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Study on the Psychometric Characteristics of Child Abuse Self Report Scale

Sedigheh Gozal, MSc*

Department of Psychometrics
Islamic Azad University, Tehran
Markaz branch
Sd.Gozal@yahoo.com

Roya Kuchakentezar, PhD

Department of Clinical
Psychology
Islamic Azad University, Tehran
Markaz branch

Shiva Dolatabadi, PhD

Department of Clinical Psychology
Allameh Tabatabai University

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This research aimed to determine the psychometric characteristics (validity and reliability) of the child abuse self-report scale in a sample of 11-16 year-old children in Tehran. This is an applied, descriptive and correlation research, and the statistical population consisted of Iranian abused students who are 11-16 years old, out of which, 400 subjects were selected through convenient sampling as the sample. The data was obtained by Persian translation of the child abuse self-report scale (Kent and Waller, 1998). The collected data were analyzed using the SPSS 24, factor, and lisrel software. The results of exploratory factor analysis by major axes analysis method and promax rotation implied the existence of four significant factors. After removing two inappropriate questions, the fit indices of the confirmatory factor analysis model suggested good fitting of the model and construct validity of the instrument. The value of Cronbach alpha and Guttman's lambda-2 obtained were higher than .76, for all the subscales and the entire test. The results indicated that the 36-question version of this instrument has a good validity and reliability and can be used for Iranian children.

Keywords: psychometric characteristics, child abuse, validity, reliability

Child abuse is defined as physical, sexual or mental harm, and even psychological misbehavior whether in a tangible form or as negligence (Kleinman, 2015). Children are maltreated in various forms such as physical abuse, emotional abuse, sexual abuse and negligence. The latter has been reported as the most common type with 794000 cases in 2007 in the United States (Mennen, Kim, Sang, Trickett, 2010). The second type of child abuse which has a high prevalence is physical abuse. It is more common than the sexual type, and unlike sexual abuse which is more common in girls than boys, this type of abuse is prevalent among both genders (Springer, Sheridan & Carnes, 2007). Research on recognizing the multiple dimensions as well as the nature of violence and abuse in children is increasing (DVA; Centers for Disease Control and Prevention, 2014; World Health Organization, 2014). Child abuse is a very serious social problem, which threatens the life and well-being of children and adolescents (Begle, Dumas & Hanson, 2010; Crawford, 2010; Shefe, 2007). On the other hand, it imposes staggering costs on the health care system (Fang, Brown, Florence & Mercy, 2012).

Today, child abuse is a well-defined concept. The general concept of the child abuse can be understood without needing a detailed explanation, applied examples or special situations. People may have a strong view on improper behaviors with children. Nevertheless, the important point is that beliefs about care, rights and children's need are widely different among people of different cultures (Kleinman, 2015). In different countries, child harassment and misbehavior is defined based on various legal, medical and social viewpoints and include any type of physical, sexual, psychological harassment or neglecting of children below 18 years old by an adult (over 18 years old). Typically, social factors determine criteria for judging child

abuse. This means that different societies consider different types of behavior as child abuse. According to [Alexander, Teti & Anderson \(2000\)](#), child abuse is any type of physical or psychological harm, sexual abuse and negligent or violent behaviors on a child, committed by someone who is responsible for the well-being and peace of the abused child. [Wolf and Pierre \(1989\)](#) defined child abuse in general as follows: an abused child is a person who is below 16 years old and his/her parents or legal caretaker a) seriously hurt him/her or allow hurt to occur, and b) commit an action of sexual harassment according to criminal law against the child or even allow someone else to perform these acts ([Thenaguy Moharrar, 2000](#)). There are various factors involved in the occurrence of child abuse. Some of them are environmental and family factors (e.g. the level of education of the parents, the number of family members, the psychological status of the parents, economic problems, family disputes, and laws associated with children's rights in the society and attitude to training and education). However, some of these factors are associated with the child himself (his physical and psychological problems) ([Christian & Schwarz, 2011](#)).

Review of the literature in this field indicates that sexual abuse during childhood can lead to a wide range of sexual complications in the long run ([Rellini, 2014](#)). These consequences have been reported with valid documents and evidence over longitudinal studies in a wide range of populations, including child abuse victims ([Wilson & Widom, 2009](#)), samples from adolescents ([Jones et al., 2013](#)), homosexuals, bisexuals and adult heterosexuals ([Icard, Jemmott, Teitelman, O'Leary & Heeren, 2014](#)). In many countries like the US ([Dubowitz, 2004](#)), England and Israel ([Ben Yehuda, Attar-Schwartz, Ziv, Jedwab &](#)

[Benbenishty, 2010](#)), child abuse is the main reason why children go to social service centers.

In Iran, through a descriptive survey plan, [Norouzi \(1993\)](#) investigated the rate of incidence of child abuse and negligence among 2240 high school students of five geographical regions in Tehran. The results indicated that reports of 600 students suggested a history of abuse and about 71% of the reports showed combination of a wide range of abuses. Based on the report by these students, physical abuse was identified as the most common type of abuse. In addition, the report on the physical abuse had a relationship with the economic status of students. Also, the highest rate of abuse was observed among the students of 11-15 year olds, which was different among girls and boys. Eventually, the results of [Norouzi \(1993\)](#) indicated that the report on abuse and ignorance had a positive significant correlation with the intensity of depression and aggression. Limited studies have been conducted to obtain the pattern of prevalence of abuse and the incidence rate of child abuse and ignorance in Iran. Such studies have mainly included the reports of media or referred to the information collected by employees of institutions dealing with crimes resulting from family violence (e.g. forensics). They have addressed the issue across criminal dimensions and severe forms of family violence (especially sexual abuse). It can be stated that one of the reasons for the lack of a sound research with strong background on this issue in Iran, in addition to political-cultural problems and limitations, is the lack of suitable measurement instruments in this field.

Important instruments have been designed regarding child abuse measurement. One of these instruments is ISPCAN Child Abuse Screening Tool Children's Version (ICAST-C) questionnaire, which has been prepared based on international

studies by 40 representatives of different countries in the US, translated into six languages, and run in four countries on 571 children of 12-17 year olds. The Cronbach Alpha of this instrument has been calculated as .68-.85 ([Zolotor et al., 2009](#)). The Juvenile Victimization Questionnaire (JVQ) was also developed in the US and run for 2030 children of 12-17 year olds to investigate different aspects of child abuse with 34 questions ([Finkelhor, Hamby, Ormrod & Turner, 2005](#)).

Another pioneering instrument in this field is Child Abuse Self Report Scale (CASRS), developed by [Kent & Waller \(1998\)](#). They included the main problem of previous instruments, that is, neglecting the role of emotional abuse of child in the content of other types of abuse. As they argue emotional abuse as the fundamental issue of harms during childhood, they mentioned some studies indicating that emotional abuse during childhood is followed by psychological disturbances in adulthood. In this regard, [Kent and Waller \(1998\)](#) evaluated Child Abuse and Trauma Scale (CATS) and based on the separable classes introduced by [Hart and Brazard \(1987\)](#) for psychological misbehavior together with the definitions of concepts obtained from types of abuse, they reported its efficiency in abuse measurement. These classes include behaviors such as exclusion of the child, development of fear, forced labor and exploitation of the child which disallow emotional responsibility for the child. They prepared a scale of child abuse and trauma in order to measure a wide variety of childhood traumas. As this scale is one of the instruments that has attracted a great deal of attention and considering the lack of a suitable instrument in Iran, this research was conducted with the aim of investigating the psychometric characteristics of the child abuse self-report scale.

Method

This is a descriptive and correlative study with a practical nature. Field and library methods were used to collect data and complete the questionnaire. The library method was also used to collect and complete theoretical bases of the research. The hypotheses and statistical data were analyzed through the field method and completion of the questionnaire.

The Population, Sample and Sampling Method

The statistical population of this research consisted of abused teenagers, 11-16 year olds in the centers for "the Social Emergency of Welfare Organization", "the social section of NAJA¹", and "the Association of Children Rights Support²" in Tehran. Accordingly, 300 subjects (150 girls and 150 boys) were selected through convenient sampling out of 11-16 year-old teenagers of these centers together with 100 students (50 girls and 50 boys) from not-abused teenagers of Tehran schools.

Instrument

Child abuse self-report scale (CASRS): neglecting the role of child emotional abuse in the content of other types of abuse was recognized by [Kent and Waller \(1998\)](#) as the main problem of the previous measurement instruments. In this regard, [Kent and Waller \(1998\)](#) developed CATS and prepared a 38-item questionnaire using Likert scale. This instrument measures a range of special experiences and includes 4 factors.

Emotional abuse subscale: this subscale with 14 items (1-3-7-9-12-13-16-17-18-19-22-24-25-31) is designed for measuring

¹. Persian abbreviation for Police Government of Islamic Republic of Iran

². Society For Protecting The Rights Of The Child

actions that cause fear or psychological distress in a child and includes.

Physical abuse subscale: this subscale with 8 items (26-27-28-29-30-31-32-33) covers a wide range of corporal punishment and abuse with or without harm. In this scale, the items are designed in such a way that it can be used to evaluate both physical abuse with harm and misbehavior without harm.

Sexual abuse subscale: the items of this section are related to sexual behaviors that occurred in the past or present to the child. Here, attempts are made to ask about unwanted sexual touch and compulsory sexual touch, as it seems that in this way, there is a greater chance to receive response from the subjects. This subscale includes 5 items (34-35-36-37-38).

Neglect subscale of abuse: This subscale is used to measure frustration in portraying behaviors that are required for meeting the developmental needs of children (e.g. lack of care or sufficient food). This subscale includes 11 items (2-4-5-6-8-10-11-14-15-20-23) which are scored in a reversed way ([Kent & Waller, 1998](#)). The reliability and validity of this instrument has been confirmed in some studies ([Kent & Waller, 1998](#); [Mohamad Khani, 2002](#)).

In this research, the mentioned questionnaire was prepared following accurate translation by a psychometrics specialist and an associate professor of English after the necessary revisions. Its content and face validity was confirmed with the help of 5 professors of Islamic Azad University, Tehran Markaz Branch. Following completion of the questionnaire by the respondents, the obtained data was analyzed using relevant software. Internal consistency methods (Cronbach alpha and ordinal theta), splitting method and test-retest were used to examine the reliability of the instrument. Further, confirmatory and exploratory factor analyses were employed to measure construct validity.

Results

The mean age of the sample group was 13.38, and SD was equal to 1.68.

Examination of the Instrument Validity

As mentioned earlier, following the translation of the instrument, its content validity was confirmed by relevant professors. To examine the construct validity, confirmatory factor analysis was conducted in order to achieve the factor structure of the instrument. For this purpose, the principal hypotheses of exploratory factor analysis were studied. The value of KMO index was obtained as .836 for the data, suggesting the adequacy of the sampling. Further, the value of Bartlett statistic was significant for 703 degrees of freedom ($p \leq .001$). Parallel analysis method, which is one of the most accurate methods available (O'connor, 2000) was utilized to specify the number of extracted factors. The results of parallel analysis implied existence of four significant factors. To extract the four factors, the method of analysis of major axes and 50 times of Promax rotation were used in SPSS 24. These four factors together explained 42.67% of the common variance; 25.68% by the first factor, 9.63% by the second factor, 7.40% by the third factor, and 5.40% by the fourth factor.

Table 1
The Factorial Pattern Matrix (Rotated Factorial Loads)

items	F1	F2	F3	F4
30	.961			
33	.928			
28	.874			
29	.768			
32	.616			

23	.540
22	.438
27	.372
26	.322
6	.731
11	.686
21	.682
5	.680
2	.604
8	.596
4	.584
20	.552
10	.549
14	
3	.777
7	.745
9	.617
12	.598
13	.561
1	.527
16	.514
17	.489
19	.460
18	.423
24	.408
25	.390
31	.328
34	.714
35	.710
37	.694
38	.433
36	.370
15	

Table 2 indicates the items related to each factor and the relevant factorial loads. Considering the table, items 2 and 4 were removed

from the final form as they had none of the four factors of the factorial load. Except these two items, the rest items had an acceptable factorial load. Further, the position of the items on each factor had great correspondence with the original version. Next, confirmatory factor analysis was conducted using Lisrel software and fit indices of the model were examined.

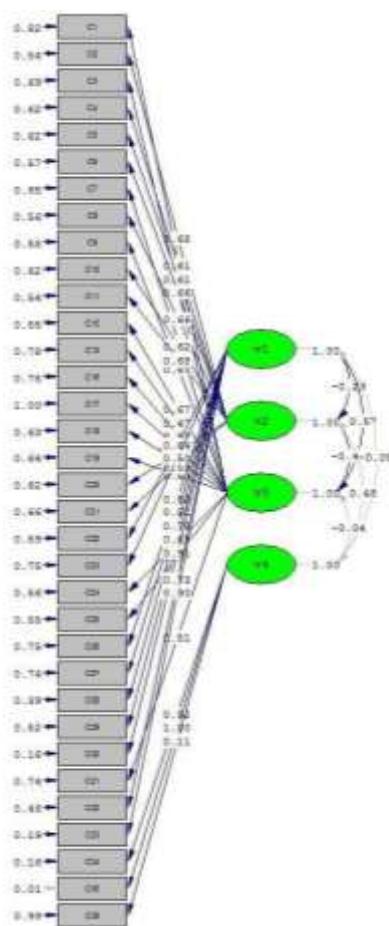


Fig. 1. Confirmatory factor analysis model

Table 2
Fit Indices of the Confirmatory Factorial Analysis Model

Model	Index				
	χ^2	GFI	AGFI	CFI	RMES
The four-factor model resulting from EFA	559.95	.120	.9	.120	.559

Based on Table 2, the confirmatory factor analysis model showed a good fitness.

Table 2 presents fitness of the model. Structural equations modeling contain fitness indicators and structural model. The most commonly used method for estimating the best fitness in SEM is called maximal probability. Five fit statistics of χ^2 , AGFI³, GFI⁴, CFI⁵ and RMSEA⁶ were measured in this model. As AGFI and GFI indicators are close to 1, the full fit of the model was indicated, and the low RMSEA suggests goodness of the fit model. As the CFI is closer to 1, more fitness of the model is indicated (Allen Yen, 2008 quoted by Nadi and Akbari, 2013). Given that AGFI = .9, GFI = .88, CFI = .87, and as they are close to 1, the model has a good fitness. Moreover, since RMSEA is .09, the model has a good fit and all the structures are meaningful and consistent with the model.

Investigation of the Instrument's Reliability

³Adjusted Goodness of Fit Index

⁴Adjusted Goodness of Fit Index

⁵Comparative Fit Index

⁶Root Mean Square Error of Approximation

Internal consistency (Cronbach alpha and Guttman's lambda-2), splitting and test-retest methods were used to study the reliability of the questionnaire.

After eliminating two inappropriate items, the 36-item form was divided into two 18-item test halves using bi-section method. The correlation coefficient between these two sub-tests was .63 which is significant at $p \leq .001$. Further, 30 members of the sample who had a greater willingness to cooperate responded to the questionnaire twice with 3 week intervals. The correlation between the two times of test administration was obtained as .77 which is statistically significant at $p \leq .001$. Cronbach alpha and Guttman's lambda-2 were also used to examine the internal consistency. The following table indicates the indices of the instrument reliability.

Table 3
Reliability Indices of Internal Consistency of CASRS

Factor	Number of items	Cronbach alpha	Guttman's lambda-2
Physical abuse	9	.88	.88
Neglect	9	.86	.86
Emotional abuse	13	.83	.84
Sexual abuse	5	.76	.83
Total	36	.81	.84

As shown in Table 3, the alpha and Guttman's indices indicate favorable levels for all the components and the total score. Therefore, in this sample, the instrument has a high internal consistency and a suitable reliability.

Discussion

The aim of this research was to investigate the psychometric properties of child abuse self-report scale in a sample of abused teenagers. Following data collection and screening, the research questions were answered using the necessary methods and software.

Question 1: Does CASRS have a good validity?

The main form of CASRS was translated by relevant specialists. Correspondence between the Persian translation and the original version of the instrument and its content validity were confirmed by psychometrics specialists. To examine the construct validity, exploratory factor analysis using principal components analysis and Promax rotation technique was employed to obtain the simplest factorial structure. Further, parallel analysis method, which is one of the most accurate methods ([O'connor and Brian, 2000](#)) was used to determine the number of extracted factors. Accordingly, decision was made to extract four factors, which were in line with the original version ([Kent and Waller, 1998](#)). Moreover, based on the results of exploratory factor analysis, two items, 14 and 15, were removed from the final form as none of them had suitable load on any of the factors.

The first factor with nine items had a great correspondence with the second factor of the original scale ([Kent and Waller, 1998](#)). Hence, it was considered a physical abuse. Furthermore, item 24 had a factorial load on the emotional abuse factor, which lied in the physical abuse factor in the original version. The second factor with 9 items is in line with the fourth factor of the original form. Therefore, it was called the abuse and neglect type. The third factor with 13 items had correspondence with the first factor in the original form, and thus it was called emotional abuse.

Eventually, the fourth factor with five items and correspondence with the third factor in the original form was considered as sexual abuse. Accordingly, it can be stated that the final 36-item form has a great correspondence with the original form ([Kent and Waller, 1998](#)). The fit indices of the confirmatory factorial analysis implied good fitness of the data with the four-factor model. Thus, it can be stated that this instrument has construct validity in the sample of this research.

Question 2: Does CASRS have a Good Reliability?

Cronbach alpha coefficient for the subscales of physical abuse, neglect, emotional abuse and sexual abuse was .88, .86, .76 and .83, respectively. It was equal to .81 for the entire test, suggesting a high internal consistency between the questions of this instrument. Alpha index is widely used to measure reliability. However, recent theoretical research has argued that Cronbach alpha always underestimate the value of liability and for distance data, it is better to use other methods ([Zumbo et al., 2007](#)). For this, Guttman's lambda-2, which is a more suitable index (especially when the number of items of subtests is low) was used ([Benton, 2015](#)). The value of this index for the subscales of physical abuse, neglect, emotional abuse and sexual abuse was .88, .84, .86, and .83, respectively, and .84 for the entire test. Moreover, Pearson correlation coefficient between the two halves of 18-item test was .63, while it was .77 between the two administrations of the test on 30 subjects. The results of the test reliability were also in line with the results obtained by [Kent and Waller \(1998\)](#).

Finally, by considering the findings of this research, it can be maintained that the child abuse self-report scale has a desirable

reliability and validity in an Iranian sample. Therefore, it can be used in similar samples.

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