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## Validation and Cross-Cultural Adaptation of the Volitional Questionnaire in an Italian Population with Psychiatric Disorders: A Cross-Sectional Study

Silvia Di Filippo<sup>a</sup>, Annamaria Servadio<sup>b</sup>, Paola Bellucci<sup>c</sup>, Giovanni Fabbrini<sup>d</sup>, Cinzia Niolu<sup>e</sup>, Rita De Santis<sup>f</sup>, Marco Tofani<sup>g</sup>, and Giovanni Galeoto<sup>h</sup> 

<sup>a</sup>Sapienza University of Rome, Roma, Italy; <sup>b</sup>University of Rome Tor Vergata, Roma, Italy; <sup>c</sup>Mental Health Center of Ariccia, Sapienza University of Rome, Roma, Italy; <sup>d</sup>Sapienza University of Rome, Department of Neurology and Psychiatry, "Policlinico" Umberto I University Hospital Sapienza-University of Rome, IRCSS Neuromed Institute Pozzilli (IS), Roma, Italy; <sup>e</sup>Department of Systems Medicine, Chair of Psychiatry, University of Rome Tor Vergata, Roma, Italy; <sup>f</sup>Department of Anatomical, Histological, Forensic and Orthopaedic Sciences, Sapienza University of Rome, Roma, Italy; <sup>g</sup>Department of Neurosciences and Neurorehabilitation, Bambino Gesù Children's Hospital, Rome, Italy; <sup>h</sup>Dipartimento di Sanita Pubblica e Malattie Infettive, Universita degli Studi di Roma La Sapienza, Roma, Italy

### ABSTRACT

The aims of this study were to translate and culturally adapt the Volitional Questionnaire (VQ) into Italian and to evaluate its psychometric properties in an Italian population of patients with psychiatric disorders. The translation process from English into Italian was carried out in agreement with the authors of the original scale. The study was carried out in three psychiatric facilities, with 33 patients with psychiatric diagnoses, who were older than 18 years, and two raters (6 total) for each facility in Rome, Italy. The psychometric properties were assessed via its internal consistency, test-retest and inter-rater reliability and construct validity through comparisons with the Barthel Index, Short Form-12, Beck Depression Inventory-II and Camberwell Assessment of Need (CAN). Results showed internal consistency, using Cronbach's alpha, was significant at 0.92. In the test-retest reliability evaluation, the intraclass correlation coefficient was 0.97 and the inter-class correlation coefficient was 0.99. The Spearman correlation showed significant results in the comparison with the CAN ( $r = -0.45$ ,  $p < 0.05$ ). These results suggest that the IT-VQ may be a valid, standardized and reliable evaluation tool that can be used to detect volitional performance improvements in a population of Italian psychiatric patients.

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Assessment tool; reliability; validity; volition; Volitional Questionnaire

Mental health is an integral part of the World Health Organization's (WHO's) concept of health and well-being, and it refers to a state of emotional and psychological well-being that can be influenced by a range of

**CONTACT** Giovanni Galeoto  [giovanni.galeoto@uniroma1.it](mailto:giovanni.galeoto@uniroma1.it)  Dipartimento di Sanita Pubblica e Malattie Infettive, Universita degli Studi di Roma La Sapienza, Roma 00185, Italy.

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cultural, socioeconomic, political and environmental factors . Therefore, good mental health allows an individual to realize himself or herself, work productively and contribute to the life of the community. Mental disorders include a wide range of problems with different symptoms. However, they are generally characterized by a combination of abnormal thoughts, emotions, behaviors and relationships with others. According to the WHO, the global burden of mental disorders has been constantly increasing in all of the countries in the world, causing major impacts on health as well as human, social and economic impacts (World Health Organization, 2017).

One of the main causes of disability worldwide is depression. Approximately 300 million people are affected globally, especially women, with an increase of 18% between 2005 and 2015. Bipolar affective disorder and schizophrenia affect approximately 60 million and 23 million people, respectively, worldwide (World Health Organization, 2017). According to the latest Mental Health Report presented in Italy by the Ministry of Health, psychiatric service users in 2016 amounted to 807,035 individuals, with users who came into with contact mental health departments for the first time during the year constituting 349,176 individuals. In 54% of the cases, the users were females, and they made up 66.9% of the patients over the last 45 years (Ministero della salute, 2016).

Occupational therapy has a long-standing history of intervention in the main areas of mental disability, including self-care, productivity, leisure time and social skills (Gibson, Amico, Jaffe, & Arbesman, 2011; Höhl, Moll, & Pfeiffer, 2017). Occupational therapy interventions aim to support individuals and their families by promoting participation and motivation in all aspects of their lives in order to achieve the reintegration, adaptation and integration of the individual at the highest level of autonomy that is possible. Specifically, in the mental health disorders there is a disadvantageous decision-making and impaired volitional control over actions, thoughts, and emotions, so research is also needed to implement the use of volition rating scales .

Motivation is very well expressed in the concept of volition developed in the Kielhoftner's Model of Human Occupation (MOHO) . The MOHO conceptualizes man as being composed of three interrelated components: volition, habituation and capacity for performance (Taylor, 2017). These are elements that interact with the environment, shaping what we choose to do, how we organize our lives and what we are able to do (Taylor, 2017). Volition refers to the motivation for occupation, which is defined as a pattern of thoughts and feelings that allows a person to carry out a dynamic volitional process that consists of anticipating, choosing, experimenting and interpreting behavior (Taylor, 2017). Volition is about values or what is considered to be important and significant to do, personal

causality or the sense of personal and effective capacity, and interests or what is pleasant and/or satisfying to do (Taylor, 2017). Volition is influenced by the environment, as represented by the spaces, objects, social environment and occupational tasks with which a person obviously has to act and react differently, depending on the characteristics of the environment (Taylor, 2017).

In the regard of a systematic performance evaluation, the Volitional Questionnaire (VQ) was developed in the 1990s as an observational evaluation tool for volition (de las Heras, 1993), and it has undergone various revisions up to the current 2003 version. The most recent study evaluated the psychometric properties of version 4.0 of the VQ (Li & Kielhofner, 2004).

The objectives of the VQ are to provide an image of a person's volition regarding specific motivational characteristics, to identify the environmental factors that support or hinder the volition of a person, to provide information regarding the activities that maximize the volition of a person, to offer a means to monitor the effectiveness of the various intervention strategies and to document the changes in the motivation of a person (reference). The use of this tool assumes a therapist's knowledge of the MOHO and the study of the manual by the therapist.

The VQ consists of 14 items that represent observable behaviors regarding a person's volition. The items refer to three levels of volition that, from lowest to highest, are exploration, competency and achievement. The questionnaire is based on the observation of a person involved in any type of activity (work, leisure, rehabilitation therapy or daily life), and it allows one to measure the level of volition of the person as well as the amount of support or stimulation required of the therapist so that the person shows certain behaviors. It takes from 5 to 30 minutes of observation, and it is advisable to repeat the observation on several occasions in different environmental contexts because individuals may not be equally motivated in all environments. After the observation, for each item there are 4 possible evaluation choices: spontaneous, involved, hesitant and passive. The VQ also contains an environmental characteristics form created to record the characteristics of the environment in which the activity takes place.

### **Individual rehabilitation project and volition**

Within the context of an individual rehabilitation project (IRP), it is central to observe a person engaged in an occupation with the aim of understanding to what degree a person is motivated, especially when he/she is not able to self-evaluate, and what the relationship is with his/her occupational performance (Garachana Carpintero & Santamaría-Vázquez, 2017).

According to the Italian Ministry of Health the IRP defines the prognosis, expectations and patient's priorities and that of family members; the project is shared and agreed with the patient and when possible also with the family and caregivers; it defines the adequate and appropriate characteristics of the various interventions as well as the health care conclusion in relation to the results achieved. The interventions deriving from the rehabilitative project, which are centered on various detected problems, require a systematic performance evaluation and definition of the aims in order to verify the expected end result. Thus, the concept of volition emphasizes the fact that motivation is the result of a dynamic interaction between the inner thoughts and feelings of a person and the characteristics of their environment.

The VQ has been validated in the original version (Li & Kielhofner, 2004), and it has been translated and validated in two different languages: Swedish (Ågren & Kjellberg, 2008) and Chinese (Yang, Tseng, Lee, Chung, & Pan 2007). The Volitional Questionnaire (VQ) could be an important addition to the systematic performance evaluation required in the IRP. However, the VQ has never been translated into Italian; therefore, the purposes of this study were to translate the VQ into Italian and to evaluate its psychometric properties.

## Methods

### *Design and instrument*

This study was conducted by a research group composed of medical doctors and rehabilitation professionals from the Sapienza University of Rome and from the Rehabilitation & Outcome Measures Assessment (R.O.M.A.) association. Over the last few years, the R.O.M.A. association has dealt with the validation of many outcome measures in Italy (Berardi, Biondillo, et al., 2018; Berardi, De Santis, et al., 2018; Covotta et al., 2018; De Mare, Cantarella, & Galeoto, 2018; Galeoto, Berardi, et al., 2018; Galeoto, Colalelli, et al., 2018; Galeoto, Colucci, et al., 2018; Galeoto, Sansoni, et al., 2018; Galeoto et al., 2019; Marquez et al., 2018; Massai et al., 2018; Savona et al., 2019).

In order to obtain permission to use the assessment tool, the original authors of the VQ from the MOHO Web Clearinghouse of the University of Chicago in Illinois as the current copyright holder of the original instrument were contacted. After entering into a translation agreement with the holders, the translation process from English into Italian was carried out. The original version of the VQ is available on MOHO Web Clearinghouse of the University of Chicago in Illinois website (<https://www.moho.uic.edu/>).

### ***Translation and cultural adaptation***

The original version of the VQ was translated into Italian by three native English speakers who produced three independent Italian translations. The resulting translations were synthesized by a translator not involved in the previous translations. Subsequently, an Italian translator worked on the temporary version of the VQ, translating the questionnaire back into English without having seen the original version. The back-translation was submitted to the copyright holders of the original version for their evaluation and comparison, and they responded with positive feedback. Finally, the final Italian translation was revised by a rehabilitation professional in order to adapt the translated version to the Italian culture and minimize the differences when compared to the original version. The final revision was conducted on the basis of the small changes suggested by the team of experts of the MOHO Web Clearinghouse of the University of Chicago in Illinois.

### ***Sample***

Based on the previous validations of the instrument (Ågren & Kjellberg, 2008; Li & Kielhofner, 2004; Yang et al., 2007), 33 participants over the age of 18 years with psychiatric disabilities were recruited. Individuals with severe psychiatric problems that could affect the capacity of respond to the tests presented (as determined by clinical screening) were excluded from the study. The diagnoses were based on the criteria of the 9<sup>th</sup> revision of the International Classification System of Diseases (Prevention & Statistics, 2013).

This was a multicentre study as the participants were recruited by three Italian rehabilitation centers specialized in the rehabilitation of individuals with psychiatric disorders from July to November of 2018. The participants received assistance at minimum to moderate levels of care in long-term care facilities in which occupational therapy played a fundamental role in the performance of daily life activities and in work and social reintegration.

Those participants meeting the inclusion criteria were informed about the study, asking them to be available to be observed by raters in various contexts and to the administration of evaluation scales. All of the 33 participants and therapists participating provided their informed consent before the start of the study (Galeoto, De Santis, Marcolini, Cinelli, & Cecchi, 2016). For each participant, the following demographic information was collected: age, sex, employment status and diagnosis. Each participant was observed in various situations such as carrying out daily life activities, group therapies for social skills, various manual activities and orthotherapy

**Table 1.** Demographic characteristics for the 33 participants.

Variables	% (n)
Gender men n(%)	54.5 (18)
Employment status n(%)	
• Employed	27 (9)
• Unemployed	55 (18)
• Other	18 (6)
Diagnosis n(%)	
• Schizophrenia and other psychosis	43 (14)
• Mood disorder	30 (10)
• Bipolar disorder	12 (4)
• Personality disorder	9 (3)
• Anxiety disorder	3 (1)
• Impulse control disorder	1 (3)

and gardening. The characteristics of the sample are summarized in [Table 1](#). The participants had a mean age of 41 years.

The six raters were occupational therapists with at least 10 years of experience in general as well as psychiatric rehabilitation context and use the MOHO model. The VQ manual was also translated into Italian to give to the raters the opportunity to familiarize with the IT-VQ assessment as they had never used it before this study. In each structure one of the two raters already provided occupational therapy services with the study participants.

### ***Instruments***

The other four outcome assessments used were the Italian translations in comparison with the IT-VQ. The Barthel Index is a tool that measures the degree of disability through 10 items concerning the activities of daily living and mobility. It has scores ranging from 0 (totally dependent) to 100 (totally independent) (Castiglia et al., 2017). The SF12 is a self-administered questionnaire that assesses the health status of a patient both physically and mentally (Gandek et al., 1998). The BDI-II is a self-administered tool that allows for the assessment of the presence and severity of depressive symptoms. It is composed of 21 items, with a score ranging between 0 (the absence of depressive symptoms) and 63 (severe depression) (Sica & Ghisi, 2007). The CAN is an interview that is used for the assessment of care needs, and it consists of 22 areas, four possible evaluation choices and a score from 0 to 198. It was translated into Italian, but it has not yet been validated (Ruggeri, Lasalvia, Nicolaou, & Tansella, 1999).

The Volitional Questionnaire (VQ), Barthel Index (BI), Short Form-12 (SF12), Beck Depression Inventory-II (BDI-II) and Camberwell Assessment of Need (CAN) were used as outcome measures. These assessment tools were chosen in correlation with the concept of volition itself, as expressed in the MOHO (Taylor, 2017). In particular, personal causation represents physical, intellectual and social skills and the self-assessment of one's

abilities. Therefore, it can be related to the degree of disability assessed by the Barthel Index, the quality of life assessed by the SF12, the presence and severity of depressive symptoms assessed by the BDI-II and the psychosocial functioning assessed by the CAN.

The VQ rating forms as well as the Environmental Characteristic Form are straightforward to fill out. The therapist first enters basic demographic data about the client and the time of observation. The therapist should also describe the occupational form/task observed and the setting. Then the ratings for each item are completed and comments written as the therapist sees fit, as recommended in the manual.

For all analyses, it was identified a numeric score for the four ratings of the VQ for each item. It was used 1 for “passive,” 2 for “hesitant,” 3 for “involved,” 4 for “spontaneous” and 0 for “not observed/not applicable” ratings. Even though it could be problematic to use “0” rating as “not observed/not applicable” when using cumulative score in which a higher score presumably indicates higher levels of volition, the total instance of “not observed/not applicable” ratings across participants for this study was 0%.

### **Data analysis**

To ensure that entering numeric ratings was consistent across all IT-VQ forms, raters had familiarized with VQ and studied the manual before administration. Interrater analysis was performed to confirm consistency in numeric ratings by different rater.

The reliability and validity of the Italian version of the VQ (IT-VQ) were evaluated. For the evaluation, the patients were assessed by two occupational therapists for each facility. For the evaluation of the test-retest reliability, the patients were assessed twice by the same examiner. The time interval between the test and the retest was 24 hours in order to ensure that the patient’s clinical condition remained stable. For the inter-rater observation process, the two raters were present at the patient observation at the same time but they made independent ratings. The test-retest reliability was measured by computing a 95% confidence interval for the intraclass correlation coefficient (ICC). The ICC used for the tests was intraclass correlation coefficient model (3,1). The scale was considered to be reliable with an ICC of  $>0.70$  for the repeated measurements. The internal consistency was measured in order to evaluate the homogeneity of the scale using the Cronbach’s alpha coefficient. The values can vary from 0 to 1, with good results indicated by a value greater than 0.7 (Nunnally, 1979).

The Spearman correlation coefficient was used to examine the construct validity, and the values range between  $-1$  and  $1$ .



**Table 2.** Test–retest analysis total score IT-VQ.

	Test mean $\pm$ SD	Retest mean $\pm$ SD	ICC	IC 95%	SIG
Intra-rater	31.63 $\pm$ 10.54	31.66 $\pm$ 11.58	0.97	0.91 0.99	0.01
Inter-rater	31.63 $\pm$ 10.54	32.23 $\pm$ 10.33	0.99	0.98 0.99	0.01

**Table 3.** Item-total analysis: Cronbach's alpha value for all the items of Italian Volitional Questionnaire.

	Scale mean if item deleted	Scale variance if item deleted	Corrected item- total correlation	Quadratic multiple correlation	Cronbach's alpha if item deleted
ITEM1	28.76	86.314	0.655	0.731	0.917
ITEM2	28.85	85.383	0.689	0.699	0.915
ITEM3	28.97	87.28	0.669	0.746	0.916
ITEM4	28.42	86.689	0.71	0.709	0.915
ITEM5	28.7	85.968	0.634	0.791	0.918
ITEM6	29.24	87.377	0.677	0.587	0.916
ITEM7	28.33	89.292	0.583	0.696	0.919
ITEM8	29.18	86.591	0.596	0.595	0.919
ITEM9	29.27	87.455	0.661	0.782	0.916
ITEM10	29.24	87.564	0.666	0.706	0.916
ITEM11	28.33	87.917	0.639	0.734	0.917
ITEM12	28.85	85.133	0.724	0.681	0.914
ITEM13	29.82	90.716	0.63	0.649	0.918
ITEM14	29.79	90.36	0.588	0.777	0.919
TOTAL					<b>0.922</b>

All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows.

## Results

The ICC was  $>0.70$  or  $0.97$ , and all of the values were significant ( $p < 0.001$ ). The ICC values are reported in Table 2. The interclass correlation coefficient was  $>0.70$  or  $0.99$ , and all of the values were significant ( $p < 0.001$ ). The internal consistency of the IT-VQ revealed a Cronbach's alpha coefficient of  $0.92$  for the total of all of the items. The internal consistency was calculated for the entire scale, and the item-total correlation showed positive results, as reported in Table 3. The construct validity was analyzed using the Spearman correlation coefficient to correlate the scores between the IT-VQ and the Barthel Index, SF12, BDI-II and CAN. The data (as shown in Table 4) showed a significant correlation between the IT-VQ and the CAN of  $-0.45$  ( $p < 0.05$ ).

## Discussion

The aim of this study was to translate, culturally adapt and evaluate the psychometric properties of the VQ in a population of psychiatric patients in the Italian context. This study arose from the need to have a formal way of gathering information about the will of people who are unable to express it.

**Table 4.** Construct validity analysis: Pearson's correlation coefficient between Italian Volitional Questionnaire (VQ) Barthel Index (BI), Short Form-12 (SF-12), Beck Depression Inventory-II (BDI-II) and Camberwell Assessment of Need (CAN).

	BI	SF-12	BDI-II	CAN
IT-VQ	0.36	0.08	-0.02	-0.45*

\* $p < 0.05$ .

In psychiatric patients, it is of fundamental importance to evaluate the volition of the person who is at the center of the occupational therapy project because a mental disorder can reduce the volition and occupational performance of an individual (Garachana Carpintero & Santamaría-Vázquez, 2017).

We showed that the IT-VQ displayed satisfactory psychometrics properties, namely, good reliability and validity. The test-retest reliability showed a high level of agreement between the two assessments (0.97 and 0.99, respectively). Therefore, it can be said that the test had good reproducibility because when it was administered at successive times the results obtained were consistent with those of the first administration. The ICC coefficients obtained in this study were similar to those found in the Chinese validation study (0.82) (Yang et al., 2007).

The results of this study suggested that the IT-VQ had excellent internal consistency, with a Cronbach's alpha coefficient of 0.92. These results were consistent with those obtained in the validation study of the original version (0.92) (Li & Kielhofner, 2004). However, in the Chinese validation study, the Cohen coefficient was computed (Yang et al., 2007). Moreover, it was not possible to compare the results with those of the Swedish validation study because in that study the same psychometric properties of our evaluation study were not computed, but the authors have focused their attention on the study of the utilization and content validity (Ågren & Kjellberg, 2008).

The construct validity was evaluated using the Spearman correlation, which correlated the results of the IT-VQ with those of the Barthel Index, SF12, BDI-II and CAN. It was difficult to test the construct validity because in the VQ validation studies present in the literature, this was not computed; therefore, we could not make any comparisons with our results.

The results of this study showed a statistically significant correlation with the CAN of -0.45. The other results were not statistically significant because there was no agreement between the items of the scales chosen as the 'Gold Standards' and the IT-VQ. The correlation with the CAN was only moderately strong; therefore, further studies are needed to investigate the construct validity.

### **Study limitations**

One limitation of this study was the small number of subjects contained in the sample. In the future, a larger group of participants could provide a better idea about the relationships between volition and psychiatric

patients. Another limitation was the poor correlation between the IT-VQ and the scales adopted as the ‘Gold Standards’. It is necessary to use evaluation scales in which there is greater agreement between the items, but at the moment there may be not specific evaluation tools of the volition in the Italian context. In fact, it was difficult to determine the outcome measures to be used for this study, despite trying to find a rationale that justified the choice of outcome measure for addressing construct validity. The IT-VQ is an observational assessment that yields individually relevant information about volition (i.e., criterion based assessment), and any outcome measure used for comparison would need to also be criterion based.

## Conclusion

This study on the validation of the IT-VQ has important implications for occupational therapy, giving clinicians and researchers an important tool for measuring volition in psychiatric people. As a result, occupational therapists will have a mean to measure this invisible barrier for patients, and will be able to make informed decisions when programming a rehabilitation intervention. Moreover, cross-cultural validation of assessment tools is important in order to create comparable clinical studies, authors hope that the results this study can be replicate in different cultural contexts. Specifically, the results of this investigation suggest that the IT-VQ may be a valid and reliable tool for measuring this aspect of Italian psychiatric patients. It can allow Italian therapists in clinical practice to use a valid, replicable, standardized and quickly administrable assessment tool to measure volition. In clinical practice IT-VQ can support the therapists for the process of evaluation of patients with psychiatric disorders, providing specific and concrete information about person’s volition and guiding the treatment programs and interventions occupation focused. IT-VQ helps clinicians to better understand clients’ volition in rehabilitation and long-term care. For example, when clients were known to be at the Competency level of volition for a given task, they will tend to be spontaneous in the lower-level items (e.g., shows curiosity and shows preferences) and clinicians are expected to provide extra supports with the higher-level items (e.g., pursues activity to completion/achievement and seeks challenges). This study can also provide researchers with a starting point for future validation works that can also focus on other populations such as intellectual disabilities, neurocognitive disorders, strokes, head and spinal cord injuries.

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**ORCID**

Giovanni Galeoto  <http://orcid.org/0000-0002-9043-5686>

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