Assessment of Adaptive Functioning of Children with Typical Development Attending Primary Schools in Lahore

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Abstract: The present research is designed as an attempt to explore one of the most significant dimensions of child development, that is, adaptive functioning and the contribution of personal and familial demographic variables associated with it among children following typical developmental pattern. The sample comprised 239 children selected through multistage sampling from public and private mainstream schools of Lahore city, Pakistan. The data was analyzed through SPSS. Age, gender, marital status of parents, joint family system and family income turned out to be significant correlates of adaptive functioning. Family system, age and gender wise mean score differences were significant. Findings were discussed in socio cultural context.

Keywords: Adaptive Functioning, Typical Development, Demographic Correlates

1. Introduction

Adaptive functioning is an integral part of developmental assessment and since long has been used to determine the functional potential of human beings. The construct of adaptive functioning is multidimensional in nature (Tasse´ et al., 2012) and different adaptive behavior models assign relative importance to different domains (Thompson, McGrew & Bruininks, 1999). American Association on Intellectual and Developmental Disabilities (AAIDD) comprehensively defined adaptive behaviors as "a set of practical, conceptual and social skills people learned to function adequately in their daily lives" (AAIDD, 2014). AAIDD proposed three core categories of skills each with several subcategories. The main clusters include basic educational concepts acquired by an individual over time; *practical skills,* consisting of day to day life skills that individuals engage in over a life span; and *social skills,* encompassing the social communications and interpersonal relationships which one develops and experiences over time (AAMR, 2002). According to APA (2013), ICD (WHO, 1992) and AAIDD (2014), adaptive functioning is dependent on cultural practices and stress the need to assess it with reference to specific cultural behavioral role expectations.

Adaptive behavior assessment rely heavily on interviews conducted by trained professionals with primary caregiver or someone who knows the assessee well, direct observation, caregiver self report checklists and self-reports of assessee. Interviews by trained professionals are considered most

appropriate as the professional can help understand statements and note cultural practices and beliefs of reporting person. Experts usually consider assessment of adaptive functioning complex and stress to consider cultural biases along with quality, proficiency and level of adaptive functioning equally important as general competencies in specific domains; particularly because experts consider many features of adaptive functioning as culturally determined and remain concerned about varied cross cultural, ethnic and racial practices (Boyle et al., 1996; Valdivia, 1999).

The review of research literature described adaptive functioning as greatly influenced by cultural practices and is shaped in light of culture generated role assumptions that vary depending on age and gender (Tan et al., 2011). Studies identified presence of many adaptive behavior models and instruments but cross cultural researches raised serious concerns on free generalization of these models and tools across cultures. Rather, researchers stress the need to evaluate cultural adequacy of these instruments before using them for clinical and educational decision making (Goldberg et al., 2009).

As far as the factors associated with adaptive functioning are concerned, researches gave a broad range of variables shown to have strong relationship with adaptive functioning. Different researches highlighted the role of different intra personal, cultural (Tombokan-Runtukahu & Nitko, 1992), social and familial factors (Nourani, 1998) influencing the acquisition and quality of adaptive behaviors. Most researches identify age (Alonso, Anuncibay & Hawrylak, 2010), intellectual functioning (Puig et al., 2013), gender, disability status (Kanne et al., 2011), temperament, interpersonal relationships, family support systems (Hall, 2008) etc as some of the strongest correlates and predictors of adaptive functioning. Lastly, most of the researches reviewed in this section concluded that adaptive behavior measures have become common place in psychological assessment and can be very helpful for professionals working with children with developmental psychopathologies.

2. Rationale and Significance of the Present Study

Since long adaptive behavior is considered an integral part of human functioning used to differentiate normal and abnormal functioning (Tasse´ et al., 2012), initially most researches on this topic only involved children with developmental problems specifically intellectual disabilities. This trend had changed slightly as past four decades had witnessed a dramatic increase not only in the prevalence of behavioral problems but also in general emotional and academic problems of children with typical development in mainstream education. Consequently, the focus shifted and researchers started conducting studies to examine the adaptive functioning of children with typical development. Despite all the popularity gained by adaptive functioning, most of the researches only included typically developing children as a comparison group for children with different developmental problems. Inferences drawn from such data are difficult to generalize to most children with typical development, particularly when most of the literature highlights the differences related to taxonomy and characteristics of problems of children following typical development and Atypical development (Jacobson, Maulik & Rojahn, 2007).

Very limited researches were found that assessed adaptive functioning of children in Pakistan and even those limited researches rely heavily on children with disabilities, employed small samples and non-standardized assessment tools. Another limitation noted is that no study attempted to focus entirely on children of mainstream education nor did they study factors potentially associated with adaptive

functioning. Rather most researches restricted their data to small number of children with single developmental problem. Keeping in view the limitations noted in studies conducted particularly in Pakistan, present research was planned to explore the adaptive functioning of children following typical development. The present study also hoped to make unique contribution to existing body of research by exploring the significant input of demographic factors in adaptive functioning among children.

Assessment of adaptive functioning is considered an integral part of assessment of children and adolescents in contemporary clinical and counseling, school and educational, forensic and many other fields of psychology. The findings of this research expected to have some significant implications in educational and clinical fields by providing valid assessment. Having an in depth understanding of adaptive functioning patterns will particularly help to understand significant functioning dynamics and will assist clinicians and educationists to plan educational management programs relevant to children's needs and to monitor children's progress through these management programs.

3. Objective

- To explore the pattern of adaptive functioning in children following typical development
- To identify gender wise differences in adaptive profiles of children in primary schools
- To assess the association of personal demographic variables with adaptive functioning scores
- To evaluate the association of familial demographic variables with adaptive functioning scores

4. Methodology

In order to meet the objectives a cross sectional quantitative research was designed to be carried out in mainstream schools of Lahore, Pakistan. The details of the procedure are given below:

4.1. Sample

The g power analysis holding significance level of 0.05 with medium effect size was used to calculate the sample for main statistical procedures. The sample was selected through multistage sampling involving convenient and random sampling techniques consisting of 239 typically developing children from mainstream schools of Lahore city. The age range of participants was from 5 to 11 years and included both boys (n = 136) and girls (n = 103). Inclusion criteria included more than 70 percent scores in last two examinations, no significant academic and behavioral problems and willingness of parents to share information. The exclusion criteria were age below 5 or above 11 years, history of significant academic or behavioral problems, children who have spent less than one month's time in a specific teacher's class and non-availability or unwillingness of a family member.

4.2 Instruments

The measures used to collect data in this study included demographic questionnaire and Adaptive Behavior Scale, the details are mentioned below:

4.3 Demographic Questionnaire

A detailed demographic questionnaire specifically designed for this research was completed for each participant. It requested basic questions related to personal information of the children and their family. The main variables probed were chronological age, result of last two school assessments, gender, history of any academic and behavioral problems, general relationship with parents, siblings, peers and teachers, number of siblings, family system, residential area, parental marital status, age, profession, education and monthly family income etc.

4.4 Indigenous AB scale

An indigenous adaptive behavior scale developed by authors to assess adaptive functioning of Pakistani children was completed for each participant. The scale was individually administered and comprised four subscale scores namely daily living, self-care, social skills and home living skills and composite adaptive score. This scale demonstrated excellent psychometric indices ranging from 0.73 to 0.98 along with adequate sensitivity and specificity analyses.

4.5 Procedure

After sorting a general permission from Secretary School Education, Punjab different public private schools were selected using convenient sampling technique. Consent to collect data was taken from school administration, parents and teachers. A list of students was prepared for each class with help of the class teachers keeping in mind the inclusion criteria and then participants were randomly selected from that list. With the assistance of teacher, letters were sent to parents attached with homework diaries. Parents were requested to give some time to researcher for filling in demographic questionnaire and some of the items from adaptive behavior scale. Consent letters were sent to 350 parents, 262 parents returned the signed consent form and only 239 finally filled the demographic questionnaires and adaptive behavior scale items. Suitable slots were selected with the help of teachers to administer adaptive behavior scale without creating much disturbance for the participants. A special care was taken to set a suitable schedule not to put any participant at academic disadvantage. Adaptive behavior scale was administered on all participants in individual session of around 25 to 40 minutes from which first 5 to 10 minutes were invested in building rapport. Some of the items from home living and daily living subscales of adaptive behavior scales were filled with the help of mothers, whereas, the responses on items from self help were validated from mothers. At the end all participants were thanked for participation, children were given a small reinforcer and teachers were offered a free session to discuss principles of effective class room management or provided information on any other topic of their interest related to effective teaching. In total 89 % participants availed the free session.

5. Results

The data was analyzed employing both descriptive and inferential procedures with the assistance of SPSS (20.0) and findings are reported in the following section. The first section of results presents details of the personal demographic characteristics of participants along with their family demographic variables. The details are mentioned in the tables below.

Table 1: Personal Demographic Characteristics of the Sample (N = 239)

	Frequency	Percentage	*M (Sd)*
Gender			
Girls	103	43.1 %	
Boys	136	56.9 %	
Age			7.94 (1.99)
Family System			
Joint	143	59.8 %	
Nuclear	96	40.2 %	
Marital Status of Parents			
Married	227	95 %	
Divorced	9	3.8 %	
Widow	3	1.3 %	
Mother's age			37.70 (4.65)
Father's age			42.22 (4.67)

The sample comprised of 57 % boys and 43 % girls; most of the participants were first born (mode = 2; 31.7 %). A large majority of the participants were living with parents in intact marriage and mostly residing in joint family system. The range of number of sibling was from having no sibling to 8 siblings, most of the participants (26.7 %) had 3 siblings. Majority of the participants was living in joint family setup, the mode family income was 15000 and it ranged from 10000 to 500000. Most of the fathers were associated with business (41 %), whereas, a large majority of mothers was found to be housewives (90.6%). Majority of mothers (29.7 %) and fathers (32.7 %) were educated till graduation.

The second section of results discusses the characteristics of adaptive profiles and explores the relationship with personal and family demographic variables like age, gender, family system, number of siblings etc. The mean score for daily living skills was 158.7 (*sd* = 13.15), social skills domain had a mean score of 60.81 (*sd* = 13.22), whereas self help and home living skill domains had mean score of 62.46 (*sd* = 12.99) and 26.28 (*sd* = 9.43) respectively. The mean of composite adaptive functioning score was 308.52 (*sd* = 38.99).

Table 2: Mean and Standard Deviation of Composite Adaptive Behavior Scores (N=239)

	N	*Mean*	*SD*	*95 % CI*		*F*	*P*
				LL	UL		
5 years	23	292.87	34.59	277.91	307.82	2.35	.032
6 years	44	300.30	42.39	286.74	313.85		
7 years	63	307.59	32.23	297.79	317.39		
8 years	15	296.33	41.10	273.57	319.09		
9 years	18	308.75	39.49	295.38	322.11		
10 years	40	319.33	31.56	303.63	335.02		
11 years	36	319.78	41.13	309.41	330.13		

Note. CI = Confidence intervals; LL = Lower limit; UL = Upper limit.

The mean composite adaptive behavior score of participants showed a progression related to chronological age. The youngest participants scored lowest on adaptive behaviors, whereas, the eldest children received the highest mean scores. The difference between mean scores was observed to be significant.

Table 3: Correlation between Domains of Adaptive Behavior Score and Demographic Variables

	DLS	SS	SCS	HLS
Participant's Age	.38**	.45**	.31**	.25**
Gender	-.25**	.23*	-.19*	-.21*
Number of siblings	-.34*	-.27**	-.14*	.26*
Family system	-.47**	-.23**	-.29**	-.19*
Parental Marital Status	-.45**	-.23**	-.19*	-.28**
Family income	.46*	.31**	.14*	-.08
Father's age	-.09	-.18**	-.11**	.05
Mother's age	.14*	-.32**	-.22**	.10
Mother's education	-.19*	.30**	.15*	-.24**
Father's education	-.11	.29**	.13	-.27**

Note. DLS = Daily Living Skills; SS = Social Skills; SCS = Self Care; HLS= Home Living Skills; CS = Composite Score
* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 3 indicates that age of participants positively correlate with all domains of adaptive functioning, whereas, male gender is inversely associated with all domains except social skills. Joint family system is inversely associated with all dimensions of adaptive behaviors, daily living and home living skills scores revealed to have strongest correlation. Number of siblings shares significant negative association with adaptive behavior domains except home living skills that has significant positive correlation among typically developing children. There observes to be inverse correlation between parental education and daily living skills and home living skills. There is an inverse correlation between father's age and all domains except home living skills. Social skills and self care are observed to be inversely associated with mother's age. Adaptive functioning scores of children are negatively associated with parental divorce and single parenthood. Consequently adaptive behavior scores of children are positively associated with intact parental marriage.

Table 4: Gender Differences in Mean Scores of Adaptive Behavior Subscales (N = 239)

Subscales	Girls (n = 103)		Boys (n = 136)		t	p	*Cohen's d*
	M	(*SD*)	*M*	(*SD*)			
DLS	158.65	(13.42)	159.21	(12.99)	-.327	.74	- 0.04
SS	62.78	(12.17)	59.32	(13.82)	2.02	.04	0.27
SC	63.88	(12.42)	61.39	(13.34)	1.47	.02	0.19
HLS	27.46	(10.42)	25.38	(8.48)	1.64	.10	0.22
Composite Score	312.77	40.41	305.30	37.71	1.47	.14	0.19

Note.DLS = Daily living skills; SS = social skills; SC = Self care; HLS = Home living skills.

Gender was assumed to be a significant factor contributing to differences in scores across adaptive functioning domains. The results reveal that the mean score of girls is slightly higher on social skills and lower on daily living skills compared to boys in this group. Only the mean score on social skills reveal significant gender differences, however, the mean scores of boys and girls do not reveal any mean differences on composite or other sub domains of adaptive functioning.

Table 5: Mean Scores of Adaptive Behavior Subscales across Two Family System (N = 239)

Subscales	Nuclear (n = 96)		Joint (n = 143)		t	p	*Cohen's d*
	M	(*SD*)	*M*	(*SD*)			
DLS	161.61	(11.37)	157.20	(13.98)	2.58	.01	0.34
SS	61.09	(13.78)	60.62	(12.88)	.27	.78	0.03
SC	63.92	(12.70)	61.49	(13.13)	1.42	.15	0.18
HLS	27.30	(8.35)	25.59	(10.07)	1.38	.01	0.18
Composite Score	313.93	(35.36)	304.89	(40.97)	1.77	.03	0.23

Note.DLS = Daily living skills; SS = social skills; SC = Self care; HLS = Home living skills.

Family system is generally considered to be an important social agent influencing learning. The results indicate that the mean score of participant from nuclear families were slightly higher on domains of adaptive behavior than participants from joint family system. Only the mean score on daily living skills show significant differences in scores, however, the mean scores of participants from nuclear and joint family system do not reveal any mean differences on composite or other sub domains of adaptive functioning.

6. Discussion

The current study attempted to explore the pattern of adaptive profiles among typically developing children and identify personal and family factors related to adaptive behaviors. When adaptive behavior scores were analyzed with reference to demographic factors, the results presented an interesting picture. Adaptive behaviors are usually considered to be developing in accordance with chronological age

(Kamphaus, 1987) as many previous studies reported an age related progression in adaptive functioning (Goldberg et al., 2009). A similar pattern between age and adaptive behavior is noted in present data which is in accordance with findings of previous researches (Fombonne & Achard, 1993; Thomas et al., 1998).

Although there were gender differences in mean scores of social and self care skills, it failed to account for any significant differences on daily living and home living skills. This finding is in accordance with other researches concluding significant gender differences in adaptive functioning (Bornstein & Hahn, 2007; Oakland, Zhong & Kane, 2015). The reason might be that adaptive behaviors heavily rely on cultural gender role expectations. Different societies and cultural groups set different role expectations for gender, for instance in eastern countries like Pakistani boys and girls are encouraged to adopt different roles since early childhood. Girls had slightly higher scores across all domains which might be due to the reason that girls are reported to generally have a higher learning pace of development compared to boys, slightly higher scores might be the result of this general development trend.

Many studies noted family income as a vital demographic variable contributing directly to developmental process of children (Durkin, Hasan & Hasan, 1998) as family income is closely associated with providing means of behavioral and cognitive stimulation which in turn is related to high performance on different developmental domains (Nievar & Luster, 2006). However, present study observed an interesting blend of findings, it shared positive association with all domains of adaptive behaviors but home living. This positive relationship is in line with earlier researches reporting positive trend between family income and enhanced adaptive functioning (Durkin et al., 1998). The relationship with home living skills may reflect the possibility that better income families generally have access to more domestic help that provide more assistance to children which in turn provide less stimulation to practice and master different skills as is also reported by Nievar and Luster (2006).

Majority of the sample belonged to joint family system which revealed inverse relationship with adaptive functioning. Daily living, home living skills and composite score seemed to be most affected by family system. The reason might be that the presence of more family members provides permanent assistance to children in terms of routine tasks. Consequently, due to this constant availability of help, children may not need to carry out and practice routine chores themselves that are related to adaptive behavior development. On the other hand, there are comparatively fewer family members in nuclear family system, which helps children initiate and master many adaptive behaviors. As when no one is available all the time to fix food, family members teach many small self help and safety skills so that children can effectively meet small daily demands. Another possible reason might be that Pakistan is a collectivistic culture where interdependence is acceptable and not only that family members feel responsible for meeting the needs of children; dependence is cultivated among children since early years.

Present findings did not support the assumption that number of siblings would be positively associated with adaptive behavior scores. One possibility can be overdependence of siblings on each other which does not let children learn adaptive skills. Another possibility can be that siblings at times perceive their typically developing siblings as competitors, exhibit negative emotions towards them and can be less motivating to them which may not facilitate learning new skills. Smith, Romski and Sevcik (2013) studied communication and quality of sibling relationships in pairs with and without disabilities and

concluded that children were more helping and provided good assistance to their disabled siblings in managing behavior and supported learning compared to siblings with typical development. Kaminsky and Dewey (2002) also compared the siblings of Down syndrome's and ASD children to siblings of children with typical development. They observed that the siblings typically developing children were less appreciative of their siblings, had more quarrels and negative encounters and high competitiveness in relationship with their sibling as compared to children with ASD and Down syndrome.

Although, no research was found that directly assessed the relationship between parental marital status and adaptive functioning, present results can be supported by studies conducted on parental stress, interpersonal conflicts and adaptive behaviors. Hall (2008) studied adaptive behaviors of children with autism spectrum disorders with reference to family support network, parental conflict and stress and concluded that conflicting and stressful relationship among parents negatively predicts adaptive functioning of children (Gardiner & Iarocci, 2015). Findings can also be related to researches that discussed the association between parental marital status and general development. One such study was conducted by Amato and Cheadle (2008) concluding that parental marital conflicts and divorce were positively associated with problem behaviors. This may be because in stable families the couple not only provide support to each other but also facilitate and assist children in their learning process. Parental education presented a mixed finding; in general it was positively correlated with social skills and self care domains and negatively with daily living and home living domains of adaptive functioning. Like family income, parental education is likely to provide better assistance and stimulated environment. This finding can be supported with results reported by Nourani (1998) who studied adaptive functioning of Iranian children and concluded that children of less educated families score lower than children from highly educated families. Moreover, parental age observed to have a negative correlation with all domains of adaptive functioning but home living skills was an exception. The reason may be that the older parents may not as actively participate in the learning and developmental process of their children as young parents due to lack of physical energy or burden of other responsibilities.

Like most other studies, present research is not completely free of limitations; one of the limitation is that due to limited resources particularly time, standard assessment of intellectual functioning could not be carried out. Future researches should explore the association between adaptive functioning and intellectual abilities as literature consider it a significant correlate of adaptive functioning. Adaptive profile of children wasn't compared with profiles of western children given in literature; other researches can be planned to make this comparison. Another interesting area to be related to the adaptive profiles would be child rearing practices and temperament of parents. Regardless of the limitations, this study provided an interesting set of findings that would be equally significant for both clinicians and educational to better understand the general functioning and performance of children.

7. Conclusion

Adaptive functioning is strongly related to a range of personal and social factors, from intrapersonal factors, adaptive functioning expectations vary depending on age and gender of the child. Parental marital status, family income and family system can also promote different dimensions of adaptive

functioning. Therefore, clinicians and teachers should take these factors into consideration while assessing adaptive functioning of children.

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