

Reliability and Validity of the “Personal Well-Being Index-Cognitive Disability” on Mentally Retarded Students

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Objective: Having a good quality of life has always been desirable for humans, and the concept of a good life and the ways of achieving it have become important over the years. Personal wellbeing is the mental component of quality of life. Thus, the current study was conducted to assess the reliability and validity of the “Personal Well-Being Index-Cognitive Disability” on mentally retarded students.

Method: 200 mentally retarded students in north districts of Tehran (districts 1, 2 and 3) were selected by systematic random sampling. The collected data using Personal Well-Being Index- Cognitive Disability was analyzed by Cronbach’s alpha coefficient for internal consistency and linear multivariate regression for construct validity.

Results: Results confirmed the reliability and validity for the Personal Well-Being Index- Cognitive Disability in mentally retarded students of exceptional schools. Studying the internal consistency of seven items showed that all the items were correlated with the total score and their scores averages were similar to each other. This indicates that the test’s questions have reliability with regard to evaluation of a common feature and results showed Personal Well-Being Index- Cognitive Disability had the most extensive coverage of construct validity .

Conclusion: Personal Well-Being Index- Cognitive Disability scale could be applied to measure personal wellbeing in mentally retarded students.

Words: Reliability; Validity; Mentally retarded student; Personal Well-being and Cognitive Disability

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Personal well-being (PWB) is the most global term used to describe how people feel about their lives. It includes people’s emotional responses, satisfaction with life domains, and global judgment of life quality (1). Thus, PWB comprises measures of cognition (satisfaction) and affects (positive affect) (2). The cognitive component of PWB can be described in two ways: life satisfaction and subjective quality of life. Subjective well-being (SWB) has been defined as a construct that reflects peoples’ perceptions of their lives in terms of emotional behavior and psychosocial functioning, which are all essential dimensions of mental health (3). SWB research indicates the domains of personality, motivation and a group of cognitive buffers (perceived control, self-esteem and optimism); all contribute to people’s life satisfaction (4). PWB is an integral factor of SWB. Studies have found seven domains important to PWB: standard of living, health, achievement in life, safety, relationships, community connectedness, and future security (5). These domains are valuable in understanding the psychological and physical makeup of individuals and identifying components that contribute to PWB in general.

There is likely to be a positive association between an affirming style of problem-solving and well-being. Relatively few researchers have assessed well-being in disabled children. Besides, the existing research has mainly focused on negative indicators of well-being. Moreover, the available findings are contradictory and inconclusive. For instance, in a longitudinal study conducted by Carr (6), siblings of children with Down syndrome were reported to have fewer behavioral problems in comparison with others. On the other hand, Gath and Gumley (7) found no difference in behavioral problems between siblings of children with Down syndrome and compared siblings. In a study by McHale and Gamble (8), siblings of children with disabilities showed higher depression, higher anxiety, and lower perceived competence than compared siblings. Lobato et al. (9) found that brothers of children with disabilities had significantly higher depression and aggression scores than sisters of children with disabilities or siblings in the comparison group. Additionally, sisters of children with disabilities had higher aggression scores than comparison sisters. No difference was found between the perceived competence of siblings of children with disabilities and comparison siblings.

Lau and Cummins have been done to evaluate the reliability and validity of PWI. Sixteen surveys of the Australian population have produced a maximum variation of 3.2 percentage points in PWI (see Australian Unity Wellbeing Index Report 16.0) (10). Furthermore, PWI has been shown to have a good internal reliability with a Cronbach's alpha of 0.89 in another research (11). Miller (12) has reported a corresponding coefficient of 0.86 .

Construct and convergent validity of PWI have been approved in previous studies. A correlation of 0.78 with satisfaction with life scale has been reported for construct validity (13,14). Regarding convergent validity, the eight domains form is a single stable factor and accounts for about 50% of the variance in Australia and other countries (10). Agha Yousefi and sharif (15) conducted a research to evaluate the reliability and validity of PWI-A in the wives of self-sacrificed men in Qom city. According to the results of this research, the internal consistency of this scale was equal to 0.845 by Cronbach's alpha coefficient

PWB is a test that has been standardized and normalized by criteria and regulations of Australia. For providing the required grounds in adapting and standardizing this test in Iran, its scientific state, validity and reliability should be qualified. Hence, the general aim of this research was the Reliability and Validity of the Personal Well-Being Index- Cognitive Disability for mentally retarded students of exceptional schools in north districts of Tehran and its special targets were as follows:

- 1- Introductory evaluation of the reliability of Personal Well-Being Index-Cognitive Disability.
- 2- Introductory evaluation of the validity of Personal Well-Being Index- Cognitive Disability.

Material and Methods

Participants and Statistical analysis

In this study, we gathered the total sample size is 200 of mentally retarded students in north of Tehran (districts 1, 2, 3) and the sample size was determined according to previous research (11-12) and also Sample size for preliminary evaluation of reliability and validity test. Data were analyzed by Cronbach's alpha coefficient for internal consistency and linear multivariate regression for construct validity (Since this scale has seven items and each item measures comments and feedback of the person about one area of personal well-being, the designers (16) of this scale believe that the individual score in each area plays an important role in the distribution of overall life satisfaction scores (The first single item and separated from the other seven items). Therefore, the designers have recommended linear multivariate regression analysis for validity assessment in which individual score in single item of overall life satisfaction as the dependent variable and the seven items scales as prediction variables are considered).

Procedure

After obtaining an authorization for the study from Tehran's exceptional education

Organization, we referred to Sayyad Shirazi girl's exceptional school and Piroozi boy's exceptional school located in north of Tehran .

In these schools, a total of 200 mentally retarded students were selected of morning shift from 8 to 12 and afternoon shift from 2 to 5 and were studied in the counseling room. During this period, eight meetings with the mothers were held before research on Their children and after describing the aims of the research, all mothers signed a written consent form.

Instruments

The test in this research was the personal well- being index- cognitive disability scale (16) that was conducted for mentally retarded students. This indicator consists of five stages. At the beginning of the test, some questions are asked about agreement responses that determine whether the student should continue the test or not. If the student succeeds, he/ she will enter the next stage which is the testing of Likert scale sufficiency and the student should numerate from zero to ten. Then, the student enters the total happiness scale of personal well- being index that consists of eight questions in two parts.

The first part asks about life satisfaction: Are you satisfied with your life?; and the second part consists of questions regarding the following issues: 1) life standards and conditions; 2) health; 3) achievements in life; 4) relationships with others; 5) safety and peace in life; 6) dependence and membership among others; 7) future safety. The student responses to each of the eight items with Likert scale of zero to ten, with each number showing the following states:

Zero: Completely dissatisfied and sad;

Five: Average; ten: Completely satisfied and happy; between zero and five: Completely dissatisfied and sad to average; and between five and ten: Average to completely satisfied and happy. If the student does not succeed at the Likert scale stage, another three stage test will be used for him which (cube test) consists of three two – cube, three- cube and five- cube stages. The fourth stage is to match with the abstract reference (step building by cubes) that consists of three stages: two steps, three steps and five steps. The fifth stage is to match with the abstract reference (images stage) in which the child shows his/her satisfaction in each item with regard to the images (two faces, three faces and five faces) (16).

The Construct validity of this indicator questions was 0.78 with respect to satisfaction scale; and according to 12 studies conducted in Australia, the maximum changes of the reliability was 3.1 percent of personal well- being and in Australia and other world regions, Cronbach's alpha coefficient was 0.70- 0.85(16). The correlation between the questions was 30%-55% and the sum of questions correlation was at least 50% in PWI-A version (10) .

All the questions of Personal well-being Index-Cognitive Disability were translated and revised based on (ComQol) and PWI protocol. Then, the translated text was back translated, and the two forms were compared. Finally, the translated text was revised and given to several professors holding a PhD in psychology; and their professional suggestions were included in the translations. To identify the face validity and initial survey, the Persian version of the Personal well-being Index- Cognitive Disability scale was given to 30 people, and they were asked to identify ambiguous items. It is noteworthy that they agreed with the identify ambiguous. Finally the unclear items were then revised.

Result

Two hundred mentally retarded students had a minimum age of 9 and a maximum age of 21 years and their mean age was 14.49 ± 2.66 . Demographic A characteristic is demonstrated in table 1.

Reliability Criteria

Cronbach's alpha coefficient the seven items of Personal Well-Being Index- Cognitive Disability was between 0.56 - 0.62 .Besides, studying the internal consistency of these items showed that all the seven items were correlated with the total score and their scores averages were similar to each other. This indicates that the test's questions have reliability with regard to evaluation of a common feature.

It should be mentioned that one hundred of mentally retarded students participated in test-retest reliability study. The results are presented in Table 3.Also, the results of coefficients test-retest using the Pearson

correlation between initial and retest scores were significant at 0.001 level.

Results of KMO and Bartlett's test showed that the sample size was sufficient for analysis. Bartlett test of sphericity resulted in a Chi-square value of equal to 818.974 with 406 degrees of freedom that was significant in an alpha level of 0.001.

Construct Validity

As previously mentioned, Since this scale has seven items and each item measures comments and feedback of the person about one area of personal well-being, the designers of this scale believe that the individual score in each area plays an important role in the distribution of overall life satisfaction scores (The first single item and separated from the other seven items). Therefore, the designers have recommended linear multivariate regression analysis for validity assessment of Personal Well-Being Index-Cognitive Disability (16) in which individual score in single item of overall life satisfaction as the dependent variable and the seven items scales as prediction variables are considered. Table 4 displays the results of this regression analysis, in which the expressive "F" index is significant. And results of linear multivariate regression analysis with Enter method showed that the scale items can predict 67% of distribution of overall life satisfaction.

Besides, there was a significant relation between the questions of part one and the questions of part two, After implementation of linear multivariate regression analysis, regression coefficients were calculated for the seven items and the results showed that the among the seven items of Personal Well-Being Index- Cognitive Disability scale, Items 2 and 7 has Significant contribution to the prediction of satisfaction with life in mentally retarded students in north of Tehran.

Table 1: Demographic characteristics of mentally retarded students

Students'	Sex	Age	Age
Female	Male	Range	Mean ± SD
100	100	9-21	14.49 ± 2.66

Table 2: Cronbach's alpha for mentally retarded students

Item	Mean	Variance	Correlation	Alpha
PW1	400.1250	18518.4516	0.5875	0.6295
PW2	409.2750	16642.5622	0.5294	0.5998
PW3	414.2500	14799.1834	0.5753	0.5740
PW4	413.9750	15653.5923	0.5503	0.5871
PW5	417.1500	15107.1633	0.5134	0.5649
PW6	413.3750	15717.5722	0.5659	0.5818
PW7	434.3500	16061.8869	0.5686	0.6170

Table 3: Coefficient alpha and test-retest

Item	Alpha	Re-test
PW1	0.6295	0.6417
PW2	0.5998	0.6252
PW3	0.5740	0.5975
PW4	0.5871	0.5750
PW5	0.5649	0.6035
PW6	0.5818	0.6143
PW7	0.6170	0.6514

Table 4: ANOVA-Linear multivariate regression by Enter method for mentally retarded students

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	121.977	7	17.425	4.587	0.001
Residual	729.303	192	3.798		
Total	851.280	199			

Table 5: Regression coefficients of seven items of Personal Well-Being Index- Cognitive Disability

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	.001	.581		.003	.998
PW1	.007	.006	.085	1.177	.241
PW2	.009	.004	.150	2.063	.040
PW3	.000	.004	.004	.055	.956
PW4	.005	.004	.102	1.356	.177
PW5	-.001	.004	-.020	-.260	.795
PW6	.006	.004	.109	1.404	.162
PW7	.012	.004	.244	3.177	.002

Discussion

This is the first study which evaluates the validity and reliability of the Personal Well-Being Index- Cognitive Disability on mentally retarded students in north of Tehran. The results confirmed the reliability and validity for the Personal Well-Being Index- Cognitive Disability in mentally retarded students of exceptional schools in north districts of Tehran. Findings of this study are relatively harmonious with studies of Lau and Cummins (10), Miller (12), Davey (17) and Davern (18). Also, the results of this study is relatively harmonious with that of Diener, Emmons, Larsen, Griffin (13) and Tomas (14), which reported a correlation of 0.78 between the satisfaction and life scale. Lau and Cummins (10) reported the eight domains form to be a single stable factor which accounts for about 50% of the variance in Australia and other countries.

Overall, PWB is an important construct, as its low levels can lead to depression or social isolation (19, 20). In this regard, identification of factors that maintain high levels of SWB such as community connectedness are important for developing strategies to prevent problems associated with low levels of SWB. With regard to the extracted data from the results of this research, it can be concluded that mentally retarded students in north districts of Tehran had lower emotional, mental and behavioral and, in general, improper reactions to the environmental and social desirable stimulus. Therefore, using efficient and effective strategies and ability of researchers to control interfering factors have resulted in validity and reliability of this indicator in north districts of Tehran. In addition, the studied children and teenagers have experienced similar mental conditions, family and economic stresses and similar environmental conditions. They accepted the facts and tried to solve their problems, engaged in group programs such as Collective game, Expression of events, memoirs and short stories and interacted with friends and got involved in physical activities and cognitive programs

such as counting digits down, and also sports. Further, they were not disappointed with undesirable attitude and response of people and society. They, with a heart full of hope, did not think about their weaknesses and disabilities and tried to see a light in the darkness and tried to be active and dynamic and to think about their capabilities. Parents' respect increased these children's self- respect and created internal security and emotional immunity against cultural and social plagues.

In general, it can be concluded that the Personal Well-Being Index- Cognitive Disability on mentally retarded students of north districts of Tehran is a valid and reliable scale. Therefore, we suggest that the experts of exceptional education and psychology clinics to use this index to identify the well-being of mentally retarded students.

Limitations

As a limited group of mentally retarded students were enrolled in this study, these findings cannot be generalized.

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