Cross-Cultural Adaptation and Evaluation of Psychometric Properties of Persian Version of Supports Intensity Scale among Adults with Intellectual and Developmental Disabilities

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ABSTRACT

Purpose: *This study was designed to translate and assess the psychometric properties of Supports Intensity Scale among adults with intellectual and developmental disability in Ahvaz and Tehran, Iran.*

Method: *The cross-sectional study was carried out in two stages. The first stage consisted of the forward-backward translation of Supports Intensity Scale - Adult Version) SIS-A). In the second stage, 197 people with intellectual and developmental disabilities were recruited in order to assess the internal consistency and test-retest reliability, concurrent and content validity of SIS-A. The confirmatory factor analysis (CFA) was performed to approve the seven-factor model of the instrument.*

Results: *The intra-class correlation coefficient values varied between 0.85 and 0.99 (very good to excellent). All subscales of the SIS-A showed Cronbach's alpha above 0.70. Correlation coefficient between SIS-A and Barthel index was about -0.65, which shows excellent concurrent validity of SIS-A. The findings showed SIS-A had high ability to discriminate between groups with different IQ ($p<0.05$). There was no significant correlation between SIS-A and the age of participants ($p>0.05$). The result of CFA confirmed that the seven-factor model of SIS-A is the fittest pattern for SIS-A.*

Conclusion: *The results indicated that the Persian version of SIS-A is a valid and reliable instrument to assess function and disability among people with intellectual and developmental disability.*

Keywords: *Intellectual and developmental disability, SIS-A, Barthel*

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INTRODUCTION

Assessing and measuring the support that people with intellectual and developmental disabilities need is very important since this type of disability affects many different aspects of life and increases the responsibilities of families and the economic burden for societies (Thompson, 2008; Schalock et al, 2010). The American Association on Intellectual and Developmental Disabilities (AAIDD) designed and introduced the Supports Intensity Scale - Adult Version™ (SIS-A™) over a 5-year period to address the problems of individuals with these disabilities. The purpose of designing and presenting this Scale was to have a valid and reliable tool to determine the support and service levels required for people with intellectual and developmental disabilities. Unlike other support measurement tools, SIS-A is a practical tool that evaluates the support needs on 57 domains of important life activities. Health policy-makers and planners can also use this tool to organise facilities and improve the process of fair allocation of resources. Another advantage is that this Scale helps in prioritising the amount and type of support needed, creating opportunities to empower individuals, helping them adapt their abilities and skills with their tasks, and helping to improve the decision-making process at the national level (Luckasson,2002; Buntinx & Schalock,2010; Watson et al, 2011; AAIDD 2017 (online)).

SIS-A assesses and evaluates three important aspects of life including specialised medical and behavioural support needs, the support needs index, and litigation activities among people aged 16 and above (AAIDD 2014). The results of recent studies have shown that SIS-A has a high degree of intraclass reliability, and that the internal consistency of the tool is higher than the minimum acceptable value. In a study by Verdugo et al (2010), carried out with the aim of validating the Spanish version of this tool, the results indicated that the construct validity of the Scale was perfect and all aspects of this Scale had a Cronbach's alpha higher than 0.9, indicating the high internal consistency of SIS-A. This scientific tool has been translated into English, French, Japanese, Chinese, Hebrew, Catalan and seven other languages and its psychometric properties have been tested (Verdugo et al, 2010).

Objective

The aim of this study was to first translate the English version of SIS-A into the language and culture of the Iranian people, and then measure its psychometric properties among individuals with intellectual and developmental disabilities so that the tool could be used to measure the level of the needed support.

METHOD

Study Sample

The available sampling method and the Cochran formula were used to select 197 adults with developmental and mental disabilities, living in the two metropolises of Ahwaz and Tehran. The number of Support Scale questions was also kept in mind.

Inclusion criteria were:

- Onset of the disability before the age of 18, with confirmation by a psychologist or a physician that this disability would result in a limitation in the physical and mental performance or both (according to the definition of developmental and mental disability).
- Being literate and able to read and write in Persian (the person himself/herself or, if necessary, family members or caregivers who had been continuously interacting with the person for at least 6 months).

Exclusion criteria:

- If the individual's IQ score was not recorded in his/her portfolio.
- If the individual or his/her family was not willing to continue participating.

Before commencing the study, all participants (parents of persons with intellectual and developmental disability) signed an informed consent form which had been approved by the local ethics committee. Data on the demographic characteristics of the subjects such as language, gender, IQ, ethnicity, the type of disability, the status of residence, the place of residence, education level, and employment status were collected. This data was then recorded in the form of the Support Scale.

Measures

The Support Intensity Scale -This Scale was designed by Thompson et al (2008) to measure and assess the support level needed by individuals, 16 years of age and above, with intellectual and developmental disabilities, in order to enable them to effectively participate in most social life situations and activities. It includes the following three important domains of life:

1) Supporting specialised medical and behavioural needs (32 questions);

2) Support index - the first aspect: in-house activities with 8 questions; the second aspect: activities related to community life with 8 questions; the third aspect: continuous learning activities with 9 questions; the fourth aspect: job-related activities with 8 questions; the fifth aspect: health and safety activities with 8 questions; and the sixth aspect: social activities with 8 questions; and,

3) On litigation and support activities (8 questions).

The duration of the interview to complete this Scale is about 2 hours. To manage and complete the Scale and obtain the raw score for each question, the interviewer must first determine the type of support needed (0 = no support, 4 = needs full physical assistance), the frequency of support required (0 = none or fewer than once a month, 4 = support needed every hour or more), and the duration of daily support (0 = none, 4 = four hours or more), and then add up the obtained score for each of these three parts so that the raw score for each question and aspect is calculated (Thompson et al,).

Barthel Index - The Barthel questionnaire contains 11 questions, of which the question on "the degree of activeness" or "wheelchair access" is filled for each person. In case a person gets a zero score on the "the degree of activeness" question, "wheelchair access" is considered as an alternative question. In this questionnaire, depending on the subject's condition and the nature of the question, a score between 0 and15 is allocated. To "moving from chair to bed and vice versa" and "activeness" questions, each a maximum of 15 points; to "going up and down the stairs", "using of the toilet", "faeces control", "urine control", "eating food", and "dressing" questions, each a maximum of 10 points; and to "using the wheelchairs", "bathing" and "personal hygiene" questions, each a maximum of 5 points are allocated. The first option in each question is "inability" and the fifth option is "complete independence".

In sum, this tool determines the ability of a person in different aspects of daily performance on a scale of 0 - 100, with higher scores indicating a better situation. Scores 20 - 60 indicate strong dependence, scores 61 - 90 intermediate dependence, scores 91 - 99 partial dependence, and score 100 indicates complete independence (Tagharrobi et al,2011).

Translation and Modifications implemented in the Persian version of SIS-A

Through searches on scientific sites and databases such as Science Direct and Pub Med, it was determined that no studies had been conducted to measure the

psychometric properties of the Persian version of the Support Scale. Therefore, the translation process was carried out according to the IQOLA protocol after obtaining permission from AAIDD to translate and assess the validity and reliability of the Scale (Bullinger et al, 1998).

In step 1(primary translation), the original version of the Support Scale was translated into Persian by two Farsi speakers who were very proficient in the English language. In step 2(analysis), the research team (physiotherapy, occupational therapy, and rehabilitation management groups), together with the translators, discussed the primary versions of the translation. Their discussion resulted in a single tentative translation. In step 3 (reviewing the quality of translation), another translator was employed (an expert with proficiency in Persian and English texts and literature).Translation quality aims to ensure the appropriateness of phrases and sentences in terms of clarity, use of common language, and the uniformity of concepts. At this step, a series of modifications was carried out on the Scale; thus, the questions regarding the original language, the ethnicity and race of the respondents were changed according to the Iranian culture, and it was decided to prevent the negative charge for each by assigning two choices: for the original language - Persian and other languages, for ethnicity - Persian and other ethnicities, and for race - Iranian and non-Iranian, respectively. In step 4(back translation), the translation obtained in the previous step was translated into English by an English-speaking translator, living in Iran, who had mastery over the Persian language. The purpose of this step was to see whether the content of the questions in the translated version (back translation) reflected the same questions in the original version (SIS-A). In step 5(experts committee), the translated version along with all the reports, was finally evaluated by individuals with experience in the field of research, at a joint session of the translation. Before proceeding further, the English translation team sent the translated version of the Support Scale to the chief director of AAIDD in order to be consistent with the original version and to examine its semantic and conceptual equivalence. All these steps eventually led to a Persian version of high translation quality. In step 6(field test), the Persian version of the SIS-A was tested on 20 parents of persons with intellectual and developmental disabilities, to identify and resolve potential problems and deficiencies (such as inappropriate phraseology, inappropriateness of some of the terms from the standpoint of culture, vague and unclear understanding of vocabulary, difficulty understanding the content of questions). The results

showed that they did not have any problem in understanding the concepts of the Persian version of SIS-A.

Measurement of Psychometric Properties

Given that the results of K-S test showed that data distribution was not normal, nonparametric tests were used in this study.

Validity

Concurrent validity: Concurrent validity is evaluated in order to determine how much a tool can **correlate** with similar concepts in other tools. In this study, to assess the concurrent validity of the Persian version of SIS-A, Spearman Correlation Coefficient between the Barthel index and SIS-A was used. If the correlation coefficient between the two tools was higher than 0.6, the concurrent validity would be considered as excellent, and if the correlation coefficient was 0.6 - 0.2 and less than 0.2, it would be reported as good and weak, respectively(Roos et al,1998).

Content validity: In this study, the content validity of the Persian version of SIS-A has been evaluated with the "ceiling and floor effects" method of analysis, with a cutting point of 20%. This means that if the value of these effects is less than 20% for the entire tool, the tool has acceptable content validity (Bennett et al, 2002).

Construct validity: Two methods were used to assess the construct validity of the Persian version of SIS-A. It was hypothesised that if a tool could measure a structure or a concept, statistically there should be a correlation between its aspects. In this study, the construct validity was evaluated by calculating the Spearman Correlation Coefficient among the aspects of the Persian version of SIS-A. Confirmatory factor analysis (CFA) is another technique that can be used to analyse the construct of a tool. In this study, the seven-factor model of the Persian version of SIS-A has been used. If the RMSEA value is equal to or less than 0.06 and the SRMR value is less than 0.08 and also the CFI is greater than 0.9, then the given model is well-fitted (Negahban et al, 2013).

Discriminative validity: Discriminative validity is used to show to what extent a Scale can theoretically differentiate between different groups. In this study, it was hypothesised that people with different IQs needed different support; for example, subjects with an IQ lower than 50 would need more support than subjects with an IQ between 50 and 70. To test this hypothesis, Kruskal Wallis H test was used (Garin et al, 2010).

Reliability

Reliability can measure the error rate when evaluating a result and shows how error-free a tool is. In this research, two types of the most common methods of measuring reliability, i.e., internal consistency and test-retest reliability were used.

Internal consistency, one of the important methods to measure relative repeatability, shows to what extent the questions of a Scale or a questionnaire are conceptually consistent with each other. In this study, Cronbach's alpha coefficient was used to calculate the internal consistency. If the Cronbach's alpha value is more than 0.9, the internal consistency is considered to be excellent; between 0.89 and 0.89, 0-7 / 0 are considered good and acceptable, respectively.

Test-retest evaluates the stability of a tool at different times; that is, a researcher first gives a test to a particular group of participants in the study, and then, after a certain period of time, repeats the same test for the same group. If the results of the two tests do not differ, or differ slightly, it indicates the high stability of the tool at the time of the test. In this study, intraclass correlation coefficient (ICC) was used to calculate the repeatability of test-retest with 95% confidence interval. The second interview was carried out 10 days after the first interview (Silveira et al, 2013).

SPSS16 software and LISREL8.8 software were used for the analysis and evaluation of the seven-factor model of the Persian version of SIS-A.

RESULTS

Demographic Characteristics of the Participants

Among the 197 participants, 111 (56.3%) were male and 86 (43.7%) were female. The average age of the participants was 25 years. Approximately 20% had an IQ higher than 70. There were 122 people with intellectual disabilities, and 14 people were high school graduates. More than half of the participants lived in families with around 7 members. About 15.83% of the participants were city-dwellers. Table 1 shows the demographic characteristics of the participants.

Table 1: Demographic Features of Participants

Domains	Condition
GENDER	
Male	111(56.3%)
Female	86(43.7%)
Age	
	(SD=9) 25 Age
LANGUAGE (Please Select One)	
Persian	107(54.3%)
Other	90(45.7%)
CURRENT OCCUPATION (Select any which apply)	
Sustained occupations	3(1.5%)
Supported occupations	93(47.2%)
Voluntary occupations	11(5.6%)
Unemployed	90(45.7%)
IQ	
Above 70	39(19.8%)
Between 51 to 70	101(51.3%)
Less than 50	57(28.9%)
ETHNIC GROUP	
Persian	107(54.3%)
Non- Persian (Please Specify)	90(45.7%)
DISABILITIES	
Intellectual Disability	122(62%)
Autistic Range of disability	15(7.5%)
Physical or sexual dysfunction	28(14.2%)
Blind/vision impaired	11(5.6%)
Deaf/hearing impaired	21(10.7%)
RESIDENCE (Select only one)	
I live in my own house	3(1.5%)
I live with Relatives	9(4.6%)
I have a small family (less than seven household members)	56(28.4%)
I have an average family (between seven to fifteen household members)	129(25.5%)
AREA OF RESIDENCE (Select only one)	
Urban	164(83.2%)
Sub-Urban	19(9.6%)
Country-side	14(7.1%)
LEVEL OF EDUCATION	
High school education	183(92.9%)
High School Graduate (Diploma)	14(7.1%)

Evaluation of the Validity and Reliability of the Persian version of SIS-A

Validity

In this study, the "ceiling and floor effects" method was used to determine the content validity of the Scale. As seen in Table 2, the percentage of participants who scored the minimum and maximum grades in SIS-A was 20% lower than the cutting point."Health and safety activities" had the highest ceiling effect (only 4.5%) among the aspects of the SIS-A. In general, the results of the study showed that the ceiling and floor effects on the whole Persian version of SIS-A was 0.5% and 4.5% of the participants respectively, which was lower than the cutting point of 20%.

Table 2: Mean, Standard Deviation, Content Validity, ICC and Internal Consistency

Domains	Number Questions	Mean	SD	Floor effect	Ceiling effect	ICC N=40	Cronbach's alpha
Section 1	**32**						
Exceptional Medical Support Needs	19	3.6	1.8	3.2	0.5	0.85	0.76
Exceptional Behavioural Support Needed	13	4.8	3.5	2.5	1.7	0.91	0.92
Section 2	**49**						
Life Long Learning Activities	8	51.2	24	1.5	1	0.98	0.91
Community Living Activities	8	69	20.2	1	0.5	0.94	0.87
Life Long Learning Activities	9	75.9	13.7	2.5	0.7	0.92	0.82
Employment Activities	8	68.1	18.7	3.7	0.8	0.95	0.80
Health and Safety Activities	8	59.4	19.1	4.5	1	0.88	0.85
Social Activities	8	69.5	18.8	3	1.5	0.97	0.93
Section 3	**8**						
Advocacy Scale and Supplemental Protection	8	65.8	20.5	3.6	0.7	0.99	0.94
Total Persian SIS-A	**89**	**50.9**	**12.5**	**4.5**	**0.5**	**0.98**	**0.96**

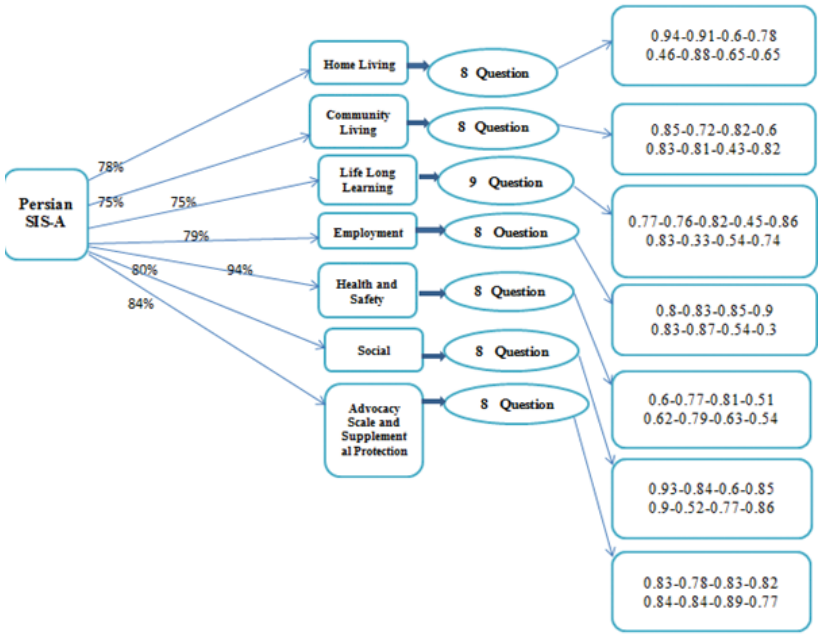
Concerning the concurrent validity, the results of the correlation analysis showed that the SIS-A had a perfect, significant and inverse correlation with the Barthel questionnaire (0.65). Furthermore, all aspects of the SIS-A (with the exception of the need for support and activities related to work and employment) displayed a correlation higher than 0.48 with the total score of the Barthel questionnaire. In the aspects of SIS-A, medical support and social activities had the highest correlation (-0.84 and -0.56 respectively) with the Barthel score of adults with intellectual and developmental disabilities. Table 3 shows the results of concurrent validity.

Table 3: Correlation between SIS-A and Bartel Index

	SIS-A									
Bartel Domains	**Advocacy Scale and Supplemental Protection**	**Social Activities**	**Health and Safety Activities**	**Employment Activities**	**Life Long Learning Activities**	**Community Living Activities**	**Life Long Learning Activities**	**Exceptional Behavioral Support Needed**	**Exceptional Medical Support Needs**	**Total Persian SIS-A**
Spearman's correlation coefficient	-0.51	-0.56	-0.48	-0.039	-0.49	-0.45	-0.523	-0.013	-0.84	-0.65
p-value	**0.004**	**0.001**	**0. 01**	**0.84**	**0.009**	**0.001**	**0.004**	**0.35**	**0.001**	0.001
Age										
Spearman's correlation coefficient	0.07	0.026	0.08	0.06	0.08	0.003	0.017	0.014	0.01	0.09
p-value	**0.35**	**0.717**	**0.25**	**0.73**	**0.18**	**0.97**	**0.81**	**0.06**	**0.80**	0.19

The results of the study showed that SIS-A aspects had a correlation coefficient between 0.3 - 0.86, and the highest correlation was between two aspects of health and safety activities, with a total Scale score of 0.86. Also, CFA was used to evaluate the construct validity of the Scale. The results of the study showed that the seven-factor model was confirmed in the present study; RMSEA indices with a value of 0.66 and CFI with a value of 0.92 showed that this seven-factor model had an acceptable agreement with the original seven-factor model and was fully fitted. Also, all questions in the questionnaire had a factor load higher than 0.4. Figure 1 shows the seven-factor SIS-A model.

Figure 1: CFA for the Seven-factor Model of the SIS-A



In this study, the results of Kruskal-Wallis H test showed that there was statistically a significant difference between the three groups (people with different IQ) in need of support ($p < 0.05$). Table 4 shows that individuals with an IQ lower than 50 need more support than those with an IQ in the range of 51 - 70 and over 70.

Table 4: Discriminative Validity

Domains	70<IQ	IQ=51-70	IQ<50	P-value
Section 1				
Exceptional Medical Support Needs	1.6	1.9	2.1	0.017
Exceptional Behavioural Support Needed	3.1	4	5.4	0.001
Section 2				
Life Long Learning Activities	23.7	37	65	0.001
Community Living Activities	56.2	64.9	80	0.001

Life Long Learning Activities	55.5	64.5	72.2	0.001
Employment Activities	55	64.6	75	0.001
Health and Safety Activities	46.2	54.2	71.2	0.001
Social Activities	56.2	64.8	81.2	0.001
Section 3				
Advocacy Scale and Supplemental Protection	45	63.7	75	0.001
Total Persian SIS-A	41.2	48.4	57.4	0.001

Reliability

According to the results of this study, Cronbach's alpha coefficients showed the highest internal consistency for all aspects of SIS-A in the range of 0.83 to 0.93, as well as the aspects of social activities and in-house activities. Concerning the repeatability of the test-retest, the results of the research showed that in-house activities and social activities, with values of 0.98 and 0.97 respectively, had the highest stability among the aspects of the Scale. The ICC was calculated to be 0.98 for the whole Scale. Table 2 shows the results of internal consistency and reliability.

DISCUSSION

Validity

Concerning the "ceiling and floor effects", the results of the research showed that all aspects of SIS-A had floor effects of lower than 20% cutting points, indicating that this Scale had good content validity. Verdugo et al (2010) used an agreed-upon chart and the analysis of the Cohen and Krippendorff correlation coefficients to examine the content validity of SIS-A. The results of the study indicated that the Spanish version of SIS-A had an acceptable degree of agreement. In another study by Thompson et al 2014, it was shown that the original version of the Scale had excellent content validity, which was consistent with the results of the current study. The results of this study showed that there was significant and moderate correlation coefficient between the aspects of in-house activities, intra-community activities, continuous learning activities, health and safety activities, social activities, and litigation and support activities with the total score of Barthel's questionnaire. There was also a significant, excellent and negative

correlation between the total scores of Barthel and SIS-A. The result of a study by Smit et al (2011) on people with physical disabilities showed that the aspect of in-house activities had the highest correlation coefficient with the total score of the Barthel questionnaire (-0.78), which was consistent with the results of this study. Also, there was no significant relationship between specific support needs (r = -0.03) and Barthel's questionnaire, which is in line with the results of the current research. Another aspect in the study by Smit et al (2011) that had a significant correlation with the Barthel questionnaire though its correlation coefficient was low, was the aspect of social activities (r = -0.2), which in the current study had an excellent and significant correlation with Barthel's questionnaire. The reason for this might be the number of samples. In the study by Smit et al (2011), only 65 subjects were used to measure psychometric properties, accounting for about one-third of this study's sample. Another study by Chou et al (2013) in Taiwan showed that most of the aspects of SIS-A had a significant, strong, and inverse correlation with Barthel's total score, which was consistent with the results of the present study.

In this study, it was demonstrated that the aspects of the SIS-A scale had a correlation coefficient between 0.3 - 0.86 with each other and with the total score. Chou et al (2013), in their study on 139 individuals with intellectual disabilities, concluded that there was a positive and significant correlation between the aspects of SIS-A with 0.93 - 0.99 range. Their research showed that the highest correlation coefficient belonged to the relation between the aspects of health and safety activities with the total score of SIS-A (r = 0.93). These results were consistent with the findings of the present study, in which the highest correlation coefficient belonged to the aspect of health and safety activities with the total score of SIS-A (r = 0.85) (Chou et al, 2013). In another study by Buntinx 2008 to assess the psychometric properties of the Dutch version of SIS-A on 15224 people with intellectual disability, the results showed that the aspects of health and safety activities and continuous learning activities had the highest correlation coefficients. The correlation coefficients between the SIS-A aspects were in the range of 0.71- 0.94. The results of the present study were relatively consistent with the results of this study. Viriyangkura conducted a study (2013) on 1,036 subjects with intellectual disability living in the United States. Viriyangkura's aim was to evaluate the factor structure of SIS-A using a confirmatory factor analysis. The results of his research showed that the seven-factor model was the best model for the SIS-A structure. Both RMSEA and S-RMR indicators ranged between 0.06 and 0.08, indicating the acceptable status of these indicators and also showing that the

model was fitted to an acceptable and satisfactory level. The study found that the CFI was reported as approximately 0.98. This index shows that the hypothesised seven-factor model of this study was in full agreement with the original seven-factor model. The results of the Viriyangkura study (2013) were consistent with the findings of this study.

The results of a study by Verdugo et al (2016) on 814 subjects with intellectual and developmental disabilities in Spain showed that RMSEA indices with a value of 0.9, CFI with a value of approximately 0.99, and S-RMR with a value of 0.33 could support the hypothesis that the seven-factor model was the best and most suitable model for the SIS-A. In this seven-factor model, the factor load between the aspects and the total score of the SIS-A index was between 0.88 - 0.98 which indicates a strong correlation between the aspects and the total score of SIS-A. In the present study, the results showed that the values of RMSEA, CFI and S-RMR indices were largely consistent with the Verdugo study. Also, the factor loads between the aspects and the total score of SIS-A score were reported to be 0.75 - 0.95, which was consistent with the results of the Verdugo study (2016). In general, the results of the study showed that the Persian version of SIS-A had excellent construct validity.

Research by Buntinx et al (2008) showed that people with different levels of intellectual disability (in terms of IQ) had different needs. In Buntinx's study, the result of the analysis of ANOVA test showed that people with slightly lower IQ needed less support while those with IQ lower than 20 needed more support. Buntinx also noted in his research (2008) that there was a significant difference between the overall SIS-A score for people with mild intellectual disabilities and those with severe intellectual disabilities. In the present study, it became clear that the need for support in people with IQ above 70 and between 70 - 50 differed from the people with the IQ below 50, and those with the IQ above 70 had less need for support. In general, the results of the Kruskal-Wallis H test showed that SIS-A has a high differential capability.

Reliability

The results of this study showed that the Persian version of SIS-A has excellent psychometric properties. Cronbach's alpha coefficient was used to assess the internal consistency of the scale. The results indicated that all aspects of SIS-A had a Cronbach alpha coefficient higher than 0.7. In the meantime, social activity showed the highest (0.93) and occupational activity the lowest (0.8) internal

consistency. Also, the calculated Cronbach's alpha coefficient for the whole SIS-A was 0.85, indicating an excellent degree of internal consistency. In their study, Morin et al stated that all aspects of the French version of SIS-A had the Cronbach's alpha coefficient of close to 0.9. In a study by Buntinx et al 2008 on 192 people with mental disorders (major depression, bipolar depression, schizophrenia), the results showed that all aspects of SIS-A had Cronbach's alpha coefficient of higher than 0.8. Also, Cronbach's alpha coefficient for the whole SIS-A was 0.87, which was consistent with the results of this study (Buntinx et al, 2008). In another study by Thompson et al 2014 on 140,000 people with intellectual and developmental disabilities, it was found that all aspects of the SIS-A had an internal consistency coefficient higher than 0.9. This value was calculated to be 0.98 for the whole SIS-A, which, in comparison, has better internal consistency than the results of the present study (Claes et al, 2009).The reason for this might be the high number of samples (140,000) in the Thompson study.

Regarding the reliability of the retest test, which was obtained by calculating the intra-category correlation coefficient, the results of the study showed that the intraclass correlation coefficient of SIS-A was 0.96, indicating high repeatability of this scale in the number of tests. Meanwhile, health and safety activities had the lowest (0.88) and home life activities the highest (0.98) repeatability. A study by Lamoureux-Hébert and Morin (2009) on 245 adults with intellectual and developmental disabilities showed that the French version of the SIS-A had an ICC value of 0.84 and social activity had the highest (0.93) ICC, which was partly consistent with the results of the present study. Morin, in her study of 72 people with developmental disabilities, concluded that the ICC of all aspects of the support scale was between 0/68 and 0.86. The results of the current study were better than the results in the study by Morin and Cobigo (2009). The reason for this might be the duration of the retest; in the study of Morin and Cobigo it was 3 weeks but in the recent study it was 10 days. In another study, conducted by Verdugo 2010 on 885 adult subjects with intellectual and developmental disabilities, the retest was carried out on 143 people three weeks later. In the Spanish version of SIS-A, the lowest repeatability was reported at 0.84 and the highest at 0.93. In this study, it was found that the Spanish version of SIS-A had high repeatability which was consistent with the result of the present study (Verdugo et al, 2010).

CONCLUSION

The authors suggest that the responsiveness of this Scale should be measured in future research. Also, the support level could be reviewed and reported for different groups with intellectual and developmental disabilities. Overall, it is concluded that the Support Level Scale is a valid and reliable tool and is in accordance with Iranian cultures, races, ethnicities, and languages to measure the support level for adults with intellectual and developmental disabilities.

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