alcohol (Watson, Maclaren, & Kerr, 2006). It is an adaptation of the Alcohol and Alcohol Problems Perceptions Questionnaire (AAPPQ; Terhorst et al., 2013) and has been used in Japan and in the United States (Howard & Holmshaw, 2010; Takano et al., 2015).

The reason for the DDPPQ is based on the theoretical structure of the AAPPQ, which was designed to assess the concepts of role security (in this case, to assist the individual who uses and abuses drugs) and the therapeutic commitment. The assumptions of this theory, which consist in the domains of the instruments, refer to how much adequate knowledge

the professional considers to have in order to perform its role (role adequacy) and how apt they consider to be to deal with the problems associated with the use of alcohol/drugs of the patients (legitimacy). The therapeutic commitment encompasses the situational factors that contribute to the motivation of professionals to work with individuals who use or abuse alcohol, the expectations of professional satisfaction and self-esteem when becoming involved with this type of clinical practice (Terhorst et al., 2013; Watson et al., 2006).

The study of validation and test-retest reliability of the original version of the DDPPQ was carried out in a stratified random sample, composed of 672 professionals with different trainings (physicians, clinical psychologists, occupational therapists, and nurses) who worked in several mental health services. A principal component analysis (PCA) confirmed its construct validity and proved the presence of five subscales of the instrument, from its factorial organization: role adequacy; role support; job satisfaction; role-specific self-esteem and role legitimacy (Watson et al., 2006).

As regards its composition, the DDPPQ is an instrument composed of 20 items, extracted from an adaptation of the AAPPQ that originally contained 30 items. The items consist of statements, which can be evaluated on a scale ranging from 0, *strongly agree*, to 7, *strongly disagree* (Watson et al., 2006).

Research Question

To what extent does the DDPPQ, translated and cross-culturally adapted to Brazilian Portuguese, present good psychometric characteristics for use with nursing students in Brazil?

Methodology

A cross-sectional and methodological study was conducted. Data were collected at two technical level institutions and two others of higher level of the municipality of Barra do Garças, State of Mato Grosso, Brazil. All nursing students of the institutions were invited to participate (total of 537), thereby constituting a non-probabilistic sample by convenience with the students who

agreed to participate in the study. The following inclusion criteria were applied: being a regularly enrolled student in the technical or higher nursing course and being 18 years or more of age. The exclusion criterion was: does not respond to the research instruments fully. The use of the DDPPQ was authorized partly by the main author of the original version. As regards the Resolution 466/12 of the National Health Council, Brazil, the study was approved by the Research Ethics Committee of the Federal University of Mato Grosso, Brazil (Opinion 45678).

The translation and cross-cultural adaptation of the DDPPQ was carried out in compliance with the guidelines proposed by Beaton, Bombardier, Guillemin, e Ferraz (2000): translation and synthesis; retranslation; a committee of judges and pre-test.

The translation of the original DDPPQ, from English to Portuguese, was made by two Brazilian researcher specialists in the field of alcohol and drugs and proficient in the English language. The two versions were presented to 10 nursing students and they were asked to point out, for each of the 20 items, which of the translated versions was more understandable, and if there was any suggestion to improve this item, as well as to give their opinion on the scope of the instrument in relation to *therapeutic attitudes*. An analysis was performed using the reviews and identification of common problems that have been highlighted.

Afterward, a single final version of the instrument was elaborated in Brazilian Portuguese, which was, in turn, sent to a bilingual professional in the area of languages, who was not familiar with the original version of the scale. This person performed its retranslation. Subsequently, a committee of judges was constituted in person, composed of three researchers with experience in the adaptation of instruments, of whom two were nurses and one a bilingual psychologist. Then, the original instrument in English was compared to its Portuguese version, which underwent a retranslation. This committee deemed it necessary to make a small adjustment in two items of the instrument (6 and 8 of the original instrument) and, then, accepted a final version of the scale in Portuguese, which was the product of this phase of the study (DDPPQ-br).

Finally, nine nursing students were gathered for the pre-test stage, who answered to the adapted version of the instrument and were inquired about what they understood of each item. There were no discrepancies.

In its entirety, the survey instrument was composed of sociodemographic information and the DDPPQ-br scale and was applied in two moments (with the space of 1 month between an application and the other) in educational institutions, through prior contact. Data were collected between the months of May and July 2012.

To analyze the data, the IBM SPSS Statistics software, version 17.0, was used as a resource. Descriptive statistics were calculated for the sociodemographic data of the participants (simple habits and standard deviation). For the assessment of the construct validity, the adequacy of the sample was evaluated by the KMO index (Kaiser-Meyer-Olkin) and also by the Bartlett's test of sphericity (CI = 95%). The PCA was conducted, followed by a varimax rotation.

The composition of components retained in the analysis with eigenvalue higher than 1 was taken into account, and the items with factor loadings lower than 0.5 were excluded, base on the classification of data correlation in an matrix: $\alpha > 0.90$ = excellent; $\alpha > 0.80$ = good; $\alpha > 0.70$ = acceptable; $\alpha > 0.60$ = questionable; $\alpha > 0.50$ = poor and $\alpha < 0.50$ = unacceptable. The internal consistency of the instrument, as a reliability measure, was estimated using Cronbach's alpha coefficient (α ; Damásio, 2012). Initially, the 20 items of the DDPPQ-br were included to carry out the PCA.

Results

The sample was composed of 235 nursing students of technical and higher level (45.8% of the researched population). The average age of the sample was 25.6 years ($SD \pm 7.27$). The sociodemographic information is shown in Tables 1 and 2.

Table 1
Absolute and percentage distribution of information on the year of the course and the type of institution in which the nursing students are enrolled (N = 235)

Sample 1	Higher level		Public		Private	
	No.	%	no.	%	no.	%
1st year	22	93	6	2.6	16	6.8
2nd year	31	13.2	6	2.6	25	10.6
3rd year	62	26.4	27	11.4	35	14.9
4th year	71	30.2	30	12.8	41	17.4
Subtotal	186	79.1	69	29.4	117	49.7
Sample 2	Technical level		Public		Private	
	No.	%	no.	%	no.	%
1st year	9	3.8	-	-	3	1.3
2nd year	40	17	22	9.3	24	10.2
Subtotal	49	20.8	22	9.3	27	11.5

Table 2
Absolute and percentage distribution of sociodemographic information of nursing students (N = 235)

	No.	%
Gender		
Male	36	15.3
Female	199	84.7
Occupation		
Already works in the health field	66	28
Works outside the health field	11	4.7
Does not work	158	67.3
Have you ever assisted patients with problems related to alcohol and/or drug use?		
Yes	149	63.4
No	86	36.6

The adequacy index of the KMO sample was 0.815 and the sphericity test $X^2 = 1805.010$ ($p = 0.000$), thereby rejecting the null hypothesis that there is no correlation between the items of the instrument. Thus, it was found that the data matrix could be considered apt to perform the factorial analysis (Damásio, 2012).

The result was the same structure with the five components of the original scale DDP-PQ and items with factor loadings lower than 0.5 were eliminated. Therefore, the items 13,

14, 15, and 20 were excluded.

The Cronbach's alpha coefficient was once again calculated for the instrument in its entirety (16 items, $\alpha = 0.85$) and also for each component of the instrument. It was found that the internal consistency of the DDP-PQ-br did not depend, in fact, on such items. Finally, the 16-item scale was again once more submitted to a new PCA for verification of the loadings. Five subscales were found, according to Table 3.

Table 3
Structural matrix and factor loadings of the items of the DDPPQ-br components (N = 235)

		Factor Loading				
		1	2	3	4	5
Component 1 (Adequacy)	1. (2*). I feel I know enough about the causes of drug problems to carry out my professional role.	0.823				
	2. (4*). I feel I know enough about the psychological effects of drugs to carry out my professional role.	0.801				
	3. (1*). I consider I have a working knowledge of drugs and drug-related problems to carry out my professional role.	0.786				
	4. (3*). I feel I know enough about the physical effects of drug use to carry out my professional role.	0.777				
	5. (5*). I feel I know enough about the factors which put people at risk of developing drug problems to carry out my professional role.	0.775				
	6. (7*) I feel I can appropriately advise my patients about drug use and its effects.	0.736				
	7. (6*) I feel apt to counsel drug users on the long term.	0.710				

Component 2 (Support)	8. (12*) If I felt the need I could easily find someone who can help me formulate an approach to the drug user.	0.885				
	9. (11*) If I felt the need I could easily find someone who could help clarify my professional responsibilities.	0.851				
	10. (10*). If I felt the need I could easily find someone with whom to discuss personal difficulties when assisting a drug user.	0.625				
Component 3 (Legitimacy)	11. (9*) I feel I have the right to ask patients relevant questions about their problems related to drug use.	0.901				
	12. (8*) I feel I have the right to ask patients questions about their drug use when necessary.	0.890				
Component 4 (Satisfaction)	13. (18*). In general, one can get satisfaction when working with drug users.	0.910				
	14. (19*) In general, it is rewarding to work with drug users.	0.885				
Component 5 (Self-esteem)	15. (16*) In general, I have less respect for drug users than for other patients I work with.	0.858				
	16. (17*) I often feel uncomfortable when working with drug users.	0.845				
	Cronbach's alpha	0.90	0.78	0.84	0.84	0.64
	Percentage of explained variance	27.5	12.9	11.6	11.5	9.5
	Eigenvalue	5.6	1.8	1.5	1.4	1.3

*Number of the item in the original scale.

The five components found in this study refer to 73.3% of the variance. Thus, the DDPPQ-br was organized into five components, Component 1 being composed of items 1 to 7, related to the adequacy in function. In this component, the items focus on the feelings of the individual who provides assistance to individuals who use or abuse drugs regarding the amount of knowledge they consider to have about the causes of drug use, problems resulting from consumption, associated physical and psychological effects, risk factors and ability to do counseling. This factor refers to 27.59% of the total variance found.

Component 2, composed of items 8, 9, and 10, relates to support and includes statements regarding the ease of finding support in the form of people that may help to approach the individual who uses or abuses drugs, in order to clarify doubts about professional responsibilities, and with whom one could discuss the difficulties in the care to the substance user. This factor refers to 12.9% of the variance. On the other hand, Component 3, formed by items 11 and 12, addresses legitimacy and refers to 11.6% of the total variance. Its content relates to the feelings of the right to ask the user about drug use and related problems.

Component 4, composed by items 13 and 14, relates to job satisfaction, whose two items constitute the subscale that addresses the feelings of satisfaction and gratification when working with individuals who use or abuse drugs. Its total variance is 11.5%.

Finally, Component 5 refers to role-specific self-esteem and is composed of items 15 and 16. In this component, the items focus on respect for the individual who uses or abuses drugs and also about the discomfort in assisting this specific population. This factor explains 9.5% of the total variance found.

The study of the internal consistency of the DDPPQ-br, after the PCA, found the overall value of $\alpha = 0.859$ ($N = 235$).

Discussion

This survey presents results that indicate that the items of the DDPPQ-br are capable of preserving the theoretical model of the role security for exercising the assistance role (in this case, to the individual who uses or abuses drugs) and the therapeutic commitment. Thus, one can say that the instrument can be useful for analyzing the evaluative responses of

nursing students relating to the assistance to the individual who uses or abuses drugs and for identifying, by means of their components, which are the greatest needs for the improvement of care to this population.

The results obtained from the cross-cultural adaptation, the study of internal consistency and the construct validation of the DDPPQ-br allow affirming that its psychometric properties were very satisfactory, just as were those of the instruments that originated it (Terhorst et al., 2013; Watson et al., 2006), although it is only applied to nursing students.

It is important to clarify that, since the components are inter-independent in their original version (Watson, 2006), it was decided that in the DDPPQ-br the exclusion of items 13, 14, 15, and 20 of the original instrument does not undermine its connection with the theory in which it is based (Damásio, 2012) and, therefore, this does not harm its content validity.

The analysis based on the factor extraction method by principal components found only one item with factor loading equal to 0.62 for the DDPPQ-br. All others presented values between 0.71 and 0.91. Factor loadings between 0.61 and 0.70 indicate acceptable measurements, while values between 0.71 and 0.80 are considered good and, above these, excellent (Damásio, 2012).

In a general way, the DDPPQ-br proved to be useful and consistent in measuring the attitudes of nursing students in relation to individuals who use or abuse drugs, in spite of the difference between the adapted instrument and the original, as regards the structure of the items that comprise their respective components (Watson et al., 2006). As the results obtained in the psychometric evaluations depend, largely, on the decisions taken by the researcher (Damásio, 2012) in the process of evaluation of the DDPPQ-br, both by the committee of judges and the participants of the pre-test, it was decided that more succinct terms would be more appropriate to describe the five components of the Brazilian Portuguese version.

The first component, concerning the professional adequacy in the role, remained the same in the two versions: composed of items 1 to 7 (Watson et al., 2006). In comparison, the internal consistency, measured by Cronbach's alpha coefficient in the DDPPQ, was $\alpha = 0.94$

(Watson et al., 2006) and in the DDPPQ-br $\alpha = 0.90$. This subscale provides a theoretical structure which emphasizes the need for sufficient knowledge about aspects related to the use of psychoactive substances for the role of the healthcare professional to be carried out. This concept is linked to the therapeutic commitment, one of the bases of the construction of the original instrument (Terhorst et al., 2013; Watson et al., 2006).

The second component of the DDPPQ-br (support) maintained the 3-item composition, such as in its original version. In both versions, there was an internal consistency of $\alpha = 0.78$. The part of the theory that sustains this component describes a better effectiveness of the performance of the professional role in the presence of support (Watson et al., 2006).

In this study, items 11 and 12, which make up the component 3, are related to the understanding of the professional about the right to investigate the patients regarding their drug use and related problems ($\alpha = 0.84$). In the DDPPQ, this subscale was also represented by two items: one addresses the rights to ask about the use, and the other focuses on what the user feels about the right of the professional to question about the use of drugs when necessary ($\alpha = 0.89$; Watson et al., 2006).

In what concerns the satisfaction when working with individuals who use or abuse drugs, the DDPPQ-br included the statements 13 and 14, respectively, as a factor ($\alpha = 0.84$). In the original scale, this same factor ($\alpha = 0.80$) shares the item that depicts the satisfaction of working with individuals who use or abuse drugs, but included others, which relate to the feelings of the professional about being apt for such role and feeling that they are able to understand the user (Watson et al., 2006).

The last factor of the DDPPQ-br (items 15 and 16) concerns the self-esteem of the professional in relation to working with individuals who use or abuse drugs while mentioning the respect for the patient and the feeling of discomfort in assisting them ($\alpha = 0.64$). In the DDPPQ, the item about having less respect for the individual who uses or abuses drugs than for other customers is common, however, this same factor ($\alpha = 0.69$) found also other statements about the feeling of helplessness and failure of the professional regarding these cases (Watson et al., 2006).

Finally, the internal consistency of the DDP-PQ-br was $\alpha = 0.85$, but it is important to point out that this study has limitations inherent to the design, since ideally the methods of measurement of test-retest and/or inter-observer reliability would have been adopted, thereby evaluating the reproductiveness of the instrument over time and between different observers (Manzi-Oliveira, Balarini, Marques, & Pasian, 2011). On the other hand, the study proposes a useful instrument for measuring attitudes related to the use and to the individuals who use or abuse drugs, which may be important for the formulation of educative strategies on the topic, as well as for planning care actions in the field of abuse of and dependence on psychoactive substances.

Conclusion

The cross-culturally adapted version of the DDPPQ-br, composed of 16 items, proved to be equivalent to the original version, valid, and easy to understand, therefore, one can affirm that, in fact, its application in the Brazilian context can be useful to assess the attitudes of nursing students in relation to the individual who uses or abuses drugs. The DDPPQ-br showed good levels of overall internal consistency and for each of its five components alone. The consequences for the practice of this study point to the usefulness of this instrument for the analysis of the evaluative responses of nursing students regarding assistance to the individual who uses or abuses drugs and the identification, by means of its components, of the greatest needs in order to improve the care provided to this population. Nevertheless, other studies should be conducted to assess the reliability and carry out the validation of this instrument in other populations, meaning a possibility for further researches.

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