Original Article

Psychometric Properties of the Persian Version of Volitional Questionnaire in Patients with Severe Mental Illnesses

Moslem Cheraghifard[1]*, Narges Shafaroodi[1], Mitra Khalafbeigi[1], Farzaneh Yazdani[2], Faeze Alvandi[3]

[1]Department of Occupational Therapy, School of Rehabilitation Sciences, Iran University of Medical Sciences (IUMS), Tehran, Iran
[2]Department of Sport, Health Sciences and Social Work, Faculty of Health and Life Sciences, Oxford Brookes University, Oxford, UK
[3]Department of Occupational Therapy, School of Paramedical & Health Sciences, Zanjan University of Medical Sciences, Zanjan, Iran

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ABSTRACT

Background: The volitional questionnaire is an observational tool to assess motivation, which is based on the MOHO model and completed by an assessor based on the individuals' observation when performing an occupation or activity. The present study aims to translate and evaluate the validity and reliability of this instrument in individuals with severe mental illnesses and to provide an appropriate tool for volitional assessment.

Methods: In this study, the volitional questionnaire was translated into Persian according to the IQOLA protocol. To assess the content validity, an expert panel was held with six experts. The face validity of the test was measured through completing a questionnaire by ten occupational therapists. To investigate the inter-rater reliability of the test, two testers completed the questionnaire for 30 individuals. The internal consistency of the instrument was calculated by performing the Cronbach's alpha coefficient, through completing the questionnaire for 98 individuals.

Results: The participants in the expert panel stated that concept of motivation is properly reviewed by the items of questionnaire. All the questionnaire items had a significant important score of 0.7, indicating the suitability of its face validity. Inter-rater reliability (ICC = 0.93) was ideal, and the internal consistency of the questionnaire (Cronbach's α = 0.86) was appropriate.

Conclusion: The questionnaire has desirable validity and reliability and can be used by specialists as a suitable tool for clinical evaluation and therapeutic planning of individuals with severe mental illnesses.

Introduction

Motivation is the most basic need to start a movement or an activity which characterizes the type and priority of individual choices [1]. The motivation for the type of behavior performed by individuals influences the amount of effort and time it takes to achieve the objectives [2]. In the field of rehabilitation sciences, the importance of motivation can be explained in several ways. Firstly, there

is a direct relationship between level of motivation, level of performance, and individual autonomy in different areas of daily life, which is one of the goals of rehabilitation interventions. Secondly, the extent and intensity of participation in rehabilitation interventions are influenced by the client's motivation. Also, motivation is related to one's perceptions of their abilities and the quality of learning ultimately derived from rehabilitation interventions [3, 4]. Regarding the above-mentioned explanations, motivation can be considered an important factor in the results of rehabilitation interventions, particularly in severe mental illnesses. Severe mental illnesses include disorders causing psychiatric symptoms such as schizophrenia,

Corresponding author: Moslem Cheraghifard, Mirdamad Blvd., Madar Sq., Shahnazari Str., Tehran, Iran. *Tel:* +98 9129232062
E-mail: Moslem.cheraghifard@gmail.com

schizoaffective, and bipolar disorder, as well as major depression causing distortions of perception, cognition, thinking, and motivation, and in some cases, hallucinations and delusions [5]. These people have usually little incentive to participate in the treatment process, which aggravates the effect of symptoms on practicing daily activities, thereby reducing individuals' quality of life. Reduction or lack of motivation for doing routine works will change lifestyle and increase self-harming behaviors and reduce mobility and physical activity, thereby increasing drug dependence, obesity, and inappropriate diets [6, 7]. Investigating the volitional status and providing feedback to the treatment team to decide on the type and course of intervention, as well as awareness of the individual and changes in environmental conditions can be considered critical factors in the outcome of interventions [8]. Motivation can be tested on several levels and in several ways. At the nerve level, it can be assessed by examining brain function; at the psychological level, values, goals, and pleasures of the individual can be evaluated; and at the level of behavior, it is done by examining the process of choosing, the duration, and intensity of the activities [9]. Since evaluation at the nerve level is costly and time-consuming, and self-reported evaluations do not have sufficient validity in individuals with severe mental illnesses due to cognitive problems such as impai9red judgment and self-awareness and difficulty in perceiving reality, surveying at the level of behavior and observing individuals' performance are a more appropriate method to assess the motivation in this population [10].

One of the most important tools to assess motivation at the level of behavior which is used by occupational therapists is "Volitional Questionnaire" (VQ). The Volitional Questionnaire is an observational method of gathering data on motivation designed for individuals who are unable to self-report their own motives regardless of their verbal or cognitive abilities.

This tool has been designed based on the Model of Human Occupation (MOHO) and is complemented by assessors or therapists based on observing the clients when performing an occupation or activity. With the aid of a volitional questionnaire, in addition to evaluating the level of motivation, the impact of activities as well as positive and negative environmental factors on clients' motivation can be also considered. The questionnaire consists of 14 items, and based on the level of motivation, it has been divided into three levels, including exploration, competence, and achievement; each item is scored on a 4-point scale [11]. Regarding the lack of valid and reliable instruments in Iran for motivation, particularly at the behavioral level of individuals with severe mental illnesses as well as the importance of motivation in the process of treatment and rehabilitation, this study aims to translate and assess the validity and reliability of the volitional questionnaire in individuals with severe mental illnesses.

Methods

This study is a non-experimental descriptive study. Initially, the VQ was translated into Persian, after which

the content validity, face validity, internal consistency, and inter-rater reliability of the questionnaire were evaluated.

The four-step international quality of life assessment (IQOLA) protocol was utilized to translate the questionnaire from English into Persian [12]. In the first step, the questionnaire was independently translated into Persian by two well-versed English speakers (one occupational therapist and one English language expert). In the next step, the two translated texts were compared and reviewed and consulted with translators. Also, concepts and translations were discussed at a meeting of experts, with the presence of six experts (a psychiatrist, three doctors of occupational therapy, a master's degree in psychology, and a master's degree in occupational therapy). All of them worked in mental health field and had more than six years of experience in this field. To choose the most suitable translation for the phrases, the first translations were combined to make a joint Persian version of the questionnaire. Therefore, the questionnaire became a unitary translation. The final translated version was then given to an English-speaking person who was fluent in Persian and had not seen the original text for translating from Persian into the original language (backward translation). The purpose of this work is to ensure greater accuracy of the translation of the questionnaire. In the last step, the translated version was sent to the VQ developer team to be compared to the questionnaire. By comparing the version translated into English to the original text, the same conceptual questionnaire and the overall quality of the translation were investigated. The content validity of the questionnaire was tested qualitatively with the participation of the participants in the translation process. The expert panel was initiated with discussing the concept of the MOHO model to examine the content validity, and then the items of the VQ were examined. Each of the items was investigated in terms of importance, consistency with the concept of motivation, and writing style. The discussion about the items continued to the point where all members came to a complete agreement. The face validity was also evaluated by quantitatively scoring each item by 10 occupational therapists through completing 5-point Likert scale including very important (5), important (4), relatively important (3), slightly important (2), and unimportant (1). Then the impact score of instrument items was calculated by the following formula: Item Impact Score= frequency×Importance [13].

To explore the reliability of the test, internal consistency [14] and Inter-rater reliability [13] were used. In addition, to determine the internal consistency of the questionnaire, Cronbach's alpha coefficient was used. Having prepared the test and verified the content and formality of the questionnaires, and after obtaining the required permissions, a questionnaire was completed for 98 individuals diagnosed with one of the severe mental illnesses based on the DSM-5 criteria, whose ages were 20 years or older. The research took place in rehabilitation clinics and hospitals affiliated to Iran University of Medical Sciences. The observation time

was a minimum of 10 minutes and a maximum of 30 minutes. Note that if the person was present in the activity environment for less than 10 minutes, he was excluded from the study. To assess the inter-rater reliability, the questionnaire was simultaneously completed for 30 clients by two occupational therapists. Ethical approval for this study was obtained from the Ethics Committee of Iran University of Medical Sciences (IR.IUMS. RIC.1394.9311355002) and informed consent form was completed by the study participants and their companions.

Results

In this study, 98 patients with severe mental illnesses were studied, of whom 59 (60%) were male and 39 (40%) were female. The age range of the population was 22-67 years old with an average age of 38.7 and a standard deviation of 11 (Table 1). The validity of the VQ was investigated at the expert meeting. The experts had been chosen based on their education level (at least master's degree), having at least 5 years work experience in field of mental health, and accessibility. The percentage of agreement among the participants was 100%. In Table 2, the changes that should be made during the validation process in the expert panel have been applied on the questionnaire. To evaluate the validity of the questionnaire, the important score was obtained from reviewing the outcomes of the 10 occupational therapists working in the mental health field. The results indicated that all items of the questionnaire had an important score above or equal to 0.7 and had desirable factual validity. Table 3 reports the important scores of the questionnaire items. To evaluate the internal consistency of the questionnaire, Cronbach's alpha coefficient was used, where the sample size was 98 for internal consistency of the questionnaire. Cronbach's alpha for the entire

questionnaire was 0.86, indicating that the internal consistency of the VQ was optimal. Table 4 summarizes the correlation matrix between the three levels and the entire questionnaire. The resulting scores represent a greater correlation between items that are at the same level as the trilogy of motivation compared to other items. The interclass correlation coefficient (ICC) was used to test the reliability. According to the obtained results, the correlation coefficient between the testers in the entire test was 0.93, demonstrating the desirable reliability of the test.

Discussion

In this study, the content validity of the test was qualitatively evaluated in a panel of experts with the presence of six experts. The agreement between the questionnaire items among the members was 100%, and the participants at the expert panel stated that the content validity questionnaire was necessary to examine the concept of motivation. In the initial version of the questionnaire, 30 occupational therapists who were familiar with the MOHO model were invited. After discussing the questionnaire, the items selected for the questionnaire described motivation appropriately [15]. In the research, in the fourth version of the questionnaire (the latest version) as well as the validity of the Swedish version of the questionnaire (SVQ), the participants in the expert panels stated that the questionnaire's content validity was appropriate [16]. In a review of the Chinese version, experts stated that the questionnaire examined the same concept and described motivation properly [17]. Finally, the results of this study were in line with those of previous studies on the content validity investigation.

The important issue in the inter-rater reliability is examination of the correlation between the obtained results of the tests performed by different testers on the

Table 1: Demographic variables of participants in the study

Variables		Frequency	Frequency percentage
Sex	Male	59	60.2
	Female	39	39.8
Disorder	Schizophrenia	32	23.7
	Major depression	27	27.6
	Bipolar	22	22.4
	Schizoaffective	17	17.3
Diseases duration	Less than 4 years	51	52
	4-8 years	24	24.5
	8-12years	11	11.2
	More than12 years	12	12.2

Table 2: Changes made during the expert panel

Question	Translation	Agreed text
Shows that an Activity is Special or Significant	Make an activity special / special	Indicates the importance and specificity of an activity
Indicates Goals	Shows goals	Shows goals during activity
Stays Engaged	(In activity) remains engaged	Maintains an emotional relationship with activity
Pursues Activity to Completion/Accomplishment	Activity continues to complete / achieve achievement	Pursuing activity to the end or gaining success.
Invests Additional Energy/ Emotion/Attention	Energy / excitement / double attention	Energy / Excitement / Spend more attention.
Seeks Additional Responsibilities	Looking for additional responsibilities	Looking for more responsibilities

Table 3: The score of impact of each item on the validity of the VQ questionnaire

Item	Score
Looks for challenges	2.72
Looks for more responsibilities	2.17
Energy / Excitement / Spend more attention	3.20
Pursuing activity to the end or gaining success	3.36
Tries to correct the mistakes	2.34
Tries to solve the problems	4.50
Proud / proud	3.60
Maintains an emotional relationship with activity	4.70
Shows goals during activity	4.80
Indicates the importance and specificity of an activity	3.82
Shows preferences	2.54
Tries new things	2.56
starts actions / tasks	4.80
He shows curiosity	4.27

Table 4: Matrix of correlation between levels of volition and the total questionnaire

	Exploration	Competency	Achievement	Total
Exploration	1	0.615	0.399	0.755
Competency	0.615	1	0.617	0.915
Achievement	0.399	0.617	1	0.824
Total	0.755	0.915	0.824	1

scale; if the repeatability among the testers is higher than 0.8, it indicates that the inter-rater reliability is excellent. In the current study, the correlation between the raters was 0.93. In the initial version, the inter-rater reliability of the questionnaire for the 14 items was 0.75, while for the 10 items, it was 0.90. [18]. In the Chinese version of this questionnaire, the correlation coefficient between the raters was 0.83. The inter-rater reliability of the Taiwanese version of the questionnaire was also reported at an appropriate level [17, 19]. In previous studies, video recording of the treatment sessions was used to assess this reliability, but in the present study, the two raters simultaneously observed the clients while performing a purposeful activity. This factor may increase the raters' awareness about the individual's performance during the examination and augment the correlation between their scores. What can be concluded generally is that the VQ questionnaire obtained good reliability among the raters.

The Cronbach's alpha coefficient for the entire test was 0.86, indicating the desired level of the internal coherence of the VQ questionnaire. Furthermore, the correlation between the questionnaire items that were at the same level of motivation or were closer to the hierarchy of questions showed a higher correlation. The degree of correlation between the items varied from 0.73 to 0.12, where the highest level occurred between item 1 (showing themselves curious) and item two (starting actions / tasks) and three (testing new things), while the smallest correlation occurred between the item one (showing themselves curious) and the item fourteen (looking for challenges). In developing the original version of the VQ, the items in the questionnaire have been well-connected and examined the same concept (motivation) [18]. In the Chinese version of the questionnaire, the Cronbach's alpha coefficient of the questionnaire was reported 1, which is ideal [19]. In

general, it can be concluded that the internal consistency of the Persian version of the VQ questionnaire has been appropriate. In addition, the questionnaire items have been designed to examine different levels of motivation such that they increase from bottom to top. These results justify this hierarchy.

The face validity examines the suitability of appearance of the instrument in terms of its writing and wording, to discover whether the users' perception of the tool purports the intended purpose [20]. In this study, to evaluate this validity, the important score of each item was calculated by ten occupational therapists. All the items in the fourteen questionnaires had a score of 0.7, indicating the appropriateness of the validity of the questionnaire.

Conclusion

In general, the VQ questionnaire was introduced as an appropriate tool for initial evaluation and examination of the effectiveness of interventions as well as study of the environmental factors affecting motivation. In addition, the questionnaire was designed to determine the position of the individual in the hierarchy expressed for motivation, and with the guidebook, to conduct interventions based on the individual's level of motivation. bearing in mind that an important source to help clients is the occupational therapy and rehabilitation service. The items of the questionnaire were ranged from easy and low level of motivation to difficult and high level of motivation which as a result provide the best challenge in interventions for clients according to their level of motivation. Considering the lack of valid and reliable tools in Iran to investigate motivation, and according to the results of this research, the VQ questionnaire can be considered an appropriate tool to

study the motivation and guidance for interventions for individuals with severe mental illnesses.

Conflict of interest: None declared.

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