DEVELOPMENT OF SOCIAL SKILLS SCALE FOR SCHOOL CHILDREN

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■ ABSTRACT

Objectives: The present study aimed to develop the socialization skills scale for children aged 7-12 years.

Methodology: This cross-sectional study was carried out during the period September 2020 to January 2021 on a sample of 377 government school children in the age range 7-12 years (M=9.60, SD= 1.61) using a multistage sampling technique. The scale was developed using a three step-model of generating item pool, expert validation, and pilot testing. The content validity of the scale was determined by getting the items reviewed by the five clinical psychologists. The social skills scale was administered to children in a one-to-one setting, along with the demographic sheet, Digit span, and mental control (Wechsler memory scale subset)

Results: Exploratory factor analysis using Oblimin rotation revealed a two-factor structure of the scale namely expressing emotions and social reasoning with 32% cumulative variance. Confirmatory factor analysis also revealed a two-factor structure with good fit indices (CFI=.90, GFI=.95, TLI=.90). The Cronbach alpha of the scale was found to be .70 and the test-retest reliability was .77. The results of the study are discussed in terms of gender and cultural differences.

Conclusion: The study revealed that the 20-item social skills scale is a scale with sound psychometric properties.

Keywords: Social Skills; Development; Children

■ INTRODUCTION

According to DSM-5 adaptive skills in children consist of three key domains one among them is socialization.[1] Social skills are considered to be a key indicator of a child's adjustment to his environment. Just like many constructs such as intelligence, there is no universal consensus on the definition of social skills because the construct is dependent on many other factors such as temperament, parenting, language, intelligence, and the environment of the individual.[2] According to the literature, these are a set of interpersonal skills consisting of getting along with others, dealing with social situations, and conforming to the rules of society. These skills learned by the individuals are greatly influenced by the culture. Deficits in social skills tend to several academic, emotional, and behavioral problems and peer-relationship difficulties. Social Skills are also described as personal and interpersonal goals to accomplish social interaction.[3] The social skill conceptualization by researchers falls between the two models; one is the trait model which proposed that socialization is a personality construct whereas the molecular model suggests that social behavior should be discrete, observable, and performance-based.[4] Perfor-

mance versus ability has been an important debate in the adaptive skills milieu.[5] In the current study performance of the children has been emphasized instead of ability. For example, if a child can initiate conversation in a social situation but never does it will not be scored as a skill.

several assessment tools have been developed in the west on the construct of social skills for different age levels however, there is a scarcity of tools in Pakistan to measure the social skills of children. Malik and Shuja[6] developed a 40-item social competency scale for children aged 9-13years. Some of the limitations of the scale included using a retrospective mode of the interview with parents and students of MS and M.Phil. students and partially consulting literature instead of direct observation of the social behaviors. It is a bit lengthy and self-report measure with three out of six factors based on statements about anger and antisocial behaviors which may arise chances of biasness. Jabeen and Mahmood[7] developed a self-report measure of social skills for children aged 13-18 years which cannot cater to the assessment need of the pre-adolescent age level. Rashid[8] developed a social skills scale for elementary school children of Sargodha

city by selecting items from the social studies curriculum in predefined sub-factors indicating serious methodological issues. Most of the western tools used in Pakistan needed an informant (parent or teacher) to assess these skills in children such as the Portage guide to early education[9] and Vinland Adaptive behavior scale.[10] However, there is usually less trend of parental involvement in the academic needs of children in third world countries.[11] Also, the shelf-life of a test is considered 10 years for some and 20 for others.[12] Children's Adaptive behavior scale[13] also measures a child's social skills however, some of the items do not fit well with culture such as naming a pet. The tool is about 40 years old also, and the picture cards to assess a few items contain western content. No indigenous tools covering the age of seven and eight have been found in the literature that can be administered directly to children using activities and social situations. The development of norms helps in identifying children with typical and atypical social development.[14] The factorial structure of social skills also varied within and across cultures. Literature has identified three[15], four[16] and six-factor structures of social skills.[6] The common sub-factors in these studies were titled social competence, engagement, obedience, empathy, communication, aggressiveness, friendship skills cooperation, assertion, responsibility, self-control, etc.

In sum, social skills are an important determinant of a child's overall functioning. An early assessment of these skills is imperative to rule out children with social skill deficits. Therefore, the current study aims to develop a culturally appropriate, Urdu Language, short, easily administer, and direct measures of social skills in a school or clinical setting where time and cost considerations are important.

■ METHODOLOGY

Initially, a theoretical model was devel-oped to conceptualize the operational definition of social skills. The model consisted of Vygotsky's theory[17] of social development, Bandura's social learning theory[18] and Erikson's psychosocial[19] theory were reviewed to identify the key domains for age 7-12 years. Some of these domains or indicators included dependent and independent social cues to solve problems in a social situation (Vygotsky) attention and memory to social cues (Bandura's) competence, emotional expression, and the extended world of friends and family (Erikson's). In the light of the theoretical model social skills were defined as a set of interpersonal skills used to relate with people to serikspoolve problems in a social situation. In the second step, fifteen parents were interviewed through open-ended questions using the purposive sampling technique. They were asked to tell what social skills their child of 7-12 years exhibits. Their verbatim as was turned into phrases and any duplication or overlapping was removed. As only fifteen skills were extracted from interviews, therefore, literature was reviewed to explore any leftover dimensions. Parental interviews which reflected cultural view was kept as a guide while reviewing the literature. Five more skills were added after reviewing the literature.

Finally, a list of 20 items was prepared and a scoring system of 0-2as was added.

This list was given to five clinical psychologists having at least five years of working experience with mainstream and special children to determine the (1) content validity (2) age appropriateness (3) cultural relevance (4) examine increasing difficulty order. Various suggestions related to increasing difficulty order, changing the format from question to picture card, and language difficulties were reported. The Content Validity Index (CVI) both for scale and item was calculated to be .88. After incorporating the suggestions a 20-item social skills scale was prepared with five picture cards to be administered in the main study after pilot testing. The internal consistency of the scale was found to be .70.

The cross-sectional was carried out from September 2020 to January 2021. The study included a sample of 377 children including exploratory (sample1, n=190) and confirmatory factor analysis (sample 2, n=187). Both samples were recruited from 12 schools of city Lahore using the multistage sampling technique. Comrey & Lee suggested a minimum of 200 samples as fair and 300 samples to be good to run factor analysis. Whereas for the current research Kline's recommendation of several participants to several variables (3:1) was considered.[20]

Only those 7-year children were includ-

Table 1: Tools and their domains selected through literature

Tools selected after Review of the Literature	Domains/factors
Vineland Adaptive Behavior Scales,	Socialization Maladaptive Behavior
Children's Adaptive Behavior Scale,	Socialization Family Role Performance
Portage Guide to Early Education	Social skills (further categories as communication, participation, and imitation)
Developmental Profile-II	Social behaviors
Adaptive Behavior Assessment System,	Social area
Adaptive Behavior Scale-School	Socialization, social engagement, disturbed interpersonal behaviors
Scales of Independent Behavior-Revised	Social interaction skills
The Diagnostic Adaptive Behavior Scale	Social skills (interpersonal relationships, manners, social problem solving)

ed who had attended school for at least two years. Children having any disability or sensory impairment were excluded from the study. Children studying in government-run schools usually belonged to the low or lower-middle socioeconomic status. Similar teaching methodology and curriculum are the key features of government-run schools.

The measures of the study included a demographic form consisting of age, gender, class, and family system) newly developed Social Skills Scale, Digit span, and Mental control (subtests of Wechsler memory scale).[21] The factor description of the social domain included expressing emotions. The first factor consisted of items related to expression and understanding of emotions such as happy, sad, angry, likes and dislikes such as a favorite game. This factor consisted of 10 items. Factor 2 named social reasoning consisted of five items that were related to skills required to solve problems in a social situation such as what will you do if a younger child will call u bad names, what will you do if your friends will not invite you in their play, etc. Digit span consists of forwarding and backward recall of digit measuring attention immediate recall whereas the mental control subtest is used to assess the speed and performance of recall. Both tests were used to find out the construct validity of the social skills scale.

The departmental graduate committee approved the study for any ethical concerns. Permission was taken from school authorities. As data were collected during the second wave of COVID-19 therefor, all SOPs were followed while administering the research protocol. Children were ensured anonymity and they were given the right to withdraw. A debriefing session was held both with the child and teachers.

The institutional review board of the department of clinical psychology approved the study for following ethical standards and issued IRB # 2019-05-045under reference number ICPY/20/130.

IBM SPSS version 24 was used to analyze the results of the study. Mainly descriptive statistics was used to find out frequency and percentages and Pearson product-moment correlation analysis was used to find out the relationship between variables. To run EFA Maximum Likelihood was used and for CFA, analysis of moment structures (AMOS) software was used to find out the fit indices.

■ RESULTS

The descriptive section of the study revealed that boys (52%) and girls (48%) with an age range of 7-12 years were included in the study. The age-wise distribution of the sample showed that 10 years old children were slightly greater in number (n= 80, %=80) as compared to other categories of age. About 30% (n=111) children of aged 7-8 years were studying in grades one and two, whereas, 32% of children were in grades three, and about 38% were in grades four and five. Most of the children lived in a nuclear family system (n=221,%=58%).

Factor analysis of the social domain was carried out by using Maximum likelihood (oblimin rotation). Kurtosis and Skewness were found to be within the range of normality. The value of Kaiser-Meyer-Olkin (KMO) was .78 and the Bartlett Chi-square approximation was 929.93 with p=0.000. If the KMO value is close to 1 it indicates that the pattern of correlation is compact enough to produce different and reliable factors22. The KMO and BST revealed that the EFA method was appropriate for use in this study. The number of factors obtained by the analysis is indicated by the scree plot at the point where the slope of the curve levels off (the "elbow"). This graphical examination indicated retaining 3-4 factors. However, the ML method yielded two factors with 32% cumulative variance as the best fit solution.

The factor loading of items ranged between 33 to .60. Each factor was labeled according to the commonality of the theme that emerged.

The two-factor solutions of the social skills domain yielded through EFA were cross-validated on a sample of 187 children. The initial model resulted in a poor fit model. Therefore, based on modification indices, a covariance path was added between error

Table 2: Sociodemographic characteristics of the participants (n =377)

Variables		n (%)
Gender	Boys	197 (52.30)
	Girls	179 (47.50)
Age	7 years	47 (12.50)
	8 years	57 (15.10)
	9 years	67 (17.80)
	10 years	80 (21.20)
	11 years	66 (17.50)
	12 years	60 (15.90)
Class	1st	56 (14.90)
	2nd	55 (14.60)
	3rd	123 (32.60)
	4th	87 (23.10)
	5th	56 (15.00)
Family system	Nuclear	221 (58.70)
	Joint	156 (41.30)

Table 3: Factor loading on social domain using maximum likelihood (n=190)

Sr#		Social Domain items	Factor Loading	
			1	2
Factor 1	1	2	.33	-.15
	2	3	.37	.10
	3	5	.30	02
	4	6	.38	.14
	5	7	.47	.01
	6	8	.38	.15
	7	9	.38	.00
	8	11	.59	.13
	9	12	.59	.10
	10	13	.35	-.26
Factor 2	11	3	.01	-.60
	12	9	.13	-48
	13	10	.25	-.30
	14	11	.00	-.48
	15	12	.02	.36

Table 4: Confirmatory factor analysis of social domain (n=187)

	X² (df)	x²/df	CFI	GFI	TLI	RMSEA	SRMR
Initial Model	123.744(63)	1.89	.88	.95	.85	.05	.02
Final Model	118.141(62)	1.97	.90	.95	.90	.04	.03

Table 5: Interco-relation among factors of social skills scale, social skills score total and their correlation with mental control, and digit span score of children

Variables	N	M	SD	1	2	3	4	5
1. Emo.Exp.	244	16.43	9.23	--	--	--	--	--
2. Soc. Reas.	244	16.80	8.34	.72***	--	--	--	--
3. Social. Total	244	33.23	16.16	.80***	.69***	--	--	--
4. MCT	244	23.67	13.74	.14**	.03	.32***	--	--
5. DST	244	18.89	10.96	.17**	.11*	.28***	.22***	--

*p<.05, **p< .01, ***p <.001
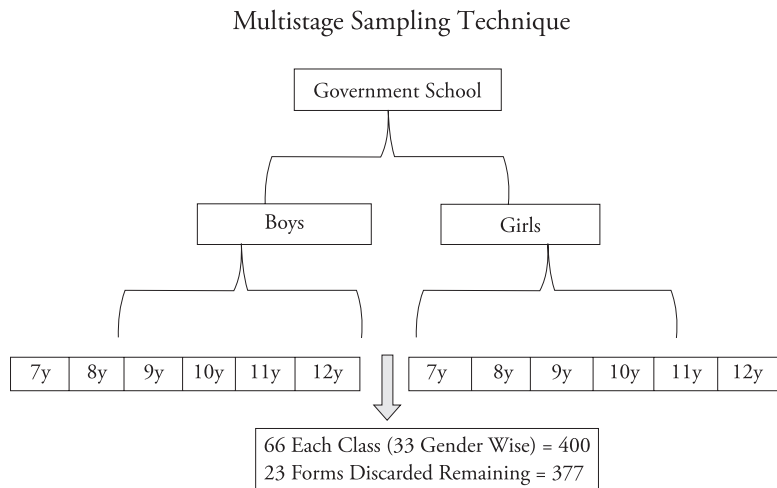
Multistage Sampling Technique

Figure 1: Process of drawing the sample

terms of items 4 and 5 of factor 1. It helped in improving the model but still, a poorly fitted model was achieved. Therefore modification indices were again examined which suggested adding another path of covariance between items 11 and 16 of factor 2 through its error term.

The Cronbach's alpha .68 was obtained in CFA. The GFI, CFI, and TLI RMSEA values of the final model represented the best fit model as the values of CFI and the TLI ranged between 0 to 1; in addition, the value of RMSEA is considered to indicate a good fit to the model if it is less than 0.06[23].
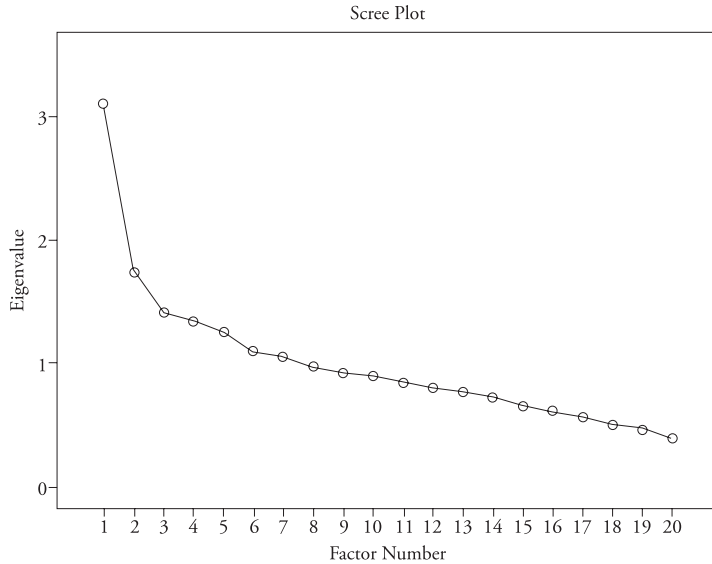
Figure 2: Scree plot of the social skills domain
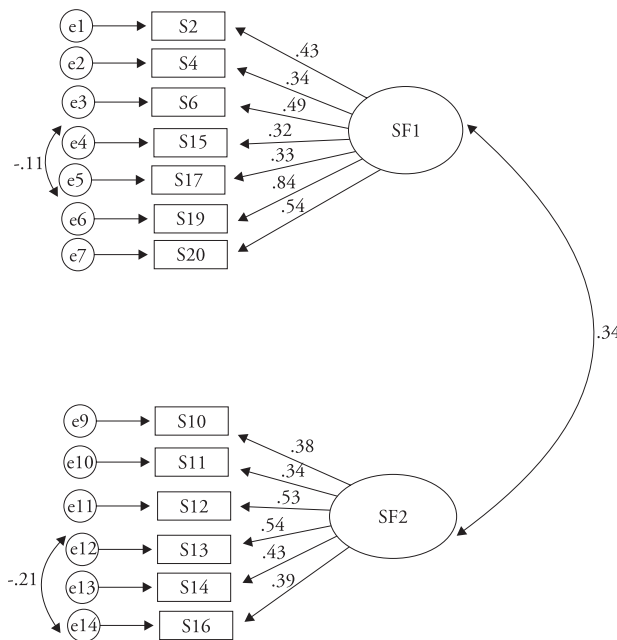

Figure 3: Confirmatory factor analysis (CFA) of social domain

The construct validity of the scale with attention span was found to be .17 (p<0.01). The internal consistency and test-retest reliability was found to be .87. Table three revealed a strong significant positive correlation between factors of the social scale. Mental control and digit span total score also depicted a significant positive relationship.

■ DISCUSSION

The present study aimed to develop a social skills measure for children aged 7-12 years. Children require social skills to be successful and happy at school, with their peers, and with their families. Academic achievement and higher learning outcomes are linked to well-developed social skills.[24] Individuals with strong social skills understand when and how to use a variety of social behaviors, such as tone of voice, hand gestures, facial expressions, and body posture, cooperating with others, and effectively responding to conflict. Therefore it is imperative to assess children's way of responding to people in their environment and identify social deficits if any.

The factor analysis of the current study revealed that the social skill domain is comprised of two factors; emotional expression and social reasoning. Both factors have been an essential part of a wide number of tools developed in the domain of socialization.[12,13,18] Emotional expression, sometimes also referred to as emotional competence[25] tends to indicate the feelings of children in their day-to-day life. It also facilitates interpersonal exchange and reflects emotion regulation processes. Happy, angry, sad, and crying were some of the commonly found emotions in the literature.[26] Emotions reflect an individual's understanding of his relationship with people in his environment. Deficits in verbal and non-verbal emotional expression are a characteristic feature of children with Autism.[27]

Social reasoning, on the other hand, involves an appropriate response in a social situation, differentiating between appropriate and inappropriate behavior, and demonstrating effective interpersonal skills.[28] Studies have shown children start to develop social reasoning skills by age 5 years and individuals with neurodevelopmental issues exhibit poor social problem skills[29-31] Collectivistic cultures emphasize children follow social norms from their early childhood. A punitive or at times assertive attitude is shown by parents to shape children's social behavior. Low scores on social reasoning were found to be associated with externalizing and internalizing behavior problems

A strong positive correlation between both factors shows that children who tend to express emotions are also able to respond appropriately in social situations. Both factors reflect important ingredients of social skills required in a social milieu.[30] High-order cognitive abilities, such as paying attention,

and the ability to form inferences about other people's intentions, feelings, and thoughts, play a key role in the development of social skills. The current study revealed a strong positive correlation between social skills and attention span. Literature suggests that Attention is a prerequisite to comprehension, remembering, following instructions, and solving problems. Attention facilitates active listening and response which in turn lead to effective social skills in children.[20] Interpersonal relation with peers, family members, and classmates are best demonstrated when attention and quick processing is paid to social cues. Overall, the results of the study revealed that the factor structure, content validity, and convergent validity of the scale are supported by the previous research.

■ CONCLUSION

The study has yielded a measure for the assessment of social skills in children of age 7-12 years having acceptable psychometric properties.

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Author's Contribution

AJ conceived the idea, collected the data, and wrote the manuscript. ZM supervised the project. SS contributed to the revision and finalization of the manuscript. SS contributed to statistical analysis and interpretation of the data. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest
Authors declared no conflict of interest

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None

Data Sharing Statement
The data that support the findings of this study are available from the corresponding author upon reasonable request.