Initial Validation of the Chinese Quality of Life Questionnaire - Intellectual Disabilities (CQOL-ID): A Cultural Perspective

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Abstract

Background

In the field of intellectual disabilities (ID), the quality of life concept has been developing rapidly in Chinese societies including Hong Kong, mainland China, and Taiwan. However, there is a lack of locally validated instruments to measure the quality of life of people with ID. The study reported in this paper attempted to validate the Chinese Quality of Life Questionnaire − Intellectual Disabilities (CQOL -ID) adapted from the Quality of Life Questionnaire (QOL.Q) developed by Schalock and Keith (1993).

Method

People with mild/moderate ID aged 15 or above were recruited from special schools, skills centres, community service units, and residential units in different regions of Hong Kong. A number of procedures were followed including reliability tests,

factor analysis, content validity and construct validity.

Results

A total of 359 participants were recruited for the study. Factor analysis was conducted according to the rotated component matrix method, in which 23 items were extracted from the original 40-item version of the QOL.Q and three domains (renamed satisfaction, competence, and daily choice-making/interpersonal relations) were observed. The items in each domain were shown to have factor loadings ranging from 0.42 to 0.90. Construct validity tests indicated the positive nature of the relationship between earnings, and that self-determination and social interaction increase with more independent living environments and less segregated work environments achieving higher scores ($p < 0.000$, $p < 0.01$ and $p < 0.05$, respectively). The scale also achieved a good degree of reliability (Cronbach's $\alpha = 0.79$).

Conclusions

Initial validity tests indicated that the CQOL-ID may be a useful instrument for measuring the QOL of Chinese people with ID. Cultural issues are discussed and recommendations for future research and service development are made.

Keywords

Introduction

The study of quality of life (QOL) has in recent years become an increasing research topic across a wide range of disciplines. The use of the search terms 'Quality of life' and 'Disabilit*' in the PsycINFO database uncovered only 1,356 citations in peer-reviewed journals in the social sciences from 1970 to 1999, in contrast to 18,247 citations in the last 10 years alone, amounting to a 13-fold increase. Over the past two decades, the QOL concept has received considerable attention among scholars and has undergone a period of rapid international development in the field of intellectual disabilities (ID) on the academic, policy, and practice levels (Schalock, 2004; Schalock et al., 2005). Beyond normalization, QOL has come to play an increasingly central role in service delivery and now underpins a set of guiding principles in this area. It also provides the basis for core indicators used for outcome measurement (Schalock & Verdugo, 2002).

In the ID field in Hong Kong, recognition of the concept of QOL was first called for and promoted by the Quality of Life Enhancement Project conducted by St. James' Settlement in 1997 (Li, 2002; Wong, 1999). Since then, the service development trend

reveals the increasing use of the QOL concept in services delivered by service providers. An exploratory study has examined the overall QOL of adults with ID (Wong et al., 2001) and a number of service providers have conducted studies internally. On the direct service level, the QOL concept (especially the 8-dimensional QOL model proposed by Schalock in 1996) has received widespread attention from service users with ID, their family members, and service providers over the course of the last decade.

Schalock (1996) stresses that QOL is a concept that is subjectively interpreted by individuals. Therefore, devising a reliable and validated instrument that reflects one's *personal appraisal* (subjective indicators of quality of life) is undoubtedly a vital step in assessing quality of life. A number of QOL instruments with sound psychometric properties have been widely used in Western countries, such as the Quality of Life Questionnaire (QOL.Q) (Schalock & Keith, 1993), the Comprehensive Quality of Life Scale − Intellectual/Cognitive Disability, 5th Edition (ComQol-I5) (Cummins, 1997), and the Lifestyle Satisfaction Scale (LSS) (Heal & Chadsey-Rusch, 1985). However, this is not the case in Chinese societies, for which no instrument with good psychometric properties for measuring the QOL of Chinese with ID is yet available. Before casting off in a new direction to construct such an instrument from scratch, an important question remains: can existing instruments be applied to Chinese

populations and effectively reflect the circumstances of the Chinese people with ID?

Individuals themselves define what is important to their lives, what makes them feel satisfied and happy, and what type of lifestyle they dream for. From the ecological perspective, people's values/beliefs and behavior are influenced by the ecosystems they experience from the micro to the macro level throughout their life. People's perceptions of their quality of life are also influenced by the various ecosystems they inhabit, including the culture of which they are part. Though QOL scholars assume the role of culture to be vital, or in other words, that QOL is a culturally sensitive construct, Shek and his colleagues (2005) state that the bulk of QOL studies have focused on Western people in a Western context and that very few investigations have emphasized the Chinese people. The situation in the ID field greatly resembles the QOL research bias described by Shek et al. QOL studies concerning people with ID have largely focused on white or English-speaking populations (Hatton, 2004). Meanwhile, cross-cultural studies in the ID field demonstrate that researchers must consider both the *etic* (universal) and the *emic* (culture-bound) properties of the QOL concept if they are to measure it reliably (Jenaro et al., 2005; Schalock et al., 2005). The foregoing discussion shows there is an urgent need to validate a scale for measuring the QOL of Chinese people with ID that considers both the *etic* and the *emic* properties of the QOL concept.

QOL from the Chinese Perspective

Chinese culture teaches that a quality life consists of four core elements: wellbeing and good fortune (FU), wealth and material wellbeing (LU), longevity (SHOU), and happiness (XI) (Lin, 1999; Xu et al., 2005). Traditionally, Chinese culture places less emphasis on self-determination, rights, and social inclusion. In the studies conducted by Chou et al. (2007) and Xu et al. (2005) in Taiwan and mainland China respectively, participants with ID and/or their significant others were asked to rate the importance of eight QOL dimensions. Both sets of results ranked physical wellbeing (SHOU) and material wellbeing (LU) in the top three, while self-determination and social inclusion were ranked at the bottom (Chou et al., 2007; Xu et al., 2005). Validating a QOL scale for Chinese societies may help further examine the *etic* and the *emic* properties of the QOL construct.

The Quality of Life Questionnaire (QOL.Q)

The QOL.Q is a 40-item, 3-point Likert scale questionnaire developed by Schalock & Keith (1993) to measure overall QOL for people with ID. It consists of scores from four sub-scales: satisfaction, competence/productivity, empowerment/independence, and social belonging. Each sub-scale contains 10 items.

The original English version of the QOL.Q shows good levels of internal reliability (alpha = 0.90), inter-observer reliability, and concomitant validity (Schalock & Keith, 1993).

The QOL.Q has been used around the world, especially in North America and Europe. A Spanish version has been validated and tested among Spanish-speaking populations, the results showing a factor structure similar to that of the original version (Caballo et al., 2005).

The aims of this study were (1) to validate the Chinese Quality of Life Questionnaire – Intellectual Disabilities (CQOL-ID) by examining its psychometric properties; and (2) to examine the *etic* and the *emic* properties of the QOL construct.

Method

Participants

This study was carried out as a Hong Kong-wide investigation and was based on a convenience sample. A total of 359 participants with mild/moderate intellectual disabilities aged 15 or above who had adequate receptive and expressive language skills were recruited from special schools or social service units in different regions of Hong Kong. Formal invitation letters were sent out to all special schools and adult service units that serve people with mild/moderate ID. The final sample included

participants from 39 schools/service units. The participants comprised 184 (51.3%)

men and 175 (48.7%) women, and the mean age of the group was 29.5 (SD = 11.9).

Three hundred and forty-two (95.3%) participants had mild ID and 17 (4.7%)

moderate ID with receptive and expressive language skills assessed adequate by

clinical psychologists to answer the questionnaire. A total of 251 (69.9%) participants

had no other type of disability, 25 (7%) suffered from autism, 17 (4.7%) had a mental

illness, and 66 (18.4%) had a physical disability. Two hundred and four (56.8%) of the

participants lived with their families, while 147 (40.9%) lived in supervised hostels.

The demographic characteristics of the participants are reported in Table 1.

Instrumentation

To verify the content equivalence of the two versions, the Chinese version of the

QOL.Q used by Chou et al. (2008) was back-translated by a bilingual professional

experienced in translation who was blind to the original English version. A panel

comprising the principal author and 2 experienced social workers reviewed the

back-translated version. A high level of consistency between the original English

version and the back-translated version was achieved for all except 3 items ("How

many times per month do you feel lonely?", "What about your family members? Do

they make you feel:…", and "How closely supervised are you on your job?"). It was

found that the meanings of these 3 items in the version employed by Chou et al. were slightly different from those of the equivalent items in the original English questionnaire. These 3 items were re-translated by the panel on the basis of the original English version and the backward translation process was repeated. The final version of CQOL-ID used in the study was generated once the panel reached a consensus on the appropriate wording of the 3 items in question.

The face and content validity of the CQOL-ID was then reviewed by another expert panel consisting of a social work educator and two social workers with a significant level of experience in the ID field. They were invited to comment on the relevance and appropriateness of the items included in the questionnaire. A pilot test was also carried out to explore the content validity of the CQOL-ID. Twelve participants with mild ID participated in the pilot test. Of these, six were studying in special schools and another six were living in supervised hostels. The test revealed no major problems, but a few wordings in the tested questionnaire were changed to give the participants a more concrete understanding of the questions. For example, in the item "Are most of the things that happen to you: rewarding, acceptable or disappointing?", the word "rewarding" was originally translated as "worthwhile" in Chinese but was later changed to a phrase meaning "got positive results after effort made". In the item "Do you have more or fewer problems than other people?", the

word "problem" was changed to a Chinese word for which the meaning is closer to "difficulty".

Procedure

This study adopted a self-rating method via individual face-to-face interviews. No proxy response was allowed. A total of six social workers working in the ID field who were able to communicate well with people with ID were recruited as interviewers. For consistency, the interviewers were given a 4-hour training session in which they learned proper interviewing skills and interviewing procedure.

Data were collected between mid-July and early November 2007. The trained interviewers conducted individual face-to-face interviews at the school or service unit of each individual participant. Participants were assured that their privacy, confidentiality, and anonymity would be protected and informed written consent was sought from each participant before the interview began. All participants were fully informed of their autonomy and the voluntary nature of their responses in the interview process, and were told they could withdraw at any time. On average, completion of the questionnaire took approximately 25 minutes.

Data analysis and statistics

Exploratory factor analysis (principal component analysis) was first carried out with SPSS 17.0 for Windows to evaluate the factor structure of the CQOL-ID by examining factor loadings, construct validity, and item-total internal consistency. Construct validity defines how well a test measures the underlying construct being investigated. In this study, it refers to evaluation of the questionnaire by looking at the relationship between the questionnaire and the phenomena the theory predicts. For example, a number of developmental disability studies support the view that self-determination increases with a more independent living environment and a more competitive work environment (e.g. Abery & Stancliffe, 1996; Wehmeyer & Bolding, 1999). A panel was also formed to analyze the factor structure of the questionnaire in consideration of the characteristics of and developments in the ID field from the local and cultural perspectives. The panel consisted of the principal author and 2 social work professionals who had worked in the ID field for more than 15 years. Both social work professionals held middle-management positions, one had an ID research background, and the other possessed a thorough knowledge of Chinese history and culture. The internal consistency of the CQOL-ID was assessed by computing Cronbach's alpha for the scale and its constituent parts. A Cronbach's alpha value of 0.7 is generally considered to be sufficient to demonstrate internal consistency (Nunnally, 1994).

Results

Factor structure

The number of cases used for exploratory factor analysis was 359. The correlation matrix was tested using Bartlett's test of sphericity ($x^2 = 3878.7$, $df = 780$, $P < 0.001$). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated as 0.793, which was greater than the required value of 0.5. Results suggest that the items included in the scale were interrelated and were suitable for factor analysis.

Exploratory factor analysis (EFA) was conducted according to the rotated component matrix method. Items with a pattern coefficient of greater than 0.40 were retained. EFA suggested that a 3-factor model accounted for 42.06% of the variance in the observed variables. Twenty-three items were extracted from the original 40-item version and were rearranged into 3 sub-scales (renamed satisfaction, competence, and daily choice-making/interpersonal relations) instead of 4. The 'satisfaction' sub-scale contained 9 items including 3 items from the original 'competence & social belonging' sub-scale. For the 'competence' sub-scale, all items were retained other than the first two items included in the 'satisfaction' sub-scale. Six items from the original 'empowerment/productivity' and 'social belonging' sub-scales were retained

and made up the new 'daily choice-making/interpersonal relations' sub-scale. The factor loadings for each item after varimax rotation are presented in Table 2. The items in each sub-scale were shown to have factor loadings ranging from 0.42 to 0.90. Though a few items had loadings of below 0.5, the results were still satisfactory as the CQOL-ID employs a 3-point Likert scale in which the scale of the acceptable difference within each point is larger.

Construct Validity

Significant correlations were found in the expected directions. The total mean scores were positively correlated with the satisfaction sub-scale ($r = 0.60$, $p < 0.01$), the competence sub-scale ($r = 0.86$, $p < 0.01$), and the daily choice-making/interpersonal relations sub-scale ($r = 0.38$, $p < 0.01$).

Prior studies support the hypothesis that QOL is positively correlated with earnings, and that self-determination and social interaction increase with more independent living environments and less segregated work environments. Table 3 shows that the total mean scores of the whole scale varied according to income. The mean scores for participants earning more than HKD1,000 and less than HKD1,000 were 54.38 (n = 60) and 50.58 (n = 154), respectively (F (12.702), $p<0.000$). As shown in Table 4, the more independent the living environment, the higher the daily

choice-making/interpersonal relations score. The mean daily choice-making/interpersonal relations sub-scale scores were 12.22 (n = 58) and 10.92 (n = 65), respectively, for participants in semi-independent living and supervised living environments (F (10.592), $p < 0.01$). Table 5 shows that scores on the daily choice-making/interpersonal relations scale varied according to the work environment. The mean scores for participants in open/supported employment and sheltered workshops were 12.44 (n = 79) and 11.69 (n = 140), respectively (F (5.988), $p < 0.05$).

Internal Consistency

The CQOL-ID achieved a good degree of reliability. Cronbach's alpha (α) for the whole scale was 0.79. Cronbach's α for the 'satisfaction', 'competence' and 'daily choice-making/interpersonal relations' sub-scales was 0.70, 0.88, and 0.52, respectively. All reliability coefficients were considered to be moderate to high.

Discussion

The CQOL-ID is the only validated Chinese questionnaire measuring the QOL of people with ID. The CQOL-ID achieved a good degree of reliability and its content and constructs were shown to be valid. The findings of this study suggest that the

CQOL-ID may serve as a useful tool for measuring the QOL of Chinese people with ID. It is proposed that a three-factor structure be used for the CQOL-ID instead of the original four-factor structure employed in the QOL.Q. All items of CQOL-ID achieved satisfactory factor loadings. The change in the factor structure may reflect the *emic* property and cultural sensitivity of the QOL construct to a greater degree.

Competence aspect

Competence is the only sub-scale with items fully retained from the original QOL.Q. This may suggest the *etic* property of the QOL construct. In Chinese culture, the ability to work is an important indicator of competence. Hwang (2006) maintains that four factors contribute to work motivation among the Chinese: *future development* (e.g. sense of achievement and opportunity for future development), *horizontal competition* (e.g. work performance, salary increase, and supervisor's recognition), *vertical identification* (e.g. employee fringe benefits), and *work environment* (e.g. subjective feelings about the human environment of one's workplace) (Hwang, 2006). These indicators are fully reflected in the items found in the competence sub-scale. Therefore, it is not surprising to find that our respondents valued work competence as an essential aspect of QOL.

Satisfaction aspect

The following four items from the original satisfaction sub-scale were ruled out in the CQOL-ID: "Do you have more or fewer problems than other people?", "How many times per month do you feel lonely?", "Do you ever feel out of place in social situations?", and "What about your family members? Do they make you feel an important part of the family or like an outsider?" The Chinese concept of face saving, or *mianzi* (Gabrenya & Hwang, 1996; Yang, 2006), may account for the exclusion of these questions from the study, as participants may not have been willing to disclose their personal weaknesses or those related to their families.

Interpersonal relationship aspect

Six items from the original social belonging/community integration sub-scale (those related to community club participation and relationships with neighbours) were deleted from the QOL.Q. This may be explained by the nature of personal relationship in Chinese culture. *Wu-lun* describes five principal relationships of traditional Confucian philosophy: those between emperor and minister, father and son, husband and wife, brother and brother, and friend and friend. This relationship hierarchy draws a distinction between in-group members and those outside the group (referred to as qin-shu-you-bie), a distinction which plays an important role in social

interactions in Chinese society (Gabrenya & Hwang, 1996; Goodwin & Tang, 1996).

Only relationships with "in-group" people are likely to influence one's QOL. This

hierarchical concept may also explain why affiliations with associations or

organizations are not particularly important to Chinese people as one's primary source

of support comes from in-group members. Nonetheless, the items relating to

friendship and dating or marriage (the relationships in the *wu-lun*) were retained

because these relationships are important in Chinese society.

Self-determination aspect

Only 3 items from the original empowerment/independence sub-scale were

retained in the CQOL-ID. This echoes the findings of studies conducted by Chou et al.

(2007) and Xu et al. (2005) revealing that self-determination is less important among

the 8 QOL factors. Given our long history, Chinese people have traditionally been

socialized to be obedient to authority, highly disciplined, and subject to stringent

controls, with less emphasis being placed on independence, liberty, and assertiveness

(Wu, 1996). Collectivism is another traditional Chinese value that is a core

component of Chinese culture (Yang, 2006). Under collectivism, individuals are

constrained from making decisions on their own and are socialized to think and act for

the collective interest. Parents of young children of limited independence will make

decisions on their behalf. This traditional value and the history of parental control in Chinese culture may explain why a number of related items (e.g. "Who decides how you spend your money?" and "May you have a pet if you want?") were ruled out of the Chinese version of the QOL.Q. Due to the misconception that people with ID are "perpetual children," parents and paid caregivers normally adopt an over-protective attitude and avoid risk taking when interacting with them. Thus, people with ID may not be given the opportunity to exercise control over their own lives and are therefore unable to make relatively important decisions such as how to use money or whether to look for a job. However, they are expected to learn to manage and regulate their daily lives and health-related matters because these are regarded as elements of self-regulation or self-discipline. Therefore, daily choice-making as reflected in statements such as "How much control do you have over things you do every day, like going to bed, eating, and what you do for fun?" is still important to one's QOL.

There are several limitations in our study. First, given that the stability of the CQOL-ID over time was not tested, future research validating its test-retest reliability is recommended. Second, due to the status of this study as an initial validation exercise, its results should be further confirmed through more rigourous validity tests. It is expected to further examine concurrent validity and convergent validity of the scale when there are more studies in the Chinese population in the future. Moreover,

the addition of new elements such as family relationships can be considered in future

to make the CQOL-ID more culturally appropriate. Finally, the future is likely to

bring a greater emphasis on the QOL dimensions of self-determination, rights, and

social inclusion due to ongoing developments in the social and service arenas of

Chinese societies. It is therefore recommended that the factor structure of the

CQOL-ID be reviewed and revised from time to time.

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Table 1

Demographic characteristics of participants

Variable	Frequency	%
Sex		
Male	184	51.3
Female	175	48.7
Age Group		
15-24	151	42.1
25-34	91	25.3
35-44	64	17.8
45-54	42	11.7
55-64	11	3.1
IQ Group		
Mild	342	95.3
Moderate	17	4.7
Types of Disability other than ID		
Autism	25	7
Mental Illness	17	4.7
Physical Disability	66	18.4
Living Environment		
Home	204	56.8
Supervised Hostel	147	40.9

Table 2

Factor structure of the CQOL-ID: Factor loadings from the rotated component matrix – three-factor model

Item	Factor 1	Factor 2	Factor 3
Satisfaction (9 items)			
How much fun and enjoyment do you get out of life?	**0.64**	-0.16	0.21
Compared to others, are you better off, about the same, or less well off?	**0.51**	0.04	-0.07
Are most of the things that happen to you: Rewarding? Acceptable? Disappointing?	**0.42**	0.12	0.24
How satisfied are you with your current home or living arrangement?	**0.52**	0.15	-0.06
How successful do you think you are, compared to others?	**0.48**	-0.01	0.08

Overall, would you say that life: Brings out the best in you? Treats you like everybody else? Doesn't give you a chance?	**0.59**	0.04	0.10
How well did your educational or training programme prepare you for what you are doing now?	**0.55**	-0.03	-0.01
Do you feel your job or other daily activity is worthwhile and relevant to either yourself or others?	**0.64**	0.126	-0.03
Overall, would you say that your life is: Very worthwhile? Okay? Useless?	**0.47**	0.11	0.03

Competence (8 items)

How good do you feel you are at your job?	0.20	**0.79**	0.01
How do people treat you on your job?	0.03	**0.84**	0.05
How satisfied are you with the skills and experience you have gained or are gaining from your job?	0.12	**0.90**	-0.03
Are you learning skills that will help you get a different or better job? What are these skills?	0.11	**0.72**	0.13
Do you feel you receive fair pay for your work?	0.11	**0.83**	-0.01
Does your job provide you with enough money to buy the things you want?	0.04	**0.53**	-0.03
How satisfied are you with the benefits you receive at the workplace?	0.09	**0.89**	-0.07
How closely supervised are you on your job?	-0.05	**0.68**	0.16

Daily Choice-making/Interpersonal Relations (6 items)

How do you use health care facilities (doctor, dentist, etc.)?	-0.15	0.22	**0.54**
How much control do you have over things you do every day, like going to bed, eating, and what you do for fun?	0.02	0.03	**0.52**
When can friends visit your home?	-0.11	0.15	**0.58**
Do you have friends over to visit your home?	0.10	-0.05	**0.50**
How often do you attend recreational activities (parties, dances, concerts, outings) in your	0.16	-0.04	**0.51**

community?

What about opportunities for dating or marriage?	0.09	-0.19	**0.57**

17 items deleted for which loadings were lower than 0.400

Do you have more or fewer problems than other people?

How many times per month do you feel lonely?

Do you ever feel out of place in social situations?

What about your family members? Do they make you feel:

How did you decide to do the job or other daily activities you do now?

Who decides how you spend your money?

Do you have a key to your home/hostel?

May you have a pet if you want?

Do you have a guardian or conservator?

Are there people living with you who sometimes hurt you, pester you, scare you, or make you angry?

Overall, would you say that your life is: Free? Somewhat planned for you? Cannot usually do what you want?

How many civic or community clubs or organizations (including church or other religious activities) do you belong to?

How satisfied are you with the clubs or organizations to which you belong?

Do you worry about what people expect of you?

How many times per week do you talk to (or associate with) your neighbours, either in their home or at the front door?

Do you participate actively in those recreational activities?

How do your neighbours treat you?

Note. Principal component analysis with varimax rotation. Loadings in bold indicate the factor on which the item was placed.

Table 3

Comparison of the Total Mean Scores between Income Groups

	Earning Less Than HKD 1,000. (n = 154)		Earning More Than HKD 1,000. (n = 60)			
	M	SD	M	SD	F	p
Total Mean Scores of CQOL-ID	50.58	6.88	54.38	7.35	12.702	0.000

Note. Significance level at $p < .00$

Table 4

Comparison of Mean Daily Choice-making/Interpersonal Relations Scores between Living Environment Groups

	Semi-independent Living Environment (n = 58)		Supervised Living Environment (n = 65)			
	M	SD	M	SD	F	p
Daily Choice-making/ Interpersonal Relations Scale	12.22	2.15	10.92	2.27	10.592	0.001

Note. Significance level at $p < .01$

Table 5

Comparison of Mean Daily Choice-making/Interpersonal Relations Scores between Work Environment Groups

	Open/Supported Employment (n = 79)		Sheltered Workshop (n = 140)			
	M	SD	M	SD	*F*	*p*
Daily Choice-making/ Interpersonal Relations Scale	12.44	2.16	11.69	2.22	5.988	0.015

Note. Significance level at $p < .05$