Development and Validation of a Scale to Assess the Factors Contributing towards School Refusal Behavior

Faseeha Khursheed^{*} Attiya Inam^{**} Muhammad Abiodullah^{***}

Abstract

School refusal behavior is a serious issue in Pakistan which has remained unnoticed. To understand the intensity of the issue, it is important to understand the school-related factors for school refusal. There was no tool available to study these factors in cultural context of Pakistan. This study aimed to develop a scale to measure different dimensions of school factors causing school refusal behavior among middle school students. Both qualitative and quantitative data were collected for this purpose. Purposive sampling technique was used to recruit 520middle school teachers. A series of exploratory factor analyses was conducted and four dimensions were extracted which were further reduced to three final dimensions including school environment, teachers' classroom management and teacher-student relationship during confirmatory factor analysis. The scale showed high internal consistency and reliability. The Cronbach alpha reliability of the 16items (five -Likert point) scale was This scale will help to study all aspects of school factors 0.74. contributing to school refusal behavior in Pakistan which was not available before.

Keywords: school refusal behavior, teacher-student relationship, school environment, classroom management

^{*} Lecturer, Department of Home Economics, Govt. Degree College (W) Islampura, Lahore. Email: faseehasheikh33

^{**} Assistant Professor, department of Human Development and Family Studies University of Home Economics, Lahore, Pakistan.

Associate Professor Institute of Education and Research, University of the Punjab.

Introduction

School refusal behavior is "a child-motivated refusal to attend school" (Kearney, 2008, p. 452) due to various underlying factors (Kearney& Sheldon, 2017). It is a psychosocial problem associated with adverse shortand long-term consequences for children. School refusal behavior may be full or partial day illegitimate absenteeism(e.g., morning tantrums, pleas to avoid school, complete absence from school for extended period, complete absence from school for certain period, skipping of classes) (Kearney & Fornander, 2016). Heyneet al.(2019) differentiated school refusal behavior from other practices of school absenteeism (e.g., school withdrawal, exclusion, and truancy) and attributed characteristics such as students' resistive behavior to attend school, parents' knowledge their child is not attending school, student's display of symptoms of emotional distress such as anxious behavior, and somatic complaints with no signs of antisocial behavior(Gonzalves et al., 2016).Kearny, Lemos, and Silverman's functional model suggests that school refusal behavior often results from four major functional reasons for avoiding school (2004). The first function involves avoidance of school-related stimuli that intensify negative affect (anxiety, sadness, worry, fear, or somatic complaints) and applies to those children who avoid school because of having uncomfortable experiences in school environment and that may trigger anxiety and/or depression in them(Carroll, 2011). The second function is to escape from evaluative and/or social situations which may be associated with Social Anxiety Disorder. The third function is seeking attention from parents or adults outside school; the child avoids school because of separation anxiety or need for reassurance. The fourth function of school refusal behavior is the pursuit of tangible rewards outside school settings such as television, peers, sports, sleep, and videogames etc. (Bada, 2015). The functional model of school refusal behavioris commonly utilized as a classification system to identify reasons for school refusal behavior among students (Sanmartin et al., 2018). Kearney and Albano developed the School Refusal Assessment Scale-Revised (SRAS-R), an instrument given to children and/or parents to help guide therapy.

School refusal behavior can exhibit various patterns of attendance problems. For example, a child might miss school on Monday, be late on Tuesday, attend full-time school on Wednesday, miss one or two classes on Thursday, and skip half day on Friday. School refusal behavior can be acute (lasting 2-52 weeks) orchronic (lasting more than one year or multiple academic years) (Kearney, 2016). Nursalimet al.(2018) stated that school refusal has been reported to be more frequent after weekends, vacations, or at the beginning and end of the academic session. He further added that major life events may prompt school refusal such as entering kindergarten, severe illness, death of a loved one, changing schools, and the transition from elementary to middle school.

School-related factors such as gang activities and peer pressure can have a considerable impact on child's consistent absenteeism from school (Lyon & Cotler, 2007). Sahinet al.(2016) qualitatively investigated reasons of school absenteeism. Using a sample of 64 principals working at different elementary, secondary, and high schools, found five contributing factors of school absents including: teachers' attitude, directors, families, the school setting, the students, and the environment. They suggested the causes of continuous absence should be explored at the individual and school level. Family participation in school should be priority. Osheret al. (2010) reported that school climate; student-teacher relationship and classroom management play an important role in reducing troublesome behavior and increasing teachers' efficacy within classroom. Poor quality of teachers' classroom management, (maintaining social interactions among students and aiding individual student)can cause disengagement and discomfort among students (Piantaet al., 2012). Teachers, who pay extra attention to their students' needs, create effective learning environment in the classroom, encourage classroom conversations and reinforce efforts of their students, are more likely to develop positive attitude of students towards school (Filippello et al.,2017). In another paper, Fiorilliet al. (2019) described depression and stress as a result of poor student-teacher relationships.

Disruptive school environment and lack of teachers and peer support are risk factors for school refusal behavior. Haviket al. (2015) found that noisy, disruptive, and depressed school environment develops school refusal behavior among students. Bayhan and Dalgic reported that lack of communication between administrators and students within school environment was a major factor that negatively affected the students' success and their choices to leave school (as cited in Sahinet al., 2016).

Haviket al. (2014) explained how poor peer relationship in a specific social situation was likely to be an underlying factor and strengthen child's school refusal behavior. Peer-based factors include being victim at school as well as difficulty in making friends, maintaining relationships, and loneliness (Jones &S uveg, 2015). Brouwer-Borghuiset al. (2019) found that students identified with school refusal behavior experienced more symptoms of anxiety than students who did not have an attendance problem. They also reported peer relationship as a major school-related factor causing school refusal behavior in young population. School refusal cases often require comprehensive assessment and treatment but epidemiological data is not available in Pakistan.

Though several researchers are discussing factors specific to the school environment as one of the reasons for school refusal behavior, a specific research scale highlighting school specific factors of school refusal behavior is missing in the literature. Research conducted in Pakistan highlighting school factors of school refusal behavior is almost nonexistent and requires exceptional attention of researchers. The current study in this regard was planned to develop such a tool to investigate these factors in Pakistan.

Research Methodology

Participants and Design

Participants of the study consisted of both male and female middle school teachers in Lahore Pakistan. The Sample was restricted to only Lahore city due to prevailing conditions of Covid-19. Purposive sampling technique was used for the identification and selection of the sample for the current study. Sixty middle school teachers were recruited for initial process of scale development i.e. 20 teachers participated in the process of item generation and 50 teachers participated in the pre-testing of the initially developed scale.

Final sample of the study included 520 participants. Total 580 respondents were surveyed, but only 520 (89.65%) participants gave complete responses, so60 incomplete responses were not included in the study. Data from these 520 teachers (140 teachers teaching grade 6, 176 teaching grade 7 and 202 teachers teaching grade 8) was collected in two phases. In the first phase a sample of 260 teachers (76 male and 184 female) was recruited from 8 public and 5 private schools of Lahore for exploratory factor analysis.For confirmatory factor analysis,data fromother 260 participants(82 male and 178 female) were collected in the second phase from seven public and six private schools of Lahore. Table 1 provides demographic information of the final sample.

Participants N % Grade level 6 th 140 26.9 7 th 176 34.2 8 th 202 38.9 Gender 76 29.2 Female 184 70.8 Sector 70.8 57.7	Demographic Description of the Sample						
Grade level 6th 140 26.9 7th 176 34.2 8th 202 38.9 Gender 76 29.2 Female 184 70.8 Sector 70.8 57.7	Participants	Ν	%				
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Male 76 29.2 Female 184 70.8 Sector 70.8 70.8 Public 15 57.7	Gender						
Female 184 70.8 Sector 70.8 70.8 Public 15 57.7	Male	76	29.2				
Sector Public 15 57.7	Female	184	70.8				
Public 15 57.7	Sector						
	Public	15	57.7				
Private 11 42.3	Private	11	42.3				

Table 1

Procedure

The process of scale development was carried out following the three elementary steps. In the **first phase**, called "**item generation**," both inductive and deductive methods were used. Deductive method involved an extensive review of literature and pre-existing scales. It was noted that any scale measuring school-specific factors of school refusal behavior was not available.

On the other hand, the inductive method involved collection of qualitative information about school factors from the target population (teachers teaching at Middle school) for the purpose of item development through in-depth interviews. Interview questions were formulated after reviewing literature of school refusal behavior.

For the purpose of item generation, a sample of eighteen female and 12 male middle school teachers was selected by using purposive sampling technique. The sample was drawn from different private and public schools of Lahore. In-depth interviews with middle school teachers were conducted to obtain their opinions about causes of school refusal behavior. During interview prompt and probe techniques were used (e.g. do you have idea about students' problems, Students share their problems with you) the responses of the participants provided the content for the items to be generated for the scale. With the consent of participants, interviews were audio-taped and transcribed. While interacting with the transcribed data, major themes were derived using bottom-up approach following all 6 steps (familiarization, coding, generating themes, reviewing themes, and defining and naming themes) (Braun & Clarke, 2006). Themes developed after thematic analysis and are included in Table 2.

Table 2

List of Themes for Item Generation
Imposing Restrictions
Teachers' fear
Bullying
Classroom environment
Teachers' understanding towards students
Parental involvement in school activities
Negative experiences at school
Excessive workload

The next step was to empirically generate items related to themes. In the initial process 70 items were generated. The researcher kept in mind a variety of considerations while setting of each item and of the scale as a whole. For example, keeping items precise, clear and simple should ensure the inconsistency of response, and remain unbiased. Adequate display format was also considered among other parameters. A pool of 50 items was finalized after multiple cautious readings of the items.

In the **second phase**, indicated to as the "theoretical analysis," the researcher assessed the content validity of the 50 items scale, to confirm the item pool explored the needed construct. In order to ensure content validity, the researcher sought the opinions of subject specialists who were experienced teachers. In-depth examination of experts reduced it to 35 items after elimination of redundant items.

In the **third and last phase** "psychometric analysis", the new scale's reliability and construct validity is assessed. Construct validity of the scale was established in three steps. In step I clarity about items was obtained through pre-testing. In step II exploratory factor analysis (EFA) was conducted for obtaining factorial validity which was further confirmed through confirmatory factor analysis (CFA) in step III.

Step I: Pre-testing

Pre-testing was conducted in order to ensure the clarity of items. For Pre-testing 50 middle school teachers were interviewed to obtain clarity about scale. Ambiguous and overlapping items were excluded and minor changes were made while considering participants' level of understanding and their suggestions. After further exclusion of redundant statements 26 items for factor analysis were selected. Nine items were deleted in the end of pre-testing.

Step II: Data Collection and Exploratory Factor Analysis

After obtaining permission from the school administrations, the remaining 26 items scale was used to obtain data from 260 participants for exploratory factor analysis in Step II of psychometric analysis. Data were collected after explaining the purpose and giving necessary instructions to the participants. Data were first entered to Excel then imported to SPSS version 25. Exploratory factor analysis was conducted to determine the factorial validity of the scale; EFA was run by using SPSS version 25.

Results

Before performing EFA, the data suitability of the sample, "Kaiser-Meyer-Olkin measure of sampling adequacy" was assessed which was 0.75, which is more than recommended value of 0.60.

Barlett's test of sphericity was also statistically significant (X^{2} = 1657.642.53, df = 325, p<.001), and indicated highly acceptable correlation matrix and factorability of the data (Pallant, 2007). The sample size of the study (n=260) was also adequate, because sample size is not of major concern but the ratio of participants to each item. Nunnally recommended 10 to 1 ratio; that is 10 cases for each item should be factor analyzed (as cited in Pallant, 2007).

Exploratory factor analysis was run by applying varimax rotation method on the data of 260 participants. Rotation converged in 7 iterations and four factors. These four factors were based upon eigen value > 1.0 and their theoretical relevance. The inclusion of items based on theoretical relevance and higher loadings of the items under particular factor. An appropriate structure with four well-defined factors was obtained as a result of EFA (see table 3)

	Component					
Items	1	2	3	4		
10	.505					
9	.702					
5	.489	.183	.169			
17	.549	.159				
16	.518	.121				
15	.577	.204				
23	.144	.895				
22		.806				
25		.509				
24		.712				
21	.174	.771	.200			
26	.169	.809		.107		
4	.189		.602			
6			.578	175		
2	.116		.649			
7	.315		.488			
8	.410		.434	.139		
19				.736		
20				.703		
25				.669		

Table 3Final Factors with item Loadings (N=260)

Note: teacher-student relationship I, school environment II, classroom management III, student-student relationship IV

Exploratory factor analysis yielded four clear and well-defined factors. All loadings are higher than .3 (Coakes & Steed, 2003), which shows appropriateness of correlation matrix. All obtained factors were conceptually and theoretically different from each other.

Factor-I. School environment: On factor II five items (21, 22, 23, 24, 26) e.g. **i.** Students are frequently briefed about school rules and regulations. **ii.** School takes special measures of continuous absence were loaded. All items loaded on factor 2 reflect employment of school rules so the factor is named as school environment. Specifically, item 25 and 26 were loaded on factor 2 exclusively. Whereas, item 21, 22 and 23 were loaded on factor1 and factor 2 simultaneously but were retained under factor 2 due to higher loading and theoretical relevance with factor two.

Factor-II. Teachers-student relationship: six items (10, 17, 9, 5, 16, 15) e.g.**i.** You listen to your students' extracurricular issues **ii.** You read your students' mind and anticipate their feelings were retained in factor I and represent teacher's concern towards their student. So this factor was named as teacher-student relationship. Specifically, items 9 and 10 were loaded exclusively on factor 1. Item 17, 5, 16 and 15 were loaded on factor 1 and factor 2 but retained in factor 1 due to its higher loadings and theoretical relevance with factor 1.

Factor-III. Classroom management. Five items (4, 6, 2, 7,8) were loaded on factor 3.All retained items were representing teachers' ability to manage classroom e.g. (i. Do you think that you manage classroom effectively? ii. You understand your students' educational needs quite well), therefore named as classroom management. Specifically, item 2, 4, 8 and 7 were loaded under factor 1 and 3 but were retained under factor 3 due to higher loadings and theoretical relevance with this factor. Item 6 was loaded under factor 3 and 4 but was retained under factor three due to its theoretical relevance with factor 3.

Factor-IV. Reinforcements. Three items (19, 20, and 25) were loaded on factor 4 exclusively. These three items represent reinforcements to attend school e.g. (Students are awarded for their complete attendance) so that named as reinforcements.

Item 1, 3, 11, 12, 13 and 18 didn't loaded under any factor. Item 14 and 18 were excluded due to loadings < .3.The amount of total variance retained by factors was significant (39%).Exclusively, 17.5% was accounted for factor 1 (School environment), 8.4% was accounted for factor 2 (Teacher-students relationship), 7.0% was accounted for factor 3 (Classroom Management) and 6.1% was accounted for factor 4 (reinforcements). Cronbach's alpha coefficient for the scale was 0.74 as a whole. While Cronbach's alpha coefficient for each sub scale was 0.87, 0.64, 0.60 and 0.59 respectively.

Table 4

Final items, variance percentage accounts for factor and alpha coefficient (N=260)

Factors	Items Retained	Final items	Variance	α
School environment	21-24, 26	5	17.5%	.87
Teacher-students relationship	5, 9, 10, 15-17	6	8.4%	.64
Classroom Management	2, 4, 6, 7, 8	5	7.0%	.60
Reinforcements	19, 20, 25	3	6.1%	.59

Step III: Confirmatory Factor Analysis

In step III data of 260 participants were collected subsequently for confirmatory factor analysis. Confirmatory factor analysis was conducted in order to obtain the factor structure of the newly developed scale. For this purpose, the scale obtained from EFA was used to collect the data while following all research ethics e.g. obtaining permission from institutes' administration and consent of teachers. For confirmatory factor analysis data were imported to Amos Version (26).

Results

Confirmatory Factor Analysis

For confirmatory factor analysis, data of 260 participants were again collected and transferred to Amos-21 in order to run confirmatory Factor analysis (CFA). Factor structure and dimensionality of the 19 items scale obtained from EFA was confirmed through CFA. For this purpose, structural equation modeling (SEM) was used.

The factor structure obtained from CFA did notillustrate good fit to data. All the betas obtained were insignificant for factor 4 and also showed insignificant relation with other subscales. Researcher removed the factor 4(reinforcements) from final model. The final model comprised of 16 items with three dimensions including teacher-student relationship, School environment and classroom management and was obtained as a good fit model (Figure 1). The value of Chi square/df = 1.58, Chi square = 198.1 (df = 1.45) p = .000), RMR = .05, CFI = .95, GFI = .90, and RMSEA = .038.factor loadings ranging from .35 to .96 (see table 5)

Table 5

Model Fit Indices of CFA for School Factors of School Refusal Behavior Scale (*N*=260)

Indexes	Chi square	df	Chi square/df	CFI	RMSEA	GFI	TLI
Model	198.09	145	1.58	.95	.38	.90	.94



Figure 1. Factor structure obtained from CFA

Internal Consistency of the Final Scale

In order to evaluate the internal consistency correlation of subscales with their items is calculated. Table 6 shows that all the subscales are significantly associated with their items which support the internal consistency of all subscales. Further, internal consistency of all subscales of school factors of school refusal behavior with each other is also calculated and all subscales are found to be highly correlated with each other. The highest correlation was found between teacher attitude and school environment.

Table 6

0		0	0
Behavior (N=260)			
Variables	1	2	3
School environment	-	.299**	.246**
Student teacher relationship	-	-	.282**

Correlation between Subscales of School Factors of School Refusal

Classroom management Note: **p<0.01

English Translation of the Final Version of the Scale

After establishing internal consistency, final version of the scale was translated in English language by following WHO guidelines for scale translation. In order to establish face validity of the parallel versions of the scale, both monolingual and bilingual feedbacks were gathered from other

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100 participants. All participants responded confidently and were able to clearly communicate the purpose of the survey. Participants were given Urdu version and with two days gap were asked to complete the English version of the scale. Reliability was established by finding Pearson's correlation between both versions (r=.76 to .82 p < .001), which supported to finalize both versions of the scale. Each item was measured on 5-point Likert scale ranges from always=1 to never=5. Parallel form scale was developed to enable data collection from both English and Urdu medium of instructions in schools.

Discussion

A mixed method survey research was conducted in order to design the school factors of school refusal behavior scale (SSRBS) with sound psychometric properties. The scale items were generated empirically and exploratory factor analysis (EFA) was used to determine the construct validity of the scale. Varimax rotation method resulted in four distinctive and interpretable factors. Further, CFA was run to confirm the factor structure obtained through EFA. After conducting CFA student-student relationship factor was excluded because all the betas on this factor were non-significant. After excluding factor 4 a good fit model was obtained (figure 1).

Factor 1 is school environment which includes facilitating teachers, parental involvement, administrative activities and complete check and balance on teachers and students. Quijada, Ruiz, Huertas and Alonso-Tapia, (2020) described school environment as a sum of teacher's performance in classroom and overall learning activities. Moreover, improving and evaluating students' academic performance is also an essential part of school environment. School environment is most significantly associated with student-teacher relationship. This finding is in agreement with that of Quijada, Ruiz, Huertas and Alonso-Tapia, (2020) who found strong association between school management and student-teacher relationship.

Factor 2(student teacher relationship)involves communication between teacher and student, supportive behavior of teacher, understanding students problems and feelings, involving students in activities, understanding students' potentialities which is supported by the research of Hughes, Gullone, Dudley and Tonge (2010) who found Teachers' harsh attitude makes students afraid and unsafe which ultimately encourage them to avoid school. Factor 1 is also supported by the findings of Baker and Bishop (2015) that identified linkage between School refusal behavior and conflicts between students and teachers. Student teacher relationship was not found to be associated with student-student relationship, which is not consistent with the research of Furrer, Skinner, and Pitzzer (2015) who found that teachers' interaction with students can encourage students to establish more healthy relationship with peers.

Factor 3 is classroom management which includes managing class according to students' capabilities, planning classroom activities skillfully, appreciating students' participation in classroom activities and developing students' self-control through encouraging their achievements (Chandra, 2015). In present research classroom management is most significantly associated with teacher student relationship, which is consistent with the research of Chandra, (2015) who found that teachers could make students to achieve their long-term goals. This finding of present study is also found to be consistent with the research of Bear, (2015) who found that good teacher student relationship can avert classroom disruption. Classroom management is found to be associated with school environment which is supported with research of Opdenakker and Minnaert (2011) who found strong association between classroom management and school environment.

Limitations, Suggestions and Practical Implications

The following study has various limitations that need to be addressed in future studies. sample of the present study is limited to only Lahore, Pakistan. Data were limited to only middle school teachers.

It is recommended for the next research to include participants from different ethnic groups and all provinces of Pakistan to obtain more extensive results. Religions and races should be part of upcoming studies.

Practical Implications

The present study has multiple implications. The newly developed scale of school factors of school refusal behavior will educate the parents, teachers and other professionals about the school-related causes of school refusal behavior. This research will lay a foundation for future intervention studies aimed specifically at teachers and parents to promote strategies to reduce child's school refusal behavior.

Conclusion

Conclusively, this study provides in-depth view of school factors of school refusal behavior. A 16 items scale with three dimensions student-teacher relationship, school environment and classroom management, was developed. All of three dimensions were found to be reliable and were highly correlated with each other.

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