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The Validity and Reliability Study of WHO Quality of Life Scale Short Form (WHOQOL-Bref) in Kazakh Language

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Abstract

The purpose of the current study is to test the validity and reliability of WHO quality of life scale short form (WHOQOL-Bref) in Kazakh language. In this sense, a total sum of 509 students, 208 men (40.9%) and 301 women (59.1), volunteered in the study. The scale was made up of 26 items and 5 sub-dimensions (General Health, Physical Health, Psychological Health, Social Relations and Environment). In the analysis of the study, Confirmatory Factor Analysis was used regarding the structural validity of the inventory and Cronbach Alpha reliability analysis was used to determine internal consistency. In the confirmatory factor analysis results, goodness of fit index values were found as $\chi^2/sd(\chi^2=936.08, sd=289)=3.23$, GFI=0.88, CFI=0.86, NFI=0.80, RMSEA=0.66, SRMR=0.52, RMR=0.47. Internal consistency coefficient numbers were determined as 0.60 and 0.90. As a conclusion, it is likely to say that "WHO Quality of Life Scale Short Form (WHOQOL-Bref) in Kazakh Language" is a valid and reliable assessment tool.

Keywords: Life Quality, Validity, Reliability

Introduction

A qualitative life or life quality has always been an important, controversial issue from the antiquity to the current time (Boylu & Pacioğlu, 2016). For the first time in history, it is likely to see that there are some arguments over life quality in the philosophical works of "State" by Plato and "Nicomachean Ethics" by Aristotle (Özüdoğru, 2013). The first person touching on life quality, although it is an indirect touch, is Aristotle. Aristotle called the last purpose of people in life as "Uudamania" and explained this understanding as "being blessed with a good soul and energy and starting to live in this way" (Özüdoğru, 2013). As a term, life quality was first mentioned in the article "On the quantity and quality of life" by Long (1960) published in Medical Times. In addition, the place and importance of life quality started to be discussed with the article of "Medicine and quality of life" (Pınar Bölüktaş, 2012).

Even though there are a great many definitions regarding life

quality in the related literature, there is no a commonly accepted definition yet. While some of these definitions explain the environmental features of life quality and some explain economic features, some others explain it with sociological and psychological features. WHO defines life quality as individuals' perception of their position in life in connection with their targets, expectations, standards and interests in the context of the cultural and value systems they have (World Health Organization, 1997). It is a wide concept influenced from physical health of an individual, psychological condition, his beliefs, social relations and environment in a complex way (Akyüz, Yaşartürk, Aydın, Zorba, & Türkmen, 2017). Life quality is related to the subjective goodness being of a person. It indicates to what extent a person is contented with his own life (İlhan, 2011). Patric and Erickson define life quality as a basic concept comprising the perception of death and life period, disability, functional status, social, psychological or physical health, and socio-cultural disadvantages (Gönülateş,



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2016). Calman defines life quality as the gap theory between what individuals gain and their expectations (Güldali, 2017). In another definition, life quality is described as the fact that an individual has the same opportunities with the others regarding how to reach such basic needs as accommodation, school and job in his own living environment and realizing them (Eyili, 2017). In most of the researches, life quality was defined as happiness, satisfaction, consistence and the concept of life quality was used as a synonym of life satisfaction, life content and happiness. Nevertheless, life satisfaction which is one of the most important determinants of life quality is individualistic. The dimensions of life quality vary depending on the studies carried out (Gümüş, 2017).

The purpose of the current study was to investigate the validity and reliability study of WHO quality of life scale short form (WHOQOL) developed by World Health Organization (WHO) in Kazakh language. The fact that Kazakh version of this scale used actively in many languages has not been developed up to now was considered to be a deficiency and it is believed that this study would be a significant source for other studies to be carried out in the future.

Method

Research Group

Similar to the studies in the related literature, the sampling group of the current study, which aimed at assessing the validity and reliability of the WHOQOL-BREF scale in Kazakhstan, was made up of a total sum of 509 students, 208 men (40.9%) and 301 (59.1%) women.

Data Collection Tools

WHO Life Quality Scale Short Form (Whoqol-Bref)

World Health Organization Life Quality Scale Short Form is the short form of World Health Organization Quality of Life Assessment (WHOQOL) with 100 question prepared to evaluate how an individual perceives life quality by reducing it to 26 questions. The scale which was comprised of close-ended questions was made up of five sub-fields as general health status, physical, social, environmental and psychological fields. General health was made up of 1st, 2nd, physical field was made of 3rd, 4th, 10th, 15th, 16th, 17th and 18th questions; psychological field was made up of 5th, 6th, 7th, 11th, 19th and 26th questions; social field was made up of 20th, 21st and 22nd questions; environmental field was made up of 8th, 9th, 12th, 13th, 14th, 23rd, 24th and 25th questions. The scale does not have a full score and the increase in the score shows that life quality becomes better (World Health Organization, 1997).

Personal Information Form

It is made up of questions having the demographic information of the students included in the research regarding their gender, age, marital status.

Process

Application Stage

Before handing out the scales to students, they were informed about the purpose of the study. In this sense, it was applied after the necessary consents were taken from their tutors before the course. Any time limit was not made in the collection of the data.

Translation Stage

In the translation process of the scale, standard translation-back translation method that was recommended by Brislin (1986) was used. The original form of the scale was first examined and translated into Kazakh language by the researches firstly and then by two expert psychologists and three experts in the field of sport sciences who had an academic English education beforehand. While translating the scale, Turkish and Russian versions were also taken into consideration. The items in the scale obtained were compared and the items having the same translation were determined. Each translation form of the items having the same and different translation were given to different experts once again and they were asked to be translated into English. The scale items back-translated were compared with the original inventory items, differences and mistakes were determined. Kazakh inventory was finalized with the closest translations by comparing the English translation with the original inventory. In the translation process of the inventory into Kazakh language, the content of the original items was completely stayed loyal as it was thought that there would be no inadequacy resulting from the language itself.

Data Analysis

For data analysis, SPSS 20 and Lisrel 8.7 package programs were used. As the first step, the suitability of the analyses and the evaluation of the blank data for the control of the assumptions, normality test and determination of the extreme values were made. At the end of these processes, the validity and reliability studies of the scale was conducted in line with the answers coming from 509 sportspersons in total participating in the research. In this sense, Confirmatory Factor Analysis was used parallel to the approach in the development of original scale. For the sub-dimensions of the scale and total reliability Cronbach alpha (α) internal consistency coefficient was calculated.

Results

Confirmatory Factor Analysis

In order to investigate whether the factor structure of the original form of the scale was confirmed in the current study that was carried out with Kazakh students, confirmatory factor analysis (CFA) was used. For CFA, multiple fit-index was used and chi-square fit value (χ^2/sd), Goodness of Fit Index, (GFI), Comparative Fit Index, (CFI), Normed Fit Index, (NFI), Root Mean Square Error of Approximation, (RMSEA),

Table 1. Fit index values regarding the confirmatory factor analysis of who life quality scale short form

Values	Normal Value	Acceptable Value	Whoqol-Bref
X ² /sd	<2	<5	3.23
GFI	>0.95	>0.90	0.88
CFI	>0.95	>0.90	0.86
NFI	>0.95	>0.90	0.80
RMSA	<0.05	<0.08	0.66
SRMR	<0.05	<0.08	0.52
RMR	<0.05	<0.08	0.42

Standardized Root Mean Square Residual (SRMR) and Root Mean Square Residuals, (RMR) fit indexes were examined. The fit index values in the current study were given in Table 1.

It is likely to say that, as a result of confirmatory factor

analysis, 5-factor structure of WHO Life Quality Scale Short Form with 26 items was confirmed as a model and the model exhibited a good fit.

As a result of the Confirmatory Factor Analysis (CFA)

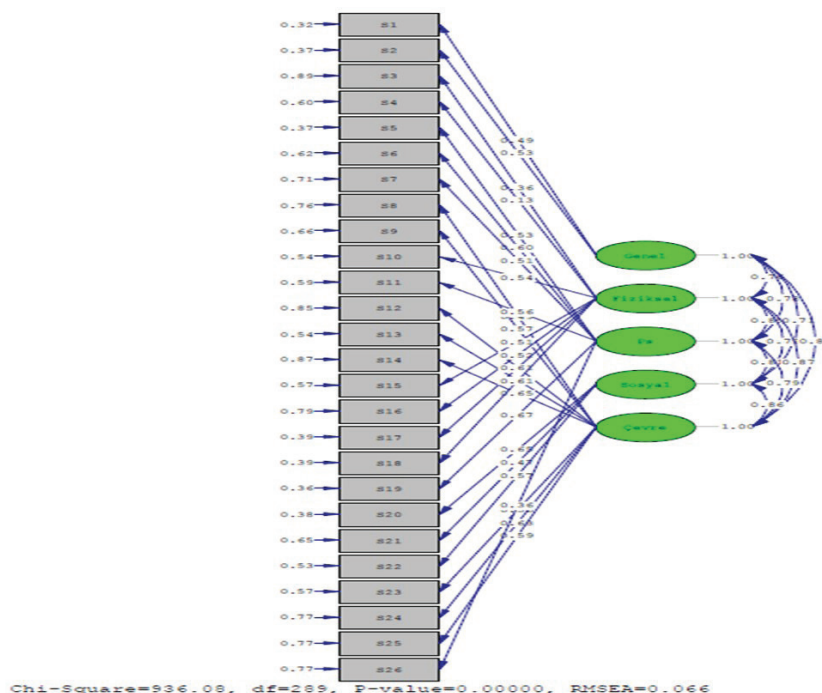


FIGURE 1. Confirmatory factor analysis results

analysis in Figure 1, it is seen that the covariance values between the sub-dimensions of the 26-item WHO Short Form of the WHO Quality of Life Scale (Whoqol-Bref) vary between 0.71 and 0.86.

Another way that was recommended to get some proof for

the structural validity of the scale was the calculation of the correlations between the sub-dimensions forming the scale (Şencan, 2005). For that reason, the correlations between the sub-dimensions of WHO Life Quality Scale Short Form were calculated and the results were given in Table 2.

Table 2. The correlation values between the sub-dimensions of who life quality scale short form

N=509	General Health	Physical Health	Psychological Health	Social Relations	Environment
General Health	1	.504**	.510**	.455**	.570**
Physical Health	.504**	1	.610**	.527**	.645**
Psychological Health	.510**	.610**	1	.563**	.621**
Social Relations	.455**	.527**	.563**	1	.623**
Environment	.570**	.645**	.621**	.623**	1

Depending on the correlation values between the sub-dimensions of the scale in Table 2, a positive and significant relation was determined between all sub-dimensions ($p < 0.01$).

Reliability of the Scale

In order to determine the items that would form the inventory and reliability of the inventory, item total test correlation and Cronbach alpha (α) internal consistency coefficient

Table 3. Internal consistency coefficient of who life quality scale short form regarding sub-dimensions

Sub-dimensions	Cronbach Alpha (α)
General Health	.60
Physical Health	.72
Psychological Health	.74
Social Relations	.64
Environment	.80
General Internal Consistency Coefficient	.91

was calculated. For 5 sub-dimensions obtained following the factor analysis, Cronbach Alpha reliability coefficient was given in Table 3.

As is given in Table 3, if it is taken into the consideration that reliability level predicted for the assessment tools likely to be used in researches is .60 (Alpar, 2001), general internal consistency coefficient of the sub-dimensions and of the inventory is high.

Discussion

In the current study, it was aimed to carry out the validity and reliability of World Health Organization Life Quality Short Form (WHOQOL) (26 items). First of all, the views of five experienced experts in the fields of English language, psychology and sport sciences were applied. After linguistic equivalence was obtained, the application was made upon the scale form finalized.

Factor structure of World Health Organization Life Quality Short Form was tested with CFA. As a result of the analysis made, it was found that model fit of the scale comprised of 26 items and five factors was significant ($\chi^2/sd(sd=164)=3,23$ GFI=0.88, CFI=0.86, NFI=0.80, RMSEA=0.66, SRMR=0.52, RMR=0.42). Depending on these results, it is likely to say that the model fit indexes of the scale was at adequate level and that the scale had a structural validity (Schermelleh-Engel, Moosbrugger, & Müller, 2003). Another finding obtained to prove the structural validity of the inventory was that correlation values between the sub-dimensions of the inventory were positive and significant at all sub-dimensions.

In a study by Conrad et al. (2014) carried out over 1.133 individuals between the ages 60-96 in Germany, psychometric features of WHOQOL-OLD scale was investigated and it was found that the scale was a suitable tool to define the needs and wishes of the old age individuals. Al-Fayez and Ohaeri (2011) applied WHOQOL-BREF scale on 4.467 students between the ages of 14-23 in order to examine the relation between the life quality of high school students and parent and socio-economic level. At the end of this study which was carried out in Saudi Arabia, it was found that the life quality scores of boy students were higher compared to those of girl students. The relations with parents were found to be positive and it was found that the fact that divorce and low socio-economic level of father was affected life quality negatively. Hasanah, Naing, and Rahman (2003) applied WHOQOL-BREF scale on the patients having a medical treatment longer than two years and investigated the psychometric features of the scale. At the end of the study, it was found that WHOQOL-BREF scale was valid and reliable for Malaysia. Izutsu et al. (2005) carried out the study of validity and reliability for WHOQOL-Bref scale in Bangladesh. It was applied on 187 boys (average age 14.6) and 137 girl students (average age 15.2) and as a result, the scores of relation dimension of the boy students were found higher in physical and psychological fields. WHOQOL-BREF was found valid and reliable in evaluating the life quality of adolescents in Bangladesh. Berlim, Pavanello, Caldieraro, and Fleck (2005) carried out a study over 89 adults having a depressive disease in order to evaluate the psychometric features of WHOQOL-BREF in Brazil. As a result, WHOQOL-BREF is a valid and reliable tool to assess psychometric features. Chien, Wang, Yao, Hsueh, and Hsieh (2009) applied Taiwanese and Chinese versions of WHOQOL-BREF on 53 individuals being able to read Chinese and know Taiwanese chosen randomly

between two disease periods. Between the two versions, medium level differences were found in 17 of 28 components and in 3 out of 4 fields. In 3 fields, the score of Taiwanese was found higher than that of Chinese. Noerholm et al. (2004) carried out a study with 578 women and 519 men, in order to investigate the validity and reliability of WHOQOL-BREF in Denmark. Life quality of Danish population was tried to be calculated and the score of women was found to be higher compared to that of men. Jahanlou and Karami (2011) made a comparison of WHOQOL-BREF and IRDQOL scales over 387 individuals with diabetes in Iran. While social and environmental fields exhibited similar results, physical field was found higher in WHOQOL-BREF scale. Bauman et al. (2010) carried out a study into 16.450 individuals chosen randomly in order to determine French reference values for the physical, health, psychological and social relation dimensions of WHOQOL-BREF scale. It was found that the reference values of WHOQOL-BREF scale could be used in clinical studies in order to evaluate its effect on the life quality of patients. In a study carried out over 304 adults in India by Saxena, Chandiramani, and Bhargava (1998), they thought that WHOQOL-BREF was a suitable tool to assess life quality in a detailed way. Trompenaars, Masthoff, Van Heck, Hodiament, and De Vries (2005) carried out a study with 553 Dutch adults in order to assess the validity and reliability of the psychometric features of WHOQOL-BREF scale. As a result, life quality was evaluated for the adults in the psychiatry policlinic and good scores were obtained in 25 of 26 questions. Leung, Wong, Tay, Chu, and Ng (2005) applied WHOQOL-BREF scale on 369 individuals with a disease and 113 healthy individuals in Hong Kong. The values of face-to-face interview and those of telephone talk interview had similarities. As a result, telephone or face-to-face interview mode was offered as an applicable choice. Nedjat, Montazeri, Holakouie, Mohammad, and Majdzadeh (2008) applied WHOQOL-BREF scale on 1.164 individuals with an average age of 36.6 in order to develop and assess the validity, reliability in Iran. As a result, positive results were found in all fields except for social relations field. Lucas-Carrasco, Laidlaw, and Power (2011) applied WHOQOL-BREF scale on 286 individuals over 60 years of age in Spain in order to investigate psychometric features. Significant differences were found in the scores at educational level, health status and between the ones with and without caretakers. In a study by Carpinello, Pinna, Carta, and Orrù (2011) carried out in Italy, WHOQOL-BREF scale was applied on 229 individuals in psychiatry policlinics at the first stage and on 236 individuals at the second stage. It was found that women obtained higher scores in both groups. No significant difference was found in life quality scores in terms of gender and marital status. Kalfossi, Low, and Molzahn (2008) carried out a study to assess the validity and reliability of the WHOQOL-BREF scale over elderly individuals in Canada. A comparison was made by applying the scale over 192 individuals in Canada and 469 individuals in Norway. As a result, the scores of both countries were found the highest in social terms. Min et al. (2000) carried out a study to develop the Korean version of the WHOQOL-BREF scale and to test the validity and reliability of it. A total sum of 538 people, 171 medical patients and 367 healthy individuals, were included in the study. While physical field got the highest score, it was followed by psychological and environmental fields. As a result, it is likely to say that Korean version of WHOQOL-BREF scale is a reliable and suitable test to assess life quality. Colburn,

Masache, and Skordis-Worrall (2020) carried out a study over 309 individuals to test the validity and reliability of the WHOQOL-BREF scale in Malawi. The level of life quality for the individuals having a high education level was found higher. The life quality scores of the married and single individuals were found higher compared to those of widows. As a result, WHOQOL-BREF scale was found clear, valid and reliable for the participants in Malawi. Hanestad, Rustøen, Knudsen, Lerdal, and Wahl (2004) investigated the psychometric feature of the WHOQOL-BREF scale by applying it on the Norwegian population. And 48.5% of the scale sent to 4.000 Norwegian citizens randomly chosen between the ages of 19-81 was answered. As a result, it was found to be a valid and reliable tool for Norway. A total sum of 908 individuals, 470 with a disease and 438 healthy ones, participated in the study by Jaracz, Kalfoss, Górna, and Baczyk (2006) carried out to investigate the validity and reliability of the WHOQOL-BREF scale in Poland. At the end of the study, the most distinctive field between healthy and unhealthy individuals was found to be physical field. A total sum of 300 individuals participated in the study by Fleck et al. (2006) carried out to investigate

the validity and reliability of the WHOQOL-BREF scale in Portugal. As a result, the psychometric field assessment of the WHOQOL-BREF scale was offered as a useful alternative to be used in the studies aiming at assessing life quality. Akinpelu, Maruf, and Adegoke (2006) carried out a study over 24 men and 14 women having a story of a stroke in Yoruba and found that the WHOQOL-BREF scale could be used to assess the life quality of the patients having a story of a stroke in Nigeria. Krageloh et al. (2013) carried out a study over 808 individuals in New Zealand and investigated four different fields and psychometric features of the WHOQOL-BREF scale. At the end, they found that the short form of the scale was valid and reliable for New Zealand.

Upon the review of the internal consistency coefficient for the purpose of determining the reliability of the inventory, it was found that these values were general health ($\alpha=.60$), physical health ($\alpha=.72$), psychological health ($\alpha=.74$), social relations ($\alpha=.64$), environment ($\alpha=.80$) and ($\alpha=.91$) for the general scale. Reliability coefficient obtained for the general inventory and for five sub-dimensions were between 0.60 – 0.80 values regarded as quite reliable by Alpar (2001).

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Conflict of Interest

The authors declare that there is no conflict of interest.

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