Psychometric characteristics of the WHO quality of life scale on a sample of people with disabilities in the Arab environment

By

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Abstract

This study examined the psychometric characteristics of a sample of disabled Arab individuals using the WHO quality of life scale. 492 people from Jordan, Saudi Arabia, and Sudan made up the study sample, which included both men and women. The validity and reliability coefficients, which the researcher collected and which are statistical functions, are as follows and show that using the scale in the Arab setting is valid. Each paragraph's internal consistency validity for the scale as a whole ranged from (0.193-0.802), which are significant levels at (0.01). Significant scores for the Bartlett test for curvature and Chi-Square Test are 10869.505 and 0.877, respectively, both of which indicate that the validity of the factorial structure is valid. According to Cronbach's alpha, the scale has a dependability rating of 0.950. The split-half approach yields a value of 0.791. 0.883 using the Spearman-Brown technique. Using the Gettman approach, scale is 0.866.

Keywords Psychometric properties WHO quality of life scale Arab environment

Introduction

Despite the great interest shown by the countries of the world in caring for the disabled, determining the number of these people is still difficult, and international organizations have dealt with this issue in particular, but they face problems with the data they receive from different countries, due to the different countries In adopting a unified definition of disability, each country provides organizations with numbers according to its definition of disability, and this is what made the total number of people with disabilities inaccurate, and it became difficult to compare countries in terms of the number of people with disabilities, and the estimation of global proportions of the prevalence of disability in the data provided by international organizations became inaccurate, and that The numbers available for each country are separate from the rest of the numbers

According to the latest statistics, the number of people with disabilities in the world is estimated at one billion people, and this constitutes 13% of the world's population, and this number represents an approximate number, and this estimate does not include the details through which these numbers were calculated. In countries in several areas, they need many appropriate decisions and procedures to provide support and services that guarantee their rights, and the United Nations has developed legislation to care for the rights of the disabled and provide them with equal life opportunities with ordinary people (WHO, 2011).

The policies and laws created by the UN organizations dedicated to the rights of people with disabilities have a significant impact on their lives, and one of those effects is the inclusion of a tool to monitor the outcomes of the application of these laws, as it describes the impact of legislation on the extent to which persons with disabilities enjoy their lives, and the United Nations legislation also provided specific concepts to describe the determinants of enjoying

life and quality of life standards (Gordon, Wilks & McCaw-Binns, 2013), wellbeing, life satisfaction, happiness or human flourishing (VanderWeele, 2017).

Quality of life includes the fulfillment of necessary needs, represented in health care, and providing appropriate education, and level of life, the measure of the quality of life is a measure that describes the degree of well-being the individual enjoys and includes the extent to which the individual enjoys health, positive social relations, comfortable economic situation, and enjoyment of effective physical capabilities. Other factors affect the quality of life, such as social relations, the individual's integration into society, and the psychological state in which the individual lives, which cannot be ignored (Majeed & Mumtaz, 2017).

The Human Development Scale is used to find out how far development is in a country. The measure of human development began in 1990 and is suitable for use in all countries of the world to see development standards in several areas such as the field of education, the average life span of individuals, and the quality of life experienced by society. Some researchers specializing in economics have developed nine criteria for quality of life: including the degree of well-being material, political stability, the extent of security in society, the quality of social relations, the stability of family life, the comfortable family atmosphere, the moderation of the climate, the existence of gender equality and the ability to express ideas and opinions freely, and the availability of health care for all groups of society (Majeed, 2019).

In general, there are two distinct ways to measure the quality of life score. The first method applies the scale to all groups of society, or specific groups of society, and this method is frequently used in social studies, studies related to the economic situation, or according to demographic variables, either the second method is applied to groups of society with special needs, and those who suffer from Specific disabilities This method is used by researchers in the medical field or the social field from a medical point of view (Jespersen, Michelsen, Holstein, Tjqrnhqj-Thomsen & Due, 2018).

In the first method of measuring the quality of life, a complex scale is used that is characterized by accuracy and comprehensiveness, based on the point of view of caregivers. It aims to know the degree of development of services and the degree of well-being available to members of society, and the extent to which sustainable development requirements are taken into account. A team specialized in measuring the dimensions of quality of life also participates in the measurement. From medical, social, and economic experts, each presents his opinion in the field he specializes in, but this measure does not take into account the subjective opinion of individuals receiving services, and here it is necessary to coordinate between the measures that take into account all individuals (Speight, Reaney & Barnard, 2009).

While the objective of the second measure of the quality of life, which is used for groups with special needs, and who face challenges as a result of their disabilities and health conditions, was initially looking at disease symptoms and their exposure to death, and then developed to look at ways of health care provided to them, which greatly affect their quality of life. , in several areas such as physical and mental health, social relations, and participation in society, for the disabled in particular, with their different disabilities. This measure focuses on the quality of medical services provided to the disabled and the effects, whether positive or negative. (Turska & Skowron, 2009).

The World Health Organization defines quality of life as a person's beliefs about their place in life and society, the degree to which they are immersed in it in accordance with its culture and values, and the degree to which this society is able to meet the needs and achieve

the goals of the person. (Whoqol Group, 1998). (WHOQOL-BREF) to measure the quality of life is one of the standards that have validity, stability, and validity for application. It is a measure that was developed by specialists in the field of medicine affiliated with the World Health Organization, and it has been applied to many societies with different cultures. This measure consists of (26) items that measure four areas that describe Quality of life, which is the physical health and fitness of the physical environment, the quality of social relations and mental healt,h, in addition to two subjects that were measured separately, in which the individual expresses his perceptions about the quality of life and his general health. This measure has been translated into many languages and codified in several countries (Baiano, Salvo, Righetti, Cereser, Baldissera, Camponogara & Balestrieri, 2014)

The impact of the disability depends on the degree of the individual's disability, which is reflected in the extent of his ability to live independently, his behavior, and his ability to adapt to his surrounding social environment and facilities in various fields.

Students with disabilities are a category of students with special needs, who have been diagnosed by a specialist, whether in psychology, medicine or development, as suffering from a deficiency, which makes their practice of life less than their peers, or they face difficulties and challenges in that. There are many types of disabilities, including hearing impairment, visual impairment, disabilities ability, learning difficulties, language and speech disorders, and other types, and these groups need special treatment commensurate with their disability, to ensure their right to education and life (Al-Qashaleh, 2017).

Each category of disability has special needs commensurate with the nature of this disability. Hearing impairment is not considered a homogenous disability, rather their needs differ according to the severity of the hearing impairment. Who can communicate only in sign language, and this requires dealing with them in this language, and some can deal with spoken language, but They face difficulties in understanding and distinguishing it, which makes them feel distressed, which requires the provision of psychological and counseling services to them. As for visual impairment, it is also either a complete disability (blind) or visua ally impaired. The blind lelearnshrough Braille, while the visually impaired need visual aids and seating. In advanced places in the classes, taking into account their social, psychological ,and academic characteristics, and training their other senses to compensate for their loss of vision. As for people with motor disabilities, they differ in the degree of disability. Some have a complete disability and use a wheelchair, and some have a partial disability and use assistive devices. The role of the teacher is to facilitate their movement and take into account their needs (Sharif, 2014).

Hearing impairment is a concept that denotes a state of hearing impairment that ranges between (30-90 decibels) or more, and hearing impairment includes complete deafness or hearing impairment, and the hearing impairment may be from birth or acquired later (Al Zureikat, 2015). The hearing hearing impairment affects the individual in various aspects of his life, social, psychological, and physical, as they may show a delay in growth compared to their peers, weakness in their physical fitness, and a significant weakness in communication skills, especially in verbal communication, and this affects their ability to integrate into social activities, and weak ability They build relationships, tend towards isolation and introversion, and this is reflected in their mental health, so they feel anxious and depressed, emotional disorders, lack of language learning, especially in cases of congenital hearing impairment, low cognitive outcomes and poor academic achievement, and to reduce the effects of this disability, society's attitudes towards them should be Positive, and to provide them with hearing aids and devices (Al Hadidi, 2016).

Visual impairment is defined as "weakness in the sense of sight, which hinders a person from using his sight efficiently, in a way that affects his growth and performance, it is

represented by a weakness in the five visual functions: central vision, bilateral vision, visual adaptation, peripheral vision, and color discrimination (Al-Khatib & Al-Hadidi, 2009).

Students with visual hearing impairments can do a lot of jobs, according to their abilities and tendencies, which requires their rehabilitation, taking into account the psychological effects of their disability. Many professions are suitable for people with visual impairments, and the integration of people with visual impairment in various jobs and professions has increased in the recent period, as a result Claims and invitations on this subject from official and unofficial organizations that take care of their rights, and the later years of education are considered one of the most important stages as the student moves from the study stage to the work stage, and for this it is required to qualify them through professional awareness, vocational exploration, vocational planning, and professional decision-making, vocational readiness, entering the world of work, and professional development. Vocational rehabilitation means the services provided to people with visual impairments to help them invest the maximum of their mental, physical, social and professional capabilities (Al- Hadidi, 2016).

Some students with mobility disabilities are distinguished by great mental abilities that can change their lives and the lives of those around them. They have the right to a decent life in all fields. Societies should take care of them and provide for all their needs, so that they can live in a good way, in all educational aspects. Psychological, physical, emotional, social, family formation and production (Nashar, 2015).

Many people with mobility disabilities are exposed to great challenges in life, such as mobility difficulties, enrollment in regular schools, and services to integrate them into society. He works to improve his economic situation, improve his living conditions, and give him the opportunity later to marry and form a family. The student with mobility disabilities needs material facilities in his school, such as elevators, rams, and all means that allow him safe access from home to school and within the school itself. He needs special treatment from the teachers, such as being in the classroom in a place that facilitates his movement, taking into account his psychological condition, and encouraging him to build social relationships with his classmates (Obeid, 2012).

As a result of the spread of disability and the emergence of organizations that take care of their rights, studies that examine the quality of life for the disabled have increased, in order to provide living conditions for them, and enable them to live in society effectively, and this requires serious planning to improve the conditions and quality of life through the preparation of programs to provide services and the most important thing in the planning process is measure their quality of life (Schalock, 2004).

There are several studies that examined the application of the WHO quality of life measure in several environments and on different samples of society, including:

Arafat and Yahya (2016) conducted a study aimed at codifying the quality of the quality of life for Kazem and Mansi on university students at the University of Zian Ashour, Boulal - Algeria Wali - Algeria, in order to estimate the degrees of the quality of the student's life in specific areas: public health, family and social life, education and study, Emotions, mental health, occupation and administration of time, and verify the psychological characteristics of the scale, and the study relied on the descriptive curriculum, and the study sample consisted of (847) students who were chosen in a random manner cluster, applied to them the quality of the quality of life for Kazem and forgotten, and the study resulted in several results, the most important of them It is available in the scale acceptable indicators of honesty indicated by the quantitative indicators extracted from the following methods of honesty: the sincerity of internal consistency,

the correlation of the convergence and distinct stylists, the discriminatory honesty, and the global honesty, as the scale and its sub -dimensions showed satisfactory stability indicators in general where the stability factor ranged from the six dimensions between (71.0 - 82.0).

The objective of Al-Onizat's (2018) study was to determine the level of quality of life for people with disabilities in Jordan based on factors such kind of disability, gender, educational attainment, and social standing. The study involved (216) disabled people, of whom (86) had physical impairments, (63) had hearing loss, and (67) had vision impairments. The quality of living for those with disabilities was arranged at a middle level. (social relations, mental health, physical health, and finally the quality of the environment). Additionally, it was discovered that men have a higher quality of life than women and that those with hearing and vision impairments have a higher quality of life than the general population. People with impairments who had more education generally had better quality of life..

The WHOQOL-BREF questionnaire's psychometric qualities were assessed among Serbian medical students in the study by Ilic et al. (2019). The study involved (760) students from the University of Kragujevac in Serbia's Faculty of Medicine. Using the test-retest procedure and Cronbach's alpha coefficient, the validity of the WHOQOL-BREF scale was confirmed. The Promax rotation technique was also used to confirm the scale's validity. The findings revealed that the WHOQOL-BREF scale as a whole has a Cronbach's alpha coefficient of 0.896. All domains had internal consistency values more than 0.70, with the exception of the "Social Relationships" domain. (0.533). Re-testing stability values for all domains were significant at the level of p 0.01, which suggests that the scale has good stability. Four major components, accounting for 49.5% of the variance, were identified via principal component analysis using the Promax rotation method. The WHOQOL-BREF scale's Serbian adaptation demonstrated adequate psychometric qualities that made it easier to evaluate the quality of life of medical students.

Al Yami (2021) administered the WHO quality of life scale to 418 male and female students at Najran University in Saudi Arabia to ascertain the psychometric features of the measure and to draw conclusions about its validity and reliability. He discovered that there aren't any notable variances and that the scale has good distinguishing qualities. According to statistics, the gender variable was the cause of the students' answer.

In the study of Al Khamese (2022), which sought to validate the WHO's brief quality of life scale (Whoqol-Bref) on a sample of University of Sanaa students, the researcher employed the analytical descriptive approach and applied the WHO's quality of life scale (Ahmed, 2008). On a sample of (400) male and female students from the University of Sana'a, and the traditions of honesty and stability were calculated, so the discriminatory honesty transactions were high, as the value of (T) reached (36.56), and the transactions of the sincerity of internal consistency (. For the scale (0.880), and the scale stability laboratories in the re -test method (0.886), which are high values, which indicates that the scale is distinguished by high transactions for honesty and stability, and it was found that there are no differences on the total degree of the scale between males and females, and through the results the researcher reached a number of Recommendations and proposals.

The objective of Grabowska, Antczak, Zwierzchowski, and Panek's project from 2022 is to develop a multidimensional quality of life measure for people with disabilities in comparison to able-bodied individuals. Included was the Multiple Cause Indicators Scale (MIMIC). The differences between people with disabilities and those without them were compared using data collected in Poland. Additionally, in general and throughout a variety of fields, persons without impairments have demonstrated superior quality than people with disabilities. Both the

dimension of health and the dimension of productive and major activity showed significant disparities. Almost no difference was seen in the areas of recreation and social interactions, whereas there were slight variations in the areas of physical conditions, economic security, and physical safety. Additionally, it discovered a connection between various characteristics, including age, gender, family status, education, partner status, urbanization, and health, and the study sample's quality of life in some of the scale's dimensions.

The researcher notes from the (Arafat & Yahya, 2016; Sa'aida, 2016; Al-Onizat, 2018; Ilić et al.,, 2019; Al-Yami, 2021; Al Khamisi, 2022) studies, which applied on normal "non-disabled" students in Various Arab countries, that the WHO quality of life measure had a good degree of validity and reliability, as indicated by the IIic et al., 2019 study that was applied in Serbia to ordinary students. without disabilities" that the World Health Organization quality of life measure had a good degree of validity and reliability, and the study Al-Onizat, 2018, which was applied in Jordan to a sample of students with disabilities, showed that the WHO quality of life measure is suitable for application to this category, because it had a good degree of validity and reliability, and in the study of Grabowska, Antczak, Zwierzchowski & Panek (2022) that was applied in Poland to compare the validity of the quality of life measure between people with and without disabilities, which showed the validity of the measure for both groups and showed that the quality of life for normal people is better than the quality of life for people with disabilities.

This study came to verify the validity of the World Health Organization's quality of life scale for application to people with disabilities in the Arab environment.

The Problem of the Study and its Questions:

The interest in the quality of life for the disabled emerged as a result of the emergence of legislation and laws that emerged from the United Nations organizations that take care of human rights in general and the rights of the disabled in particular, and that aimed to ensure equality among all human beings, and on its list of priorities are persons with disabilities, and the quality of life is considered the most important indicator that shows the extent to which Countries for the rights of the disabled according to the World Health Organization (WHO), and interest in the concept of quality of life for the disabled has increased to keep pace with global concerns in developing the capabilities of the disabled and helping them integrate into society, by providing them with support services and preparing programs that seek to educate and rehabilitate them, due to their strong need to face the challenges that have resulted. about their disability, measuring the extent of their adaptation and the degree of quality of life they enjoy (Al-Onizat, 2018).

Many researchers have tried to identify the social and cultural differences in QOL shown by studies applied to different cultural environments by applying the quality of life scale prepared by the World Health Organization, which has been translated into many languages, and which has been codified in many environments, although This measure was initially prepared on the high-income European environment, and the values of that society, hence the differences in the ability of this measure to respond to different social and cultural environments. Hence, it is necessary to search for the beliefs of individuals from different cultures about the quality of life. examined the validity of this measure in different settings.

The researcher found that the measure of quality of life prepared by the World Health Organization proved its validity in Algeria, as in the study (Arafat & Yahya, 2016) and in Jordan, as in the study (Al-Onaizat, 2018). It was also found to be valid for use in the Kingdom of Saudi Arabia, as in the study (Al-Yami, 2021), but the study was applied to normal

individuals, while the researcher did not find a study that examined the psychometric properties of the scale in the disabled category.

This study came to verify the psychometric properties of the quality of life scale on a sample of people with disabilities in the Arab environment by answering the following questions:

- What are the indications of the validity of the quality of life measure for people with disabilities in the Arab environment?
- What are the indications of the reliability of the quality of life scale for people with disabilities in the Arab environment?

2. Methods and materials

2.1. Participants

The study sample consisted of 492 individuals, males and females, from three Arab countries: Jordan, Saudi Arabia, and Sudan. Its description below by country, type of disability, gender, age group, and the respondent who completed the questionnaire, is shown in the table (1) (2) (3) (4) (5).

Table (1): *Distribution of sample members by country*

Country	Number	percentage
Jordan	134	27.2 %
Saudi Arabia	158	32.1 %
Sudan	200	40.7 %
the total	492	100.0 %

Table (2): *Distribution of the sample due to the category of disability*

Disability category	Number	percentage
learning difficulties	66	13.4 %
Visual impairment	92	18.7 %
Autism spectrum disorder	72	14.6 %
Physical and health impairment	134	27.2 %
Hearing impairment	72	14.6 %
intellectual disability	56	11.4 %
the total	492	100.0 %

Table (3): *Distribution of the sample due to gender*

Gender	Number	percentage
Male	250	50.8 %
Female	242	49.2 %
The total	492	100.0 %

Table (4): *Distribution of the sample due to Age*

Age	Number	percentage
under 12 years old	104	21.1 %
12 to 18 years old	108	22.0 %
Over 18 years old	280	56.9 %
the total	492	100.0 %

Table (5): *Distribution of the sample due to transponder*

Transponder	Number	percentage
Teachers and specialists	132	26.8 %
Parents	204	41.5 %
The person with a disability	142	28.9 %
the brothers	14	2.8 %
the total	492	100.0 %

2.2. Data analysis

The validity and reliability of the scale were calculated to reach its values through the following:

Indications of the validity of the quality of life scale in the Arab environment:

The validity of the scale was found in two ways: the first is the validity of the internal consistency, and the second method is the validity of the concept by knowing the factorial structure of the scale:

validity
Internal consistency validity:

To verify the internal consistency of the scale for the scale items by finding the Momentum Pearson correlation coefficient between each item of the scale, and the total score of the scale, the results were as shown in the table (6) below, where the correlations ranged between (.193 - .802), and they were All correlations function at (0.01).

Table (6): *Internal consistency validity*

paragraph number	Paragraph Correlation to Scale
1	0.555**
2	0.524**
3	0.352**
4	0.193**
5	0.782**
6	0.794**
7	0.743**
8	0.732**
9	0.688**
10	0.740**
11	0.749**
12	0.507**
13	0.594**
14	0.637**
15	0.700**
16	0.717**
17	0.774**
18	0.767**
19	0.785**
20	0.802**
21	0.721**
22	0.782**
23	0.749**
24	0.618**
25	0.596**
26	0.600**

(**) Significant at 0.01

(2) The validity of the factorial construction

The factorial construction of the scale is one of the types of validity of the concept, where the researcher conducted an exploratory factor analysis in the manner of the basic components, with the factors being rotated orthogonally by the Varimax method, after extracting the correlation coefficients for the items of the scale.

The results of this procedure revealed that the Kaiser-Meyer-Olkin equivalence coefficient (KMO) = 0.877, the Bartlett test for curvature and CHI-SQUARE 10869.505, and the degrees of freedom 325, which is a Statistical significante at the 0.000 level.

The line plot (Scree Plot), the correlation matrix of the scale items, the socials, the values of the latent roots, the explained variance ratios before and after rotation, and the saturations of the factors after the rotation were also found.
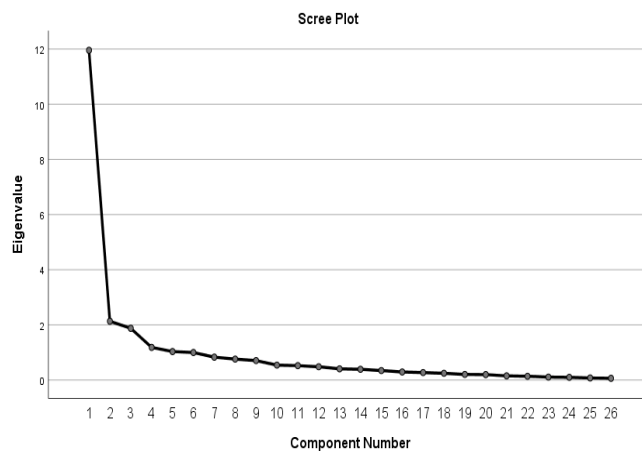

Figure (1) *shows the number of scale factors that have a potential root of 1 or more according to the Kaiser test*

Table (7) shows the Communalities of the quality of life scale.

Table (7): *Scale item Communalities*

Item	Communalities	Item	Communalities
1	1.000	14	1.000
2	1.000	15	1.000
3	1.000	16	1.000
4	1.000	17	1.000
5	1.000	18	1.000
6	1.000	19	1.000
7	1.000	20	1.000
8	1.000	21	1.000
9	1.000	22	1.000
10	1.000	23	1.000
11	1.000	24	1.000
12	1.000	25	1.000
13	1.000	26	1.000

Table (8) shows the values of the latent root and the percentage of variance explained by the factors for the quality of life scale.

Table (8): *The values of the Eigenvalue and the percentage of variance that explain the scale factors*

	Factor analysis before rotation			Factor analysis after rotation		
	Eigen Value	Variance Ratio	Aggregate Variance Ratio	Eigen Value	Variance Ratio	Aggregate Variance Ratio
1	11.958	45.990	45.990	22.684	22.684	22.684
2	2.132	8.200	54.191	16.850	16.850	39.535
3	1.875	7.211	61.402	13.298	13.298	52.833
4	1.184	4.552	65.954	10.143	10.143	62.976
5	1.033	3.972	69.927	6.951	6.951	69.927

Table (9) shows the Loadings of the paragraphs on the quality of life scale on the factors after rotation.

Table (9): *Loadings of the paragraphs on the quality of life scale on the factors after rotation.*

Paragra	1	2	3	4	5
1			0.524		
2			0.496		
3					0.804
4					0.852
5		0.677			
6		0.736			
7		0.648			
8		0.584			
9				0.647	
10	0.427				
11		0.585			
12				0.746	
13				0.596	
14			0.490		
15		0.613			
16		0.558			
17	0.794				
18	0.836				
19	0.778				
20	0.805				
21	0.656				
22	0.722				
23	0.536				
24			0.813		
25			0.807		
26					0.504

Reliability:

The reliability was found in several ways: Cronbach's alpha equation, the split-half, after modification by the Spearman and Brown equation, and Guttman's equation, and the results of these procedures are shown in Table (10), where the reliability ranged between (0.791 - 0.950), which are high reliability coefficients.

Table (10): *Quality of life reliability*

Reliability parameter name	Amount of reliability coefficient
Alpha Cronbach	0.950
split half	0.791
Spearman Brown	0.883
Getman	0.866

2.3. Results

The quality of life questionnaire was applied to a sample of three Arab countries with different economic levels and with somewhat different cultures, in addition to its inclusion of various age groups and different disabilities, in order to verify the effectiveness of the quality of life measure and its validity for application on the category of people with disabilities in Arab environment. Extracting the validity and reliability values of the scale were the following results:

- The internal consistency validity between each paragraph and the scale as a whole was between (0.193-0.802), which are significant values at (0.01).
- The values of the validity of the factorial construction (KMO) = 0.877, and the Bartlett test for curvature and Chi-Square Test = 10869.505, which are significant values.
- The reliability value of the scale according to Cronbach's alpha is 0.950.

The reliability value of the scale according to the split-half method is 0.791

- The value of the scale reliability according to the Spearman-Brown method 0.883
- The reliability value of the scale according to the Gettman method is 0.866

Through the previous results, it is clear that the measure of quality of life prepared by the World Health Organization is suitable for application to the Arab environment.

The researcher attributes these results that the category of people with disabilities in addition to the other people associated with them "who have responded to the scale, have awareness and of their rights, and are able to express the reality of their lives and the extent of society's response to their requirements, which achieve the quality of life, in addition to that this scale has been done Prepared by the World Health Organization in a holistic way, as Mohammed (2011) indicated that this scale began its numbers in (1991) in 15 countries to cover the various aspects of the quality of life that it had or did not address traditional tools to estimate the quality of life related to health (The Whoqol Group, 1995) The primary goal of the project was to design a tool to evaluate the quality of life that can be applied widely through various types of varying diseases in intensity as well as through various cultural groups economically, socially and ages and uses the scale to evaluate interventions programs to improve the quality of life and to compare the quality of life through different countries and sub -cultures within One diameter.

Many Arab researchers also extracted its aceomical properties such as the study of (Arafat & Yahya, 2016; Al-Onizat, 2018; Ilić et al.,, 2019; Al-Yami, 2021; Al Khamisi, 2022) and all of these studies of different cultures and eyes showed the sincerity and stability of this scale, in his translated image.

Acknowledgment

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