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Psychometric Properties of Beach Center Family Quality of Life Scale for Indonesian Families' Children Without Disabilities

Widya Risnawaty[1*], Agustina[1] & Denrich Suryadi[1]

[1] *Faculty of Psychology, Universitas Tarumanagara, Jakarta, Indonesia*
[*] *Corresponding author. Email: widyar@fpsi.untar.ac.id*

ABSTRACT
The Beach Center Family Quality of Life Scale (Beach Center FQOL) has five dimensions and is commonly used to measure the quality of life of families with disabled children. However, for the broader use of family quality of life measurements, this study does not involve the Disabilities-Related Supported dimension. This modification of the FQOL Beach Center involved 1649 parents from 3 major cities in Indonesia. Data analysis was performed using the FACTOR program, which uses the EFA and CFA approaches simultaneously. The hull method was used to select the number of common factors with Polychoric Correlations as a Dispersion matrix. Robust Unweighted Least Squares are used as a factor extraction method, and Robust Promin is used to achieve factor simplicity. The analysis showed that the Kaiser-Meyer-Olkin (KMO) test was very good, and the Cumulative Proportion of Variance was 68% on four factors. Robust Goodness of Fit Index shows the value of Root Mean Square Error of Approximation (RMSEA), CFI, and AGFI, which shows the suitability of data and empirical models. Each factor shows the High H values (> .80), which suggest a well defined latent variable, which is more likely to be stable across studies. The Factor Determinacy Index (FDI), which is used as a reliability criterion, shows high reliability.

Keywords: *Family quality of life Scale, Indonesian family, children without disabilities, factor analysis*

1. INTRODUCTION

The concept of family quality of life has been developed for more than two decades and is still being researched today. The International Family Quality of Life project was started in 1997 in several studies, which were collaborations of several researchers from Australia, Canada, Israel and the United States [1], [2]. As said by Turnbull et al. in their study that was presented at Family Quality of Life Symposium, defined family is people who think of themselves as part of the family, whether related by blood or marriage or not and who support and care for each other on a regular basis. Then the family quality of life defined as conditions where the family's needs are met, and family members enjoy their life together as a family and have the chance to do things which are important to them" [1, p. 368]

In the early stages of developing FQoL, Poston et.al. [3] conducted a qualitative inquiry to formulate the concept of family quality of life. Data were collected through focus group discussions (FGD) and individual interviews, which involved 187 participants with various characteristics, including family members of children with a disability, family members of children without a disability, individual with a disability, services provider, and administrators. This study resulted in 10 domains of quality of life which include: Advocacy, Emotional Well-Being, Health, Environmental Well-Being, Productivity, Social Well-Being, Daily Family Life, Family interaction, Financial Well-Being, and Parenting.

In a later study, Park et al. [1] conducted a validation test on the 10 domains of family quality of life which were the result of earlier qualitative inquiry. The 10 domains consist of 112 items. The FQoL Scale was tested on 1197 participants from 13 states in the US. Each family member who was over 13 years of age was asked to fill out the questionnaire. The results then caused the family quality of life scale to change, from 10 domains to 5 domains with a total of 25 items. The 5 domains of FQoL are family interaction, parenting, emotional well-being, physical and material well-being, and disabilities related supported [1]. The 5 dimensions mentioned before have relatively good item reliability, which is around 0.86 - 0.9. The concept and measurement using the Beach Center FQoL Scale instrument were also reviewed in literature

studies, showing that the instrument is indeed widely used and tested so that it is classified as a valid, authentic and efficient instrument to assess the impact of family services on family members with disabilities [4], [5].

Next, a psychometric evaluation was conducted on the Beach FQoL-Scale using confirmatory factor analysis. The results showed that the empirical model tested fits with the proposed model, which is the 25 items to measure 5 dimensions [6]. Then, it was organized in the form of a standard instrument format as Beach-Center Family Quality of Life survey questionnaire [7].

Beach Center Family Quality of Life Scale (Beach Center FQoL-Scale) was later adapted and used by researchers from various countries to psychometrically evaluate the use of this instrument, including Spain [8], [9], Brazil [10], Africa [11], Taiwan [12], Singapore [13], Turkish [14], France [15] Mandarin - Chinese [16].

In order for the Beach - Center Family Quality of Life instrument to be used for a broader purpose, Zuna [17] tried to test the instrument on families whose none of the members has special needs (without disability) by eliminating one dimension, which is disability-related supports. In the study conducted by Zuna, the four dimensions tested include family interaction, parenting, emotional well-being, and physical-material well-being. The results of the confirmatory factor analysis test showed that the hypothesized measurement fits the measurement model. This means that the Beach-Center FQoL scale is valid and can be used to measure the quality of family life in families whose none of the members has special needs.

However, for broader use of measurement Beach Center Family quality of life scale within the context of Indonesian families, this study aims to psychometrically test only four dimensions of the Beach-Center FQoL Scale instrument. This study omitted the Disabilities-Related Support dimension (5th dimension). Therefore, the empirical model only consists of 4 dimensions by referring to the study conducted by Zuna et al. [17]. The study by Zuna et.al involved a different type of population, which is families without disabled children.

Data analysis was performed using FACTOR program, which uses the EFA and CFA approaches simultaneously. The four dimensions used include (Zuna et al. 2009): (a) **Family interaction** with indicators such as: spending time to gather together, family members being open to each other, supporting each other, showing mutual love, solving problems together and staying together in joy and sorrow; (b) **Parenting** with indicators such as: teaching children to be independent, building relationships with others, decision making, as well as parents being able to recognize the child's friends and meet their needs; (c) **Emotional well-being** with indicators such as: providing mental support between family members, having friends or acquaintances who can provide support and assistance when needed; (d) **Physical and material well-being** with indicators such as: having access to health services, owning a transportation method to support mobility, having a sense of security while at home, work, and living environment. Lastly, the family is also financially secure. The 21 items from the four dimensions of the Beach-Center FQoL Scale had been translated into Indonesian. All items used are following the original instrument.

2. RESEARCH METHOD

2.1. Participants

Participants in this study were parents (father or mother) with children aged 3 - 15 years without disabilities. In this study, participants' age, education level, occupation and marital status were not restricted. This study was conducted in 3 cities, which are Jakarta, Bandung and Purwokerto. Participants involved in the study were 1649 parents aged between 19-70 years (M = 39.55), consisting of 862 mothers and 787 fathers. Details can be seen in the following table:

Table 1 ***Number of Participants***

Cities	Mother		Father		Total	
	Sum	%	Sum	%	Sum	%
Jakarta	403	46.8	350	44.5	753	45.7
Bandung	237	27.5	233	29.6	470	28.5
Purwokerto	222	25.8	204	25.9	426	25.8
Total	862	52.3	787	47.7	1649	100

The majority of participants (38.6%) had secondary level education and 34.4% had undergraduate level education. Participants were selected using purposive sampling technique.

2.2. Measurement

The Beach Center Family Quality of Life Scale (FQoL Scale) was developed by Hoffman et al. [6]. Its purpose was to measure several aspects of families' perceived satisfaction in terms of quality of family life and is commonly used for families with disabled children.

The original measuring tool consists of 5 dimensions with a total of 25 items in the form of a Likert scale with 5 measurement points (1 = very dissatisfied, 2 = dissatisfied, 3 = neither, 4 = satisfied, 5 = very satisfied). Higher score indicates a better family quality of life, and vice versa. The 5 dimensions include: (a) family interaction consisting of 6

items, (b) parenting consisting of 6 items, (c) emotional well-being consisting of 4 items, (d) physical / material well-being consisting of 5 items, and (e) disability-related support consisting of 4 items. In this study, a psychometric test was conducted to determine whether an empirical model with 4 dimensions fits with a theoretical model as referred to in the research by Zuna et.al [17].

The data analysis used was the FACTOR Program [18], [19], where EFA and CFA calculations were done simultaneously. The hull method was used to select the number of common factors with Polychoric Correlations as a Dispersion matrix [20]. The hull method is a new method for selecting the number of major common factors, with the aim of finding a model with an optimal balance between model fit and number of parameters. Polychoric Correlations as a Dispersion matrix was chosen based on assumption that the data distribution was not normal.

3. RESULTS AND DISCUSSION

Results

Data were analyzed using FACTOR developed by Lorenzo-Seva [18]–[20].

3.1. Univariate Descriptive

Univariate descriptive shows that the mean for each item, from items 1 to 21 are classified as high because they greater than the median value of 3 (answer choice ranges from 1 to 5). The smallest mean value is on item 13 (V13 = 3.256), and the largest mean value is on item 12 (V12 = 4.422).

Table 2 Univariate descriptive

Variable	Mean (95%)	Confidence Interval	Variance	Skewness (Zero centered)	Kurtosis (Zero centered)
V 1	4.347	(4.30 4.39)	0.557	-1.635	4.292
V 2	3.967	(3.91 4.02)	0.730	-0.924	1.216
V 3	4.123	(4.08 4.17)	0.574	-1.080	1.988
V 4	4.136	(4.09 4.18)	0.491	-1.136	3.056
V 5	3.892	(3.84 3.95)	0.811	-0.864	0.898
V 6	4.301	(4.25 4.35)	0.580	-1.530	3.758
V 7	4.163	(4.11 4.21)	0.641	-1.217	2.042
V 8	4.003	(3.95 4.06)	0.733	-0.911	1.195
V 9	4.080	(4.03 4.13)	0.594	-1.259	2.814
V 10	4.227	(4.18 4.27)	0.576	-1.255	2.619
V 11	4.359	(4.32 4.40)	0.439	-1.227	3.257
V 12	4.422	(4.38 4.46)	0.385	-1.122	2.884
V 13	3.256	(3.19 3.33)	1.227	-0.408	-0.517
V 14	4.313	(4.27 4.35)	0.408	-1.155	3.828
V 15	4.240	(4.19 4.28)	0.512	-1.292	3.467
V 16	4.104	(4.05 4.15)	0.607	-1.298	2.876
V 17	4.069	(4.02 4.12)	0.654	-1.226	2.278
V 18	4.184	(4.14 4.23)	0.478	-1.165	3.051
V 19	4.122	(4.07 4.17)	0.564	-1.406	3.644
V 20	3.950	(3.89 4.01)	0.782	-1.161	1.636
V 21	4.377	(4.34 4.42)	0.365	-0.967	3.035

3.2. Multivariate Descriptive

Polychoric Correlation was used to test the normality in factor analysis calculations. The calculation results show significance of 0.05 on the value of kurtosis (coefficient of kurtosis = 881.343). This means that the data distribution is not normal. Therefore, the normality testing used polychoric correlation instead of Pearson correlation.

Table 3. Multivariate descriptive

	Coefficient	Statistic	df	*p*
Skewness	84.531	23231.907	1771	1.0000
Skewness corrected for small sample	84.531	23278.020	1771	1.0000
Kurtosis	881.343	260.225		0.0000**

**Significant at 0.05

3.3. Covariance Matrix (Polychoric Correlation)

Correlation between items is categorized as high if the coefficient score is greater than 0.7. A high correlation score indicates that the correlated items measure the same concept and will be grouped in the same factor.

Table 4. Covariance Matrix (Polychoric Correlation)

STANDARDIZED VARIANCE / COVARIANCE MATRIX (POLYCHORIC CORRELATION)
(Polychoric algorithm: Bayes modal estimation; Choi, Kim, Chen, & Dannels, 2011)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
V 1	1.000																				
V 2	0.431	1.000																			
V 3	0.579	0.501	1.000																		
V 4	0.427	0.401	0.553	1.000																	
V 5	0.386	0.771	0.431	0.396	1.000																
V 6	0.412	0.343	0.448	0.415	0.391	1.000															
V 7	0.600	0.365	0.572	0.425	0.353	0.537	1.000														
V 8	0.381	0.781	0.432	0.360	0.750	0.398	0.396	1.000													
V 9	0.489	0.350	0.584	0.474	0.364	0.448	0.566	0.361	1.000												
V 10	0.627	0.404	0.596	0.464	0.373	0.458	0.707	0.384	0.574	1.000											
V 11	0.610	0.423	0.656	0.513	0.396	0.510	0.658	0.410	0.588	0.823	1.000										
V 12	0.591	0.346	0.580	0.462	0.338	0.518	0.642	0.352	0.527	0.707	0.770	1.000									
V 13	0.181	0.196	0.191	0.203	0.218	0.194	0.197	0.159	0.241	0.286	0.288	0.219	1.000								
V 14	0.578	0.362	0.523	0.511	0.286	0.442	0.565	0.337	0.557	0.649	0.705	0.635	0.168	1.000							
V 15	0.448	0.299	0.435	0.444	0.315	0.470	0.459	0.308	0.514	0.476	0.524	0.525	0.176	0.607	1.000						
V 16	0.485	0.317	0.498	0.431	0.280	0.453	0.549	0.326	0.526	0.557	0.541	0.517	0.243	0.636	0.588	1.000					
V 17	0.399	0.267	0.448	0.427	0.317	0.484	0.495	0.330	0.517	0.474	0.486	0.443	0.298	0.548	0.499	0.551	1.000				
V 18	0.545	0.386	0.529	0.456	0.365	0.481	0.583	0.387	0.458	0.601	0.630	0.642	0.201	0.618	0.542	0.616	0.599	1.000			
V 19	0.532	0.363	0.516	0.420	0.301	0.453	0.545	0.370	0.532	0.591	0.592	0.592	0.275	0.615	0.524	0.597	0.610	0.723	1.000		
V 20	0.331	0.272	0.343	0.363	0.309	0.359	0.374	0.289	0.451	0.367	0.407	0.433	0.215	0.442	0.623	0.463	0.407	0.474	0.491	1.000	
V 21	0.538	0.338	0.554	0.481	0.337	0.476	0.494	0.363	0.467	0.683	0.685	0.661	0.166	0.659	0.524	0.511	0.469	0.683	0.684	0.498	1.000

3.4. Adequacy of the Polychoric Correlation Matrix

The KMO (Kaiser-Meyer-Olkin) test resulted in 0.947 which is greater than 0.7. This means that the correlation calculation is adequate, and can be followed by analysis factor calculation. There are informations related to adequacy of the polychoric correlation matrix: (a) Determinant of the matrix < 0.000001; (b) Bartlett's statistic = 18883.1 (df = 210; p = 0.000010); (c) Kaiser-Meyer-Olkin (KMO) test = 0.94676

(very good); (d) BC Boostratp 95% confidence interval of KMO = (0.947 0.948).

3.5. Cumulative Proportion of Variance

The Cumulative Proportion of Variance was 68% on 4 factors. The results of this calculation indicate that the four factors in the Beach Center FQoL Scale can be used to measure the quality of life of families without disabled children.

Table 5. Cummulative proportion of variance

Variable	Eigenvalue	Proportion of Variance	Cumulative Proportion of Variance
1	10.44425	0.49735	0.49735
2	1.77687	0.08461	0.58196
3	1.13029	0.05382	0.63578
4	0.92269	0.04394	0.67972
5	0.71748	0.03417	
6	0.66692	0.03176	
7	0.64289	0.03061	
8	0.60844	0.02897	
9	0.51228	0.02439	
10	0.47474	0.02261	
11	0.41856	0.01993	
12	0.39704	0.01891	
13	0.36901	0.01757	
14	0.32908	0.01567	
15	0.27795	0.01324	
16	0.27772	0.01322	
17	0.26733	0.01273	
18	0.24617	0.01172	
19	0.22419	0.01068	
20	0.15999	0.00762	
21	0.13610	0.00648	

3.6. Robust goodness of fit statistic

Robust unweighted least squares was used as a factor extraction method, and **Robust Promin** was used to achieve factor simplicity. Robust Goodness of Fit was used to explain RMSEA, which was then compared with NNFI, CFI, AGFI and GFI.

Root Mean Square Error of Approximation (RMSEA) = 0.031 - BC Bootstrap 95% confidence interval = (0.0200 0.0316). Test of Approximate Fit, with H0: RMSEA < 0.05; P = 1.000. This means that the 4 factor model fits with the data model theory.

Then RMSEA were compared with others Robust goodness of fit index. NNFI (Non-Normed Fit Index) = 0.996 (> 0.990); with BC Bootstrap 95% confidence interval = (0.995 0.998). CFI = 0.997 (> 0.990); BC Bootstrap 95% confidence interval = (0.997 0.999). Besides NNFI and CFI, RMSEA were also compared with GFI. For GFI (Goodness of Fit Index) = 0.998 (> 0.990); BC Bootstrap 95% confidence interval = (0.997 0.998). Goodness of Fit Index without diagonal values (GFI) = 0.997 (> 0.990); BC Bootstrap 95% confidence interval = (0.997 0.997). Lastly, the RMSEA was compared with AGFI (Adjusted Goodness of Fit Index) = 0.996 (>0.990); BC Bootstrap 95% confidence interval = (0.996 0.997). Adjusted Goodness of Fit Index without diagonal values (AGFI) = 0.995; BC Bootstrap 95% confidence interval = (0.995 0.996). The comparing index shows that Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI) proved the suitability of the data as an empirical and theoretical model.

Table 6 Robust goodness of fit statistic

	NNFI	CFI	GFI	AGFI
Index	0.996	0.997	0.998	0.996
BC Bootstrap 95% confidence interval	(0.995 - 0.998)	(0.997- 0.999)	(0.997- 0.998)	(0.996- 0.997)

> 0.990 = excellent

3.7. Rotated loading matrix

There was two-phases of data processing to acquire loading factor after rotated.

Phase 1: Matrix that contains loading factor form each variable after rotated

Table 7. Rotated loading matrix

Variable	F1	F2	F3	F4
V 1	0.769	-0.138	0.003	0.071
V 2	0.184	-0.065	0.876	-0.083
V 3	0.691	-0.143	0.179	0.070
V 4	0.298	0.102	0.166	0.166
V 5	-0.039	0.061	0.846	0.026
V 6	0.355	0.153	0.131	0.081
V 7	0.715	-0.187	-0.002	0.229
V 8	0.078	0.027	0.805	-0.023
V 9	0.334	0.116	0.045	0.267
V 10	1.023	-0.187	-0.034	-0.012
V 11	1.138	-0.046	-0.033	-0.219
V 12	0.936	0.069	-0.069	-0.141
V 13	-0.152	-0.059	0.087	0.474
V 14	0.555	0.186	-0.100	0.162
V 15	0.037	0.897	-0.016	-0.076
V 16	0.129	0.165	-0.075	0.541
V 17	-0.215	-0.077	-0.034	1.035
V 18	0.266	0.002	-0.023	0.573

V 19	0.111	-0.023	-0.027	0.751
V 20	-0.105	0.738	0.044	0.053
V 21	0.617	0.248	-0.021	-0.049

Phase 2: omitted variable with loading factor lower than 0.300
Table 8. Rotated loading matrix

Variable	F1	F2	F3	F4
V1	0.769			
V2			0.876	
V3	0.691			
V4	-	-	-	-
V5			0.846	
V6	0.355			
V7	0.715			
V8			0.805	
V9	0.334			
V10	1.023			
V11	1.138			
V12	0.936			
V13				0.474
V14	0.555			
V15		0.897		
V16				0.541
V17				1.035
V18				0.573
V19				0.751
V20		0.738		
V21	0.617			

The tables showed the factors and the variables nested in the factors, as such: (a) factor 1 with variable 1, 3, 6, 7, 9, 10, 11, 12, 14, and 21; (b) factor 2 with variable 15, and 20; (c) factor 3 with variable 2, 5, and 8; (d) factor 4 with variable 13, 16, 17, 18, and 19. There were 20 variables in total, with variable 4 omitted because the loading factor was lower than 0.300. Variables with loading factor higher than 1.00 were positive definite variables indicating bias in the instrument. Variable 10 (1.023), 11 (1.138), 17 (1.035) were omitted because all variables showed a loading factor greater than 1.00.

3.8. Reliability

Reliability for each factor is as such: (a) reliability for Factor 1 = 0.958; (b) reliability for Factor 2 = 0.867; (c) reliability for Factor 3 = 0.909; (d) Reliability for Factor 4 = 0.909; the Reliability coefficients of all four factors were higher than 0.7.

3.9. Construct Replicability: Generalized H (G-H) index

Table 9. Construct replicability generalized H (G-H) index

Factor	H – Latent	BC Bootstrap 95% Confidence intervals	H – Observed	BC Bootstrap 95% Confidence intervals
F1	0.958	(0.952-0.967)	0.892	(0.866-2.481)
F2	0.867	(0.840-0.999)	0.786	(0.621-2.150)
F3	0.909	(0.885-0.924)	0.828	(0.796-1.897)
F4	0.909	(0.898-0.996)	0.859	(0.712-2.300)

Each factor shows high H-Latent values (> .80) which suggest a well-defined latent variable, which is likely to be stable across studies. Based on H-Observed value, the second factor (F2) showed the lowest score (F2 = 0.786), indicating that the factor is less stable compared to F1, F3, and F4.

The Factor Determinacy Index (FDI), which was used as a reliability criterion, shows high reliability. All factors showed high score of FDI, all index were hingher than 0.8. The following are FDI score, moving from lowest to highest: (a) Factor 2 (FDI = 0.931); (b) Factor 3 (FDI = 0.953); (c) Factor 4 (FDI = 0.953); (d) Factor 1 (FDI = 0.979).

Table 10. EAP reliability estimates

Factor	Factor Determinacy Index	95% Confidence Intervals
F 1	0.979	(0.976 – 0.983)
F 2	0.931	(0.916 – 0.999)
F 3	0.953	(0.941 – 0.961)
F 4	0.953	(0.948 – 0.998)

Discussion

In previous studies, psychometric tests using the Beach Center FQoL scale were generally conducted on families with disabled children such as intellectual disabilities and autism [10], [15]. However, the study conducted by Zuna was slightly different. Zuna attemped to test whether the Beach Center FQoL scale can be used for families whose children are not disabled, by omitting the Disability - Related Support dimension. The results showed that the empirical model

where the FQoL scale only consists of 4 dimensions is in fact compatible with the theoretical model. This means that the Beach Center FQoL scale can be used on families without disabled children.

Referring to the study by Zuna[17], this study also seeks to find out whether the theoretical model with 4 dimensions is compatible with the empirical model, especially for families in Indonesia without disabled children. Due to different research population and settings, the psychometric test in this study began with the EFA stage, followed by CFA using FACTOR. The FACTOR program was chosen because it can operate the EFA and CFA calculations simultaneously [20].

At the EFA calculation stage, with reference to the RMSEA score = 0.031 (BS Bootstrap 95%; H0: RMSEA <0.05; p = 1,000), the 21 items tested were grouped into 4 factors and these items are shown to measure the constructs of each factor. This shows that the empirical model fits with the theoretical model and is valid for measuring the quality of family life of families without disabled children.

Tests conducted on families without disabled children resulted in 4 factors with new constructs. Based on the calculation of the loading factor, a different grouping of variables from the original measuring instrument (FQoL Scale for families with children with disabilities) was obtained. The following are resulting 4 factors (a) factor 1, this factor consists of 8 items that measure the interactions among family members and family strength; (b) factor 2, this factor consists of 2 items that measure the availability of health services for families; (c) factor 3, this factor consists of 3 items that measure the role of family members under care; (d) factor 4, this factor consists of 4 items that measure the family's ability to face challenges and take care of family needs.

The results of Goodness of fit calculation with RMSEA score of = 0.031 (H0: RMSEA <0.05; p = 1,000) indicated that the 4 factors measured are valid because the empirical model fits with the theoretical model. Based on the results of the Explained variance of rotated factors and reliability of phi-information oblique EAP scores calculation, the reliability coefficients of all four factors were higher than 0.7. This means that each factor is proven to be reliable. Therefore, the FQoL scale instrument for families without disabled children in Indonesia can be used.

The implication for researchers is to improve the generalization of this instrument, so that it can be applied in a wider and more diverse population. To realize this, various tests with diverse populations are needed.

In its implementation, this study found several limitations. First, many participants did not fill all the questionnaire items, leading to many questionnaires having to be discarded. Second, collecting data by sending questionnaires to participants through certain parties and having participants fill them at home independently seems less effective. The diversity of participants' levels of understanding needs to be reconsidered in determining how to collect data in future studies.

4. CONCLUSION AND SUGGESTIONS

Factor analysis testing of the Beach Center FQoL Scale measuring instrument for families without disabled children is proven valid and reliable, with four factors and a total of 17 items. The instrument that resulted from this study is intended for broader and more diverse use of Beach Center FQoL. Therefore, further research is needed to re-test the instrument in a more diverse context, such as single parent families, sandwich families, mixed families and other broader contexts. Furthermore, more in-depth studies are still needed to examine the application of FQoL as a reference for developing intervention programs in the social, health, family education and community contexts.

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REFERENCES

[1] J. Park *et al.*, “Toward assessing family outcomes of service delivery: Validation of a family quality of life survey,” *J. Intellect. Disabil. Res.*, vol. 47, no. 4–5, pp. 367–384, 2003, doi: 10.1046/j.1365-2788.2003.00497.x.

[2] B. J. Isaacs *et al.*, “The International Family Quality of Life Project: Goals and Description of a Survey Tool,” *J. Policy Pract. Intellect. Disabil.*, vol. 4, no. 3, pp. 177–185, 2007, doi: 10.1111/j.1741-1130.2007.00116.x.

[3] D. Poston, A. Turnbull, J. Park, H. Mannan, J. Marquis, and M. Wang, “Family Quality of Life: A Qualitative Inquiry,” *Ment. Retard.*, vol. 41, no. 5, pp. 313–328, 2003, doi: 10.1352/0047-6765(2003)41<313:fqolaq>2.0.co;2.

[4] J. A. Summers *et al.*, "Correspondence: Conceptualizing and measuring family quality of life," *J. Intellect. Disabil. Res.*, vol. 49, no. october, pp. 777–783, 2005.

[5] P. S. Samuel, F. Rillotta, and I. Brown, "Review: The development of family quality of life concepts and measures," *J. Intellect. Disabil. Res.*, vol. 56, no. 1, pp. 1–16, 2012, doi: 10.1111/j.1365-2788.2011.01486.x.

[6] L. Hoffman, J. Marquis, D. Poston, J. A. Summers, and A. Turnbull, "Assessing family outcomes: Psychometric evaluation of the beach center family quality of life scale," *J. Marriage Fam.*, vol. 68, no. 4, pp. 1069–1083, 2006, doi: 10.1111/j.1741-3737.2006.00314.x.

[7] B. Line, "OF Beach Center on Disability," pp. 165–168, 2012.

[8] M. A. Verdugo, L. Córdoba, and J. Gómez, "Spanish adaptation and validation of the Family Quality of Life Survey," *J. Intellect. Disabil. Res.*, vol. 49, no. 10, pp. 794–798, 2005, doi: 10.1111/j.1365-2788.2005.00754.x.

[9] A. Balcells-Balcells, C. Giné, J. Guàrdia-Olmos, and J. A. Summers, "Family quality of life: Adaptation to Spanish population of several family support questionnaires," *J. Intellect. Disabil. Res.*, vol. 55, no. 12, pp. 1151–1163, 2011, doi: 10.1111/j.1365-2788.2010.01350.x.

[10] F. B. Daniela Bitencourt, Marta Gracia, "Family quality of life: conten validity of a tool for families of adults with intelletual disabiities in Brazil." ISRES Publishing, Barcelona, pp. 57–65, 2015.

[11] L. Schlebusch, S. Dada, and A. E. Samuels, "Family Quality of Life of South African Families Raising Children with Autism Spectrum Disorder," *J. Autism Dev. Disord.*, vol. 47, no. 7, pp. 1966–1977, 2017, doi: 10.1007/s10803-017-3102-8.

[12] C. Y. Chiu, H. Seo, A. P. Turnbull, and J. A. Summers, "Confirmatory factor analysis of a family quality of life scale for Taiwanese families of children with intellectual disability/ developmental delay," *Intellect. Dev. Disabil.*, vol. 55, no. 2, pp. 57–71, 2017, doi: 10.1352/1934-9556-55.2.57.

[13] N. Waschl, H. Xie, M. Chen, and K. K. Poon, "Construct, Convergent, and Discriminant Validity of the Beach Center Family Quality of Life Scale for Singapore," *Infants Young Child.*, vol. 32, no. 3, pp. 201–214, 2019, doi: 10.1097/IYC.0000000000000145.

[14] B. F. Meral and A. Cavkaytar, "Turkish adaptation, validity and reliability study of the beach center family quality of life scale | Beach Center Aile Yaşam Kalitesi Ölçeği'nin Türkçe Uyarlama, Geçerlik ve Güvenirlik Çalişmasi," *Egit. ve Bilim*, 2013.

[15] M. Rivard, C. Mercier, Z. Mestari, A. Terroux, C. Mello, and J. Bégin, "Psychometric properties of the Beach Center Family Quality of Life in French-speaking families with a preschool-aged child diagnosed with autism spectrum disorder," *Am. J. Intellect. Dev. Disabil.*, vol. 122, no. 5, pp. 439–452, 2017, doi: 10.1352/1944-7558-122.5.439.

[16] X. Hu, M. Wang, and X. Fei, "Family quality of life of Chinese families of children with intellectual disabilities," *J. Intellect. Disabil. Res.*, vol. 56, no. 1, pp. 30–44, 2012, doi: 10.1111/j.1365-2788.2011.01391.x.

[17] N. I. Zuna, J. P. Selig, J. A. Summers, and A. P. Turnbull, "Confirmatory factor analysis of a family quality of life scale for families of kindergarten children without disabilities," *J. Early Interv.*, vol. 31, no. 2, pp. 111–125, 2009, doi: 10.1177/1053815108330369.

[18] U. Lorenzo-Seva and P. J. Ferrando, "FACTOR 9.2: A Comprehensive Program for Fitting Exploratory and Semiconfirmatory Factor Analysis and IRT Models," *Appl. Psychol. Meas.*, vol. 37, no. 6, pp. 497–498, 2013, doi: 10.1177/0146621613487794.

[19] U. Lorenzo-Seva and P. J. Ferrando, "Lorenzo-Seva-Ferrando2006_Article_FACTORAComputerProgramToFitThe-2," *Behav. Res. Methods*, vol. 38, no. 1, pp. 88–91, 2006.

[20] P. J. Ferrando and U. Lorenzo-Seva, "Program FACTOR at 10: Origins, development and future directions," *Psicothema*, vol. 29, no. 2, pp. 236–240, 2017, doi: 10.7334/psicothema2016.304.