

Development and Validation of the Self Report Physical Abuse Scale (PAS) for Adolescents

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Abstract

One of the global health concerns about children is child abuse which has wide range negative consequences. Recognition and assessment of abuse is not only difficult but challenging issue across the globe. The study was aimed to develop an indigenous scale in Urdu language for adolescents to measure their experience of parental physical abuse with reference to Pakistani culture. Literature on child physical abuse and existing scales were reviewed to generate items for the scale. Eighteen items were generated. After experts review and adolescents opinion three items were removed and 15 items scale was given to the school going adolescents (N=494), consisted of 45% girls and 55% boys in the required age group 13-17 years (M=14.7). Factor analysis was run on the data and one factor was emerged as items were developed under one factor i.e. physical ill-treatment. Reliability analysis was computed, every item was significantly related to total score of scale and Cronbach alpha for total score was 93 Percentile scores were computed and cut of score was decided on the basis of percentiles. 15 items scale with two versions, Father Form and Mother Form was used to measure the Discriminant validity. Relationship between parental physical abuse and self-esteem of adolescents was measured on a different sample of adolescents with same inclusion criteria (N=130). Rosenberg Self-Esteem Scale (RSES, Rosenberg) was used to measure the alpha and self-esteem. Physical Abuse Scale (PAS) has good discriminant validity as perception of both mother and father physical abuse has significant negative relation with self-esteem. Study findings supported the questionnaire as reliable and valid measurement tool in Urdu language.

Keywords: Physical abuse questionnaire; Adolescents; Reliability; Validity

Introduction

Child abuse occurs all over the world across all socioeconomic level, religion, cultures and every level of education across the world. Entire documented history mentioned the acts that can be termed as child abuse but expert review of the area begun in 1960. In the early 1970, Child abuse and neglect emerged as

academic discipline. Recognizing and assessing child abuse is serious and problematic subject and it became more difficult when abuse happens behind closed doors [1]. A lot of research documented severe negative emotional, behavioural and psychological consequences of abuse on victims. Numerous scales are used to assess current or retrospective reports of child abuse but most of these scales are validated in developed countries. Existing research indicated that construct of abuse vary across different cultures and societies of due to these variances in social and cultural experiences these measures may not represent the concept of physical abuse in developing countries like Pakistan [2]. Standardized and easily administered indigenous measures are needed to facilitate research on child abuse. Moreover, Perception of victim is specifically important to understand abuse due to its relevance to perpetration or susceptibility to commit. Therefore, the purpose of this study was to develop and validate an instrument that measures perception of child about this or her experience of abusive acts by parents in a developing country, Pakistan, where empirical knowledge about perception of abusive behaviors is still lacking.

Conceptualization of physical abuse in Pakistan

In Pakistani society, physical penalty is most commonly used strategy to discipline a child. Efforts to discipline and control a child usually comprise of verbal aggression along with physical maltreatment like slapping, spanks, pushing or use of any object to beat a child. From last few decades authorities in Pakistan took notice of child abuse but still physical abuse is commonly used practice for child rearing in home as well as in school. Following definitions of violence against children are mostly used in Pakistani literature [3].

According to World Report on Violence and Health (WHO, 2002) child abuse consisted all actions of physical and emotional maltreatment, sexual abuse, neglect or exploitations which has significant real or possible danger or harm to child's health, safety, development as well as psychological well-being. Society for the protection of the rights of child, Pakistan (2000) described child abuse as fierceness and harassment toward child consisted on every form of physical and mental abuse, negligence, damaging practices, bullying, physical punishment and sexual maltreatment [4]. According to Pakistan Pediatric Association Child Right's Group, (1994) concept of child abuse

vary from culture to culture. Generally child abuse is described as any action omission or commissions that harm or risk of harm for child's physical, emotional/psychological development. It may be committed by a single individual or collectively by person who are in position of authority on children.

Research has suggested that abuse of all types is existing in multiple settings, including homes, institutions, streets or places of worships in developing countries [5]. It is quite depressing that child is abused exactly at the place where it supposed to be most safe and secure. Convention of Rights for Children (2006) considers family as most safe environment for child development, but it may be dangerous for child. It is very difficult to detect violence behind closed doors because in this violence parents are involved who are expected to protect children [6]. Asian society has very rich structure of family. As a basic unit of society, people acquire the basic components, values, and sociocultural norm from family. Parental authority on children is very much acceptable and appreciated as well in Pakistani society. Research has established traditional obedience development in family as well as in culture. Review of existing literature has also considerable evidence that awareness about the rights of basic needs of children (food, safety, security and education), new polices are made, implemented and monitored by United Nations Organization has much increased but situation is not still very satisfactory in developing countries like Pakistan, where children are continuously facing abuse and violation of their rights. Abuse of children even is not controlled in the family and home setting [7]. Compliance and approval of power and right of elders is anticipated from children. Even parents belong to modern elite class demand obedience without question, failing which they has to face abusive behavior in the name of disciplinary techniques.

Perception of abusive behaviors taken for current scale is based on theoretical rational, harm/evidence model. According to this model physical abuse may be taken as abusive when this behavior is harmful in light of existing laws, norms, and social and legal considerations. This model has empirical value in describing all types of abuse, i.e. physical, psychological and emotional. Harm/evidence model also assumes that every type of abuse has different conditions to be perceived as abusive and harmful and real cases significantly involved harm or possibility of harm but unverified cases may be involved less harm to classify as abusive [8]. To develop the instrument for the perception of abuse, existing measures, empirical knowledge of abusive behaviors and existing literature were carefully examined. Research has clearly established the link between abusive behaviors and long-term negative consequences, although indicators of abusive behaviors may differ in different social cultures and regions [9]. Perception of abuse is best described and operationalized through abusive acts demonstrated to child or adolescents. Moreover sociocultural views and beliefs about abuse and existing rules regarding abuse are important to determine the act as abusive.

In Pakistani culture physical abuse of children by parents always remains acceptable method to control them, may be due to this it is always a social taboo to measure or report parental physical abuse. Parents never admit that they are abusing

children physically in the name of punishment or disciplinary act in Pakistan. Keeping in view all this it was important to know how children/adolescents notice the punishment, or physical abuse they receive from their parents. For this reason a self-report questionnaire regarding the frequency with which adolescents receive physical punishments was required [10]. Diagnosing and assessing child abuse is a critical and difficult process, because this phenomenon has several negative behavioral and psychological consequences on victims. Although many efforts have been made, but still developing countries, like Pakistan have not developed any effective ways to report and control child abuse. Moreover, development of measuring tool for perception of abuse in developing countries may lead many benefits including possibility of understanding, explaining and prevention of abuse. Integrating all these factors leads toward the development of the self-report measure of abuse [11].

Objectives of the study

The present study was designed to achieve the following objectives

- To identify the child rearing physical practices at homes by parents perceived by adolescents (13 to 17 years) as abusive.
- To develop an indigenous self-report parental physical abuse scale for adolescents.
- To establish the psychometric properties of the physical abuse scale.

Materials and Methods

Questionnaire development and item evaluation

Questionnaire was developed on the basis of the comprehensive review of existing empirical literature, scales to measure abuse, theoretical background of abuse at local as well as international level with the qualitative exploration of the phenomena in local culture and most important perception of adolescents experience such acts [17]. List of abusive behaviors experienced by adolescents frequently used in local culture were already listed. Keeping in view all the knowledge regarding parental physical abuse, items of questionnaire of self-report physical abuse were generated. Eighteen items were generated and given to 4 experts for evaluation. Two experts were clinical psychologists practicing with children and adolescents' problems and two were PhD in psychology working in universities [18]. Some abusive behaviors were criticized due to rare in occurrence, controversial, religiously/culturally sanctioned, in the view of experts as well as adolescents but these were retained for try-out study. Some items were rephrased according to expert opinion. A questionnaire with 18 items was finalized in very simple Urdu language for common population of Pakistan so that it can be used for even less educated population.

Selection of scale type: Response format for scale was Likert type (1=Never, 2=Occasionally, 3=Often, 4=Very Often). These selected items about how often they experience certain type of harsh physical parenting like slapping, beating with certain objects on particular body parts or excessive physical work etc. were included in the questionnaire.

Try-out study: A try-out study was carried out on 40 adolescents. These adolescents were selected from public and private sectors. They gave very good response on 14 items. One item has very low frequency while on three item every participant respond never which were already criticised by experts and parents. These three items were removed from final version and 15 item scale was finalized [19].

Research design and sampling: Present study utilized self-report methodology to collect data from respondents about their perception of how frequently they experience parental physical abuse.

Sampling

A multi stage sampling technique was used to select the sample. In the first stage of sampling both public and private schools were selected from different towns of Lahore. Further it was divided into boys and girls high school of city Lahore. Further division was made on the age range i.e. 13-17 year adolescents from the grade 7th, 8th, 9th, and 10th. Total 550 adolescents were selected to participate in this study. Thirty adolescents withdraw while answering the questions and twenty six forms were rejected due to incomplete information. Remaining 494 adolescents completed the scale [20]. Among them 274 (55%) were boys and 220 (45%) were girls. Their age range was between 13 to 17 years with (M=14.7, SD=1.17). All the participants were referred by the class teacher to researcher. Eight percent students from class 7th, 20% from class 8th, 42% from class 9th, and 30 % from class 10th were selected. Sixty four percent students were living in joint family system while 36% were in nuclear family system.

Procedure

Permission was taken by education department as well as school authorities. Participants were selected with the help of class teachers from the required age group from both public and private schools. Parents' permission was also taken and only those adolescents were selected who were allowed by parents as well as gave their own consent to participate. Scale was given in classroom setting. Participants were allowed if they want to leave. It was taken 5 mints to complete the scale. Researcher was present there all the time to clarify any type of ambiguity or answer any quarry regarding the items [21].

Results

This section describes the findings of statistical analysis of the newly developed indigenous scale, Physical Abuse Scale (PAS). To measure the psychometric properties of the scale factor analysis, validity and reliability were computed. Principle Component Factor Analysis with Varimax Rotation was performed on 15 items. The factor was obtained through Varimax rotation. Criteria to compute factor analysis was Eigen value >1, based on the assumption to retain factors with the Eigen value greater than 1. The Scree Plot Cattell was used to identify the factor structure of the scale. The Scree Test is the graphical representation of eigenvalues. High loading of items on one factor were retained as one factor [22].

Basic assumptions for factor analysis were empirically tested. The sample was selected on the basic criteria of factor analysis. Sample size was empirically tested by KMO and Bartlett tests. Measures of sampling adequacy, Kaiser-Meyer-Olkin (KMO) =0.90 was well above the recommended value of 6, confirming the adequacy of sample size for the analysis. Bartlett's Test of Sphericity is significant, which shows that data is suitable for further analysis. Gorsuch has also proposed guidelines for minimum ratios of participants to items (5:1). Rule of 10 is also adequate to determine sample size, which postulates that 10 respondents for each item should be used, therefore sample of 494 quite good for analysis (Garson). Presentations of findings follow recommendations (Figure 1) [23].

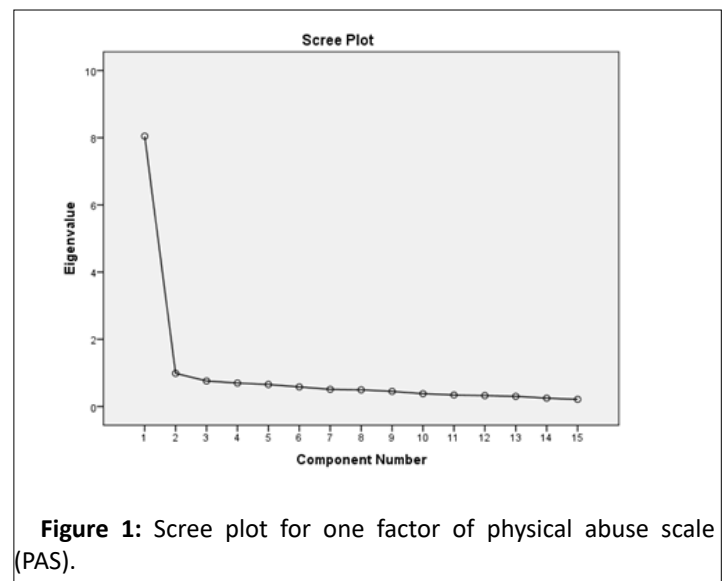


Figure 1: Scree plot for one factor of physical abuse scale (PAS).

Factor structure of 15 items

Factor loading of physical abuse items explain that there is one factor extracted after rotation. All the items were generated based on only one construct i.e. physical abuse that was adolescents' perception of parental physical abuse. The criteria for selecting an item were that the item must load on the primary factor 40 or greater and that the loading on a secondary factor, if any, must be reasonably less than the loading on a primary factor. After factor analysis it can be concluded that only one factor was extracted and final scale was emerged with 15 items based on a single factor.

Item No	M	SD	Skewness	Kurtosis
1	2.78	1.39	-0.79	-0.74
2	1.16	0.47	1.61	1.51
3	1.6	0.88	1.03	-0.41
4	1.83	0.88	0.75	-0.25
5	1.57	1.53	1.37	0.73
6	1.67	0.78	0.8	-0.4
7	2.04	1.46	1.61	1.54
8	1.06	0.35	2.02	2.65
9	1.49	0.87	1.28	0.5

10	1.67	0.83	0.77	-0.6
11	2.37	1.38	0.87	-0.62
12	1.57	0.88	1.05	-0.26
13	1.64	0.87	0.55	-1.3
14	1.51	0.88	1.16	0.1
15	1.76	1.12	1.09	-0.1

Table 1: Descriptive analysis of items of final version of PAS (N=494).

	M	SD	α
physical abuse	23.42	8.63	0.93

Table 2: Mean, SD and reliability coefficients of physical abuse scale (N=494).

To find the internal consistency of total scale reliability analysis was run. The scale reliability is estimated through the reliability of the items. Reliability can be estimated both for persons and for items. All the items have correlation with total score (Tables 1 and 2). So this can be over interpreting keeping in the view that all items of scale related to physical abuse that's why they have relevance to respective factor [24]. The traditional scale reliability is an estimate of true persons variance divided by observed persons variance for a sample on the test items. So it is really the person sample reliability rather than the scale reliability, where reliability equals the reproducibility of person ordering.

Validity of scale

Internal validity of Physical abuse scale was measured through Test-retest reliability. A sample of 40 adolescents was selected with same inclusion criteria. Scale was given twice to same sample with gap of one month. Scale had very good test-retest reliability as there was significant positive correlation $r=0.83$, $p<0.001$ between test and retest of scale. This test-retest reliability signifies the internal validity of PAS as representative and stable scale over time (Table 3).

	PAS T1	PAS T2
PAS T1	-	-
PAS T2	0.83	-

Table 3: Test-retest reliability (N=40).

Discriminant validity of Physical Abuse Scale (PAS)

In the present study discriminant validity of physical abuse scale was analysed by observing the relationship between physical abuse and self-esteem in adolescents. Classic definition of self-esteem by Coopersmith's, the physical evaluations which the individual makes and customarily maintains with regard to himself: It expresses an attitude of approval and indicates the extent to which an individual believes himself to be capable, significant, successful and worthy. Research has linked the physical abuse with low self-esteem. Allen and Tarnowsky

compared physically abused and non-abused children. They found that the former evidenced lower self-esteem, and greater hopelessness concerning the future [25]. Oates, Forrest, and Peacock studied the self-esteem of children at the ages 4-14 years who were admitted to hospital emergency rooms because of physical abuse and found low level, of self-esteem in abused children. Rosenberg Self-Esteem Scale (RSES) traditional path of a ten item globally evidence used scale, translated in Urdu (Sardar) was used to measure self-esteem with indigenous developed Physical abuse scale PAS. Evidences support the construct validity of PAS. Findings regarding discriminant validity indicated that self-esteem of adolescents is significantly related with their perception physical abuse in negative direction. Findings indicated that PAS has good discriminant validity (Table 4).

	Self esteem
Mother physical abuse	-0.70
Father physical abuse	-0.67

Table 4: Correlation between physical abuse (both mother and father) and self-esteem among adolescents (N=30).

Cut-off scores

The cut off point for the scale can be determined through the percentiles analysis and frequency distribution of scores corresponding to the respective percentiles. Score range in sample was 16-49. It show that on 25th percentile scores on the physical abuse scale is 17, while 21 score is on 50th percentiles and score of 28 lies on 75th percentiles. Sample was divided into three categories according to the severity of physical abuse experiences based on the frequency with which adolescents suffer it [26]. These categories are Mild Physical Abuse 1 SD below the mean, Moderate Physical Abuse, 1 SD above the mean, Severe Physical Abuse, 2 SD above the mean. Score range 15-24 was taken as Mild, 25-33 was taken as Moderate, above 33 score was taken as Severe. These categories related with percentile scores, 60th percentile is Mild Physical Abuse, 60th to 75th percentile is Moderate Physical Abuse, and 75th to 95th is Severe Physical Abuse and above 95th percentile was taken as Very Severe Physical Abuse. These classifications are primarily relative and should not be taken as absolute as this is not rigid classification but based on Percentiles and M and SD of the sample (Tables 5 and 6).

Percentiles	Score on physical abuse scale
10	16
20	17
25 th	17
30	18
40	19
50 th	20
60	22
70	25
75 th	28

80	30
90	38
99	49

Table 5: Percentile rank and physical abuse score (N=494).

Level of physical abuse	N	%
Mild physical abuse	301	0.61
Moderate physical abuse	124	25
Severe physical abuse	69	14

Table 6: No of adolescents fall in three categories of physical abuse based on percentiles cut off point (N=494).

After deciding the cut-off point for physical abuse scale it was divided into two versions, Father Form and Mother Form to use in the main study because main study was focused on both mother and father abuse separately.

Discussion

Purpose of this research was to develop an indigenous, valid and internally consistent scale to measure the parental physical abuse experienced by adolescents. Understanding perception of victims' abuse is vital in many respects, because perception has implications for reporting abuse as well as the effects of perception on behaviour. Although there are variety of self-report scales to measure parental physical abuse of children and adolescents. There was an indigenous scale, Child Abuse Scale comprised of 34 was used to identify children with different levels of abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect. Present scale was developed to measure the frequency of physical ill-treatment used by parents against children in different ways in local culture of Lahore (Pakistan) [27]. Main objective was to develop a scale that identify and emphasize those physical malpractices or physical punishments which are used by parents in the local culture like hitting, slapping, beating with objects, kicking etc. Existing scales were reviewed as well as adolescents in schools, teachers and parents were interviewed to know about the ways of physical punishments usually used at homes. Keeping in view all the literature 18 item were generated with four response options.

This scale was given to selected sample of school going adolescents from both public and private sector. Three items were removed due to some cultural and moral objections for adolescents as well as for experts. A 15 items Likert type scale with four response options was given to selected sample. The scale was administered on the target population for statistical analysis to determine the validity and internal consistency of the scale. A principal component analysis was run on 15 items [28]. As all the items were generated under only one factor that was physical ill-treatment, factor analysis put all the items in one factor. Items reflecting theoretical relevance with each other in a factor with eigenvalue-1 were retained. All the items had high factor loading under 1 factor ranging from 52 to 85 with total

variance explained 53.63. Item no 8 has lowest factor loading that was 52 but it was retained as criteria of 40 was decided. Moreover there was low response on this item. Frequency of response was analysed and 1.5% adolescents respond very often, 2 percent often and 3 percent adolescents respond sometimes they experience this act. After its analysis this item was retained in final version.

Findings further revealed that Physical Abuse Scale (PAS) is highly reliable scale to measure the adolescent perception of parental physical abuse. The coefficient of reliability, Cronbach's alpha, suggests that both the overall scale and all items with total score of scale are internally consistent with Chronbach alpha 93. Every item has positive and significant correlation with total score of the physical abuse scale ranging from 56 to 83.

As far as validity of PAS was concerned, all the items were empirically generated and judged by experts. All items has good correlation with total score as well as Cronbach alpha was 93 can be taken as good construct validity as some researchers suggested that internal consistency measures may be taken as construct validity. Discriminant validity was also measured through the relationship between perception of physical abuse and self-esteem in adolescents. Findings revealed that scale has good discriminant validity as mother physical abuse was related to self-esteem significantly in negative direction ($r=0.70$, $p<0.01$) and father physical abuse was also significantly related with self-esteem in negative direction ($r=0.67$, $p<0.01$).

Conclusion

Through analysis of percentile scores and the "criterion of one standard deviation above and below the mean of the distribution", scores on the PAS were categorized into Mild, Moderate, Severe and Very Severe but these findings are considered for future considerations. This scale facilitates the measurement of physical abuse in local culture. Items are generated on the basis of the abusive acts frequently experienced by children and adolescents. Scale is reliable as well as valid to use. PAS is very easy to understand as well as to conduct. The development of this scale, as well as the preliminary information provided through analysis, is a step in the right direction.

Limitations

It is important to consider the limitations of this study when interpreting the findings. This study has limited generalizability as data was small and drawn from only urban area (Lahore) which may not be representative for whole population of children and adolescents. It would be very useful to include rural population as well with large sample size so that findings can be generalized. Psychometric properties of the scale to measure the frequency of physical abuse were developed on the limited sample. For future use physical abuse scale may be apply on large sample from different areas of Pakistan.

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