

Development and Validation of the Boarding School Climate Scale (BSCS)

Sohail Mehmood¹, Nazia Iqbal² & Muhammad Tahir Khalily³

1, 2, 3, Department of Psychology, International Islamic University, Islamabad Pakistan

For Correspondence: Sohail Mehmood. sohailmehmood24@gmail.com

Abstract

Background. Boarding schools not only provide boarders with education but also focussed to groom the students intellectually, socially, and emotionally. The term boarding school climate is considered to have unique features that appear to significantly differ from the climate of day school. As compared to the day schools, boarding institutes provide residential settings, having a highly structured and organized daily routine, and ample opportunities for learning and engaging in co-curricular activities. Numerous scales were developed to evaluate the day school climate; however, studies aiming to explore and assess the boarding school climate are sparse.

Method. The Boarding School Climate Scale (BSCS), comprises of 68 items, it was developed using the triangulation technique; we employed an open-ended questionnaire, followed by focus group discussions with current boarding students, and literature review. The scale was administered on a sample of participants drawn from 7 public and private-sector boarding schools and colleges of Pakistan. We used the purposive sampling technique ($N=738$, amongst these, there were 635 males, 103 female students). Only those included in the study, who gave written informed consent to participate in the study. The mean age of students was 15.4 years with the age range of 12 years to 19 years old (SD 1.46); the participants were students of grade 6 to grade 12.

Results. The findings of Exploratory Factor Analysis showed a total of eight factors, these named as; Pastoral Care, Behavioral Problems, Academic & Civic Learning, Discipline Safety & Rules, Resource Support, Physical Environment, Leadership, and Relationships. The Convergent Validity of the Boarding School Climate Scale (BSCS) showed a significant correlation with the 9-Item Georgia Brief School Climate Inventory (La Salle, McIntosh, & Eliason, 2016) (GaBSCI) ($r=.73, p <.01$) and its factors highlighting significant indices of convergent validity with an existing school climate measure.

Conclusion. The development of indigenous BSCS is a significant contribution to measuring the boarding school climate in Pakistan. The instrument can assist the boarding school administration to gain an insight into students' perception of the boarding school climate and its various dimensions.

Keywords. *Boarding school climate scale, school climate, exploratory factor analysis (efa), students' perception of school climate.*



Introduction

School climate is a heterogeneous and multicultural construct (Chang & Le, 2010) defined throughout the literature with numerous contextual features. It is a blend of the learning climate for students and the working climate for teachers (Meristo & Eisenschmidt, 2014). There is no universally established definition, dimensions, or source for measurement of school climate e.g., teacher, student, parents, or administrators (Gage, Larson, & Chafouleas, 2016; Rudasill, Snyder, Levinson, & Adelson, 2018; Zullig, Koopman, Patton, & Ubbes, 2010), however, various definitions and contextual features have been described in school climate research. For instance, Hoy and Miskel (2013) proposed "School climate is relatively enduring quality of the school environment that is experienced by participants, affects their behavior and is based on their collective perception of behavior in schools" (p. 210) whereas Mitchell, Bradshaw, and Leaf (2010) conceptualized it as "shared beliefs, values, and attitudes that shape interactions among the students, teachers, and administrators" (p. 272). According to Cohen, McCabe, Michelli, and Pickeral (2009), school climate is "the quality and character of school life. It is based on patterns of people's experiences of school life which reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures"(p. 182).

School climate has been recognized as the most important factor contributing to overall school's success (Schoen & Teddlie, 2008). Several benefits are associated with a positive school climate, such as academic achievement (Allensworth et al., 2018; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Shindler, Jones, Williams, Taylor, & Cardenas, 2016), reduced level of absenteeism, a high percentage of graduated students and a low percentage of suspension (Christle, Jolivette, & Nelson, 2007). Moreover, a positive school climate is also related to several intangible gains like connectedness, motivation, self-efficacy (Fast et al., 2010), social-emotional development, and reduction in risk taking behaviors (Espelage, Low, & Jimerson, 2014; Steffgen, Recchia, & Viechtbauer, 2013). Educators recognize the value of maintaining a positive, secure, and encompassing school climate, and policymakers are focusing on strategies to improve school climate (Hamilton, Doss, & Steiner, 2019).

Although there is no globally acknowledged description of school climate, there is a general agreement that the school climate is a multidimensional concept (Wang & Degol, 2016). Loukas (2007), for instance, proposed a 3-dimensional structure of a school climate based on physical, social, and academic aspects. Zullig et al. (2010) identified eight factors of school climate namely; "positive student-teacher relationships, school connectedness, academic support, order and discipline, school physical environment, school social environment, perceived exclusion/privilege, and academic satisfaction" (p. 146). Thap et al. (2013) in their study noted five spheres of school climate: "safety, relationships, teaching and learning, institutional environment and the school improvement process" (p. 358). Based on 327 relevant studies Wang and Degol (2016), identified 4 broader 'domains' and 13 'dimensions' of school climate. Domain authors identified in their study were the "academic climate, community, safety, and institutional environment". In all school climate assessments, the American National School Climate Centre NSCC (2014) recommends addressing the four key areas: "physical and social-emotional safety, teaching and learning, relationships and environmental structural aspects".

School climate research has mostly focused on day schools where students spend a major part of their life outside school, thus confining school climate effects. Boarders, on the contrary, spend a significant part of their lives in boarding schools under an exceptional set of circumstances. The environment of boarding schools is envisioned as a 'home away from home' (Hodges, Sheffield, & Ralph, 2016) and boarding staff is required to act "in loco parentis" role (Latin for "in the place of a parent") for the boarders (Hodges, Sheffield, & Ralph, 2013). Interpersonal relationship is the hallmark of a boarding environment that differs from that of a day school (Martin, Papworth, Ginns, & Liem, 2014). Structured daily routine and the organized and elaborate system makes this group relatively more homogenous than their counterparts in day school. Martin, Papworth, Ginns, and Malmberg (2016) observe four aspects of boarding life that give rise to a distinct climate; (a) unique aspect of social interaction which encourages boarders to participate in a range of activities with other boarders and personnel, thus creating additional chances for better grooming (b) presence of regulatory

mechanisms and traditions, (c) more stable climate than home or familial setup (d) additional prospects to build mentorship or personal relationships with faculty and house masters as compared to students of the day schools. As boarding schools are different from day schools, absence of any boarding school climate scale (Hodges et al., 2016) necessitates the development of a new scale that exclusively measures the boarding school climate.

Method

The Boarding School Climate Scale (BSCS) was developed in two phases.

Phase 1: The Exploratory Phase

This phase was exploratory in nature in which the triangulation technique was used to evaluate the construct of the boarding school climate. Triangulation is a qualitative data collection technique in which numerous sources are employed to grasp a concept (Patton, 1999). Method Triangulation is one of four types of triangulation explained by (Patton, 1999) to get a broader picture of the similar phenomenon by employing multi-sources (Polit & Beck, 2008) and may include interviews, observations and field notes (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). This phase comprises two steps:

Step I: Development of an open-ended BSCS questionnaire. To identify the dynamics of the boarding school climate, an open-ended BSCS questionnaire was developed; the items were drawn from the literature review, recommendations of the American National School Climate Centre NSCC (2014) and the review of existing scales (Ding, Liu, & Berkowitz, 2011; Gage et al., 2016; New Jersey School Climate Survey, 2014; Zullig et al., 2010). The BSCS open-ended questionnaire was administered on 20 ex-boarders who were graduated from various public and private sector boarding institutes. The inclusion criteria include (a) ex-boarders having 4 to 6 years of boarding experience and (b) they were between the age range from 32 to 47 years ($M= 40.60$, $SD = 3.97$). Data collected through open-ended BSCS questionnaire was analyzed to identify the underlying themes related to boarding school climate; this was performed through thematic analysis (Braun & Clarke, 2006). For this purpose, two judges were requested to analyze the data and to explore fundamental emerging themes.

The main themes that were identified through this process were; interpersonal relationships, teaching and learning, sports and co-curricular activities, facilities/resources, schedule, pastoral care, behavioral problems, civic learning, physical surroundings, discipline, and safety.

Step II: Focus group discussions with boarding students. Keeping in view the literature review and themes generated through the open-ended BSCS questionnaire with ex-boarders, researchers planned focus group discussions with current boarding students. The purpose of convening these focus group discussion sessions was to gain an insight into respondents' indigenous boarding experiences of a sample of boarders. Three focus group discussion sessions were convened with boarding students at PAF College Lower Topa, Murree, Pakistan. An average of 15 students participated in each session. The Focus Group discussion sessions were conducted and facilitated by the researcher on key themes, with the students of grade 10 to 12; with 2 to 5 years of experience as boarders, and their age range was 15 to 18 years ($M=16.20$, $SD = 1.26$). These sessions helped researchers in understanding student boarders' views about various aspects of school climate. Data obtained from group discussions were analyzed in terms of comprehensiveness, intensity, specification, and boarders' perception of significance (Krueger, 2014).

Phase II of study: The Scale Development

During this phase, the following steps were undertaken:

Development of items. Themes explored during Phase-I were applied to develop 168 statements and a 5-point Likert-type rating scale ranging from strongly agree to strongly disagree was appended with each statement. The pool of 168 items was then categorized into 12 dimensions namely: (1) Pastoral care (2) Safety and security (3) Behavioral problems (4) Discipline (5) Connectedness to school (6) Role of principal/commandant (7) Extracurricular activities (8) Teaching and Learning (9) Schedule of activities (10) Resources and facilities (11) Civic education (12) Infrastructure and building.

Committee approach for assortment and categorization of items. To determine the content validity and selecting the appropriate items for the scale, a committee of judges was formed. The committee comprised two Ph.D. teachers and a Ph.D. scholar, all were bilinguals having a good command of the source and target languages (both English and Urdu) and had a background in psychology. The committee was tasked to judge each statement in terms of its relevance to the construct of the boarding school climate. Each member of the committee was given an overview of school climate research and the list of generated statements. The aims of this consultation phase were (a) domain specification (b) deletion of redundant items and (c) fusion of sub dimensions into broader dimensions. A total of 58 items were deleted or merged in this phase resultantly 110 items left in the pool and six broader domains emerged namely (1) Physical Climate (2) Academic Climate (3) Social Climate (4) Discipline and Security (5) Leadership and (6) Pastoral Care.

Translation and back translation of items. Since the items pool was generated in the English language, the 110-item scale was translated into the Urdu language to make the statements of the questionnaire coherent and easier to understand by diverse populations.

Pilot study. During the pilot study, the scale comprising 110 items was administered to 25 boarding students of two boarding schools. In this study, 7 items were deleted as they were adjudged difficult or incomprehensible by students resultantly, 103 items were left on the scale.

Validation Studies

Participants of study. Data were collected from 7 boarding schools situated in Islamabad, Jand, Murree, Sargodha, Swabi and Warsak. The participants comprised 738 public and private sector boarding students (635 male & 103 female students). The ratio of male to female students was however low, as there was a limited number of female boarding schools in Pakistan. The mean age of students was 15.4 years with a minimum of 12 to a maximum of 19 years (SD= 1.46) from grade 6 to grade 12. The mean time spent by students in boarding institutes was 3.65 years (SD= 1.77) with a minimum of 1 to a maximum of 11 years.

Procedure. The principal of each boarding school was approached and authorization for collection of data was requested and on his / her permission, scale was administered upon boarders. Instructions were elaborated on each questionnaire and students were assured about the secrecy of the results. The willingness of each participant was taken through a consent form attached to the scale. An EFA was performed to determine the factor structure and dimensionality of the Boarding School Climate Scale (BSCS). Before conducting EFA, Pre-analysis checks were convened to ensure (a) Emergence of a stable factor structure (b) Items were properly scaled and free from biases, and (c) Appropriateness of data for EFA. An item with a kurtotic value between -2 and + 2 was considered appropriate for proving normal univariate distribution (Muthén & Kaplan, 1985), and deviant items beyond this range were removed (Gorsuch, 1983). A total of 21 items were deleted in the process and resultantly 82 items were left in the scale. Bartlett's test of Sphericity and Kaiser-Meyer-Olkin (KMO) measures were calculated to determine the appropriateness of data for factor analysis. The value of KMO was .93 which indicated a high probability that correlations matrices included factors. Tabachnick and Fidell (2001) had recommended a KMO value of .60 and above for good factor analysis. Bartlett's test of Sphericity for BSCS had a significant value ($\chi^2 (3321) = 24264.01, p < 0.00$), so data was deemed suitable for factor analysis, and PCA was carried out with 82 items of BSCS.

Principal Component Analysis. Principal Component Analysis (PCA) with oblique rotation was performed to evaluate the factor structure of the scale. Items having absolute value $\geq .32$ (Field, 2013) were included in each factor. Preliminary factor analysis produced excessive factors, i.e. besides main factors, additional inadequately defined factors were also obtained. Factor analysis was carried out with 8,9,10 variables. A practical solution to the factor appeared when the number of factors was reduced to 8. Table 1 shows the factor structure of the Boarding School Climate Scale (BSCS). Theoretically, the 8-factor solution generated the best interpretation of the factor structure comprising 68 items. Kaiser rule, eigenvalues greater than one, was applied for the extraction of factors in the study (Nunnally, 1978). Factor analytic literature suggests that this is the most frequently used measure for determining the factor structure (Costello & Osborne, 2005).

Two rules were applied for the final structure of scale i.e., (a) items having factor loading $\geq .32$ on one factor and its (b) theoretical significance. The first factor consisted of 14 items and accounted for 23.46 % of the variance in the model. This factor was named "Pastoral Care." The second factor consisted of 8 items and accounted for 5.75 % of the variance in the model and was labeled "Behavioral Problems". The third factor consisted of 9 items and accounted for 3.87% of the variance in the model and was named "Academic and Civic Learning".The fourth factor consisted of 11 items and accounted for 3.41% of the variance in the model. This factor was named "Discipline, Safety, and Rules". The fifth factor consisted of 6 items and accounted for 2.99% of the variance in the model. This factor was labeled "Resource Support".

The sixth factor consisted of 6 items and accounted for 2.45% of the variance in the model. This factor was labeled "Physical Environment". The seventh factor consisted of 6 items and accounted for 2.23% of the variance in the model . This factor was labeled "Leadership". The eighth and final factor consisted of 8 items and accounted for 2.15% of the variance in the model. This factor was labeled "Relationships". The total variance explained by BSCS was 46.31%. Cronbach's alpha was calculated to determine the internal consistency of the scale (Cronbach, 1951). The alpha coefficients for the 8 factors were as follows: Pastoral Care = .91, Behavioral Problems; =.84, Academic & Civic Learning; =.82, Discipline Safety & Rules=.78; Resource Support=.72, Physical Environment=.73, Leadership=.83, and Relationships=.79. The Cronbach's alpha for the overall BSCS was 0.95.

Table 1

Instrument Items of Boarding School Climate Scale (BSCS) its Alpha Coefficients and Factor Loadings. (N=738)

Items (% Variance Explained)	Exploratory Principal Component Analysis
Factor 1: Pastoral Care (23.46 %)	.91
House master House mother shows compassion and a caring attitude towards students.	.74
House master/House mother listens to the complaints and problems of students.	.74
House master/House mother regularly visits your house and interacts with students.	.66
House master/House mother understands the developmental needs of students.	.66
House master/House mother takes a personal interest in the activities of your house.	.61
House master/House mother acts as a role model to groom the students.	.61
House master/House mother is capable of looking after the house affairs.	.61
House master/House mother takes real interest in your future.	.61
House master/House mother remains available to handle any emergency.	.61
House master/House mother monitors and guides students to improve their academic performance.	.60
Teachers deal with students based on equality.	.52
Teachers help you solve your problems.	.50
Teachers act as role models for the development and grooming of students' personality.	.49
Teachers monitor all the activities of students.	.35
Factor 2: Behavioral Problems (5.75%)	.84
Some students often tease their fellow students.	.77
Some students spread rumors about fellow students.	.75
Some students make remarks about other students due to their low socioeconomic status and ethnic background.	.71
Bullying is fun for some students.	.68
Some students pretend illness to avoid classes and sports.	.65
Some students behave aggressively with fellow students.	.61
Despite strict measures, some students use unfair means during exams.	.57
Some senior students forcibly make juniors to do their tasks.	.49
Factor 3: Academic and Civic Learning (3.87%)	.82
Teachers educate students about health and wellbeing.	.64
Life skills are inculcated through curricular and co-curricular activities.	.59
Subject teachers give extra coaching to weak students.	.58
Civic education is provided to students.	.54

Items (% Variance Explained)	Exploratory Principal Component Analysis
Teachers and house masters guide students to develop their moral character.	.48
Teachers guide students in resolving interpersonal conflicts and managing anger.	.46
The schedule of activities (For example, academics, sports and co-curricular activities) is meticulously planned and organized.	.45
Guidance and counseling services are provided to students.	.40
Movies, dramatics, and musical shows are arranged for students.	.35
Factor 4: Discipline, Safety, and Rules (3.41%)	.78
A sufficient number of security persons is deployed to handle any emergency.	.55
Clear rules and consequences for indiscipline exist.	.53
Certain unsupervised areas in your school are safety hazards.	.53
There are certain unsupervised places/points through which students can go out of the premises without permission.	.51
Incidents of aggression and violence against fellow students are dealt with strictly.	.50
School / College administration takes strict action against bullying incidents for example hitting, name-calling, etc.	.48
Students feel safe in changing rooms/washrooms and hallways in your house.	.46
If students report unsafe or dangerous behavior, they are sure that the problem will be taken care of.	.43
The administration takes effective measures to put a check on the unhealthy activities of students such as smoking, cheating, stealing, lying, etc.	.42
Students are taught and trained as to how to deal with emergency.	.41
There are rules against physical abuse, teasing, name-calling, or saying bad things about fellow students.	.34
Factor 5: Resource Support (2.99%)	.72
There is a suitable auditorium/hall for different ceremonies.	.86
Meals are nutritious and hygienic.	.61
Sufficient facilities such as heaters, fans, etc. have been provided for a comfortable environment.	.55
Teachers use audio-visual aids during teaching.	.43
Appropriate medical facilities are available and accessible to students.	.41
Guest lectures are arranged to enhance the knowledge and understanding of students on religious, social, and motivational aspects.	.38
Factor 6: Physical Environment (2.45%)	.73
Classrooms are spacious and the furniture is comfortable.	.75
Buildings are neat and clean.	.66
Residential houses have appropriate furniture and bedding.	.64
Washrooms are neat, clean, and well maintained.	.61
The dining hall is spacious, neat, and clean.	.36
Buildings have an attractive appearance.	.35
Factor 7: Leadership (2.23%)	.83
Principal regularly interacts with students and enquires about their problems.	.72
Principal is a role model for students.	.71
Principal is completely aware of what is going on in the school/college.	.68
Principal keeps close contact with housemasters, house mother /warden, and monitors the house affairs.	.66
Students can approach the principal to address their problems/issues.	.65
Principal empowers the house masters to make appropriate decisions as deems necessary.	.62
Factor 8: Relationships (2.15%)	.79
Students treat each other with respect.	.76
Students resolve conflicts with fellow students in a cordial manner.	.64
Students give due respect to teachers.	.60
Students feel that this institute is their second home.	.52
Most of the students feel happy to get back to school /college after vacations.	.50
Students feel pride in wearing school/college uniform.	.44
Students like the time that they spend at school.	.42
Students are involved in the decision-making process in this institute.	.40

Note: Cronbach's alpha values are reported in bold.

Domain intercorrelations. Table 2 shows the intercorrelations among the eight boarding school climate factors. All the factors were significantly correlated with one other. The factor assessing behavioral problems was negatively correlated with all the factors. Correlations ranged from $r=-0.17, p<.01$ for Resource Support and Behavioral Problems to $r=0.66, p<.01$ for Pastoral Care and Academic and Civic Learning. Factor measuring Pastoral Care reflected the strongest positive correlation with the overall school climate ($r=.83, p<.01$) followed by Academic and Civic Learning ($r=.80, p<.01$), Relationships ($r=.77, p<.01$), Discipline Safety and Rules ($r=.75, p<.01$), Leadership ($r=.71, p<.01$), Physical Environment ($r=.67, p<.01$) and Resource Support ($r=.65, p<.01$). Whereas the factor measuring Behavioral problems showed the significant negative correlation with the overall boarding school climate ($r=-.51, p<.01$).

Table 2
Bivariate Correlation Coefficients of BSCS Items in the EFA Sample (N = 738).

Factors	Factors							
	1	2	3	4	5	6	7	8
Factor 1: PC	-							
Factor 2 BP	-.25**	-						
Factor 3: ACL	.66**	-.27**	-					
Factor 4: DSR	.56**	-.23**	.51**	-				
Factor 5: RS	.44**	-.17**	.55**	.43**	-			
Factor 6: PE	.41**	-.35**	.53**	.42**	.45**	-		
Factor 7: L	.57**	-.18**	.53**	.56**	.46**	.38**	-	
Factor 8: R	.58**	-.36**	.57**	.47**	.41**	.52**	.47**	-
Total BSCS	.83**	-.51**	.80**	.75**	.65**	.67**	.71**	.77**

Note: ** $p < .01$ PC=Pastoral Care; BP= Behavioral Problems; ACL=Academic & Civic Learning; DSR=Discipline Safety & Rules; RS=Resource Support; PE=Physical Environment; L=Leadership; R=Relationships, BSCS = Boarding School Climate Scale.

Convergent validity index for Boarding School Climate Scale (BSCS). To determine the convergent validity of the Boarding School Climate Scale, a correlation was calculated between the newly developed Boarding School Climate Scale and the 9-item Georgia Brief School Climate Inventory (GaBSCI) (La Salle et al., 2016). Table 3 indicates that Boarding School Climate Scale (BSCS) is significantly correlated with Georgia Brief School Climate Inventory (GaBSCI) ($r=.73, p <.01$) highlighting its convergent validity with an existing school climate measure. GaBSCI also reflects significant correlations with sub-factors of BSCS ranging from $r = -.27, p <.01$) with Behavioral Problems and $r = .68, p <.01$) with Pastoral Care. The results provide support for the BSCS as a comprehensive assessment of students' perception of the boarding school climate.

Table 3
Correlation analysis showing the relationship of Georgia Brief School Climate Inventory (GaBSCI) and Boarding School Climate Scale (BSCS) (N =738).

Scale	PC	BP	ACL	DSR	RS	PE	L	R	GaBSCI	BSCS
GaBSCI	.68**	-.27**	.58**	.55**	.43**	.46**	.54**	.60**	-	.73**

** $p < .01$ Note: PC=Pastoral Care; BP=Behavioral Problems; ACR= Academic & Civic Learning; DSR=Discipline, Safety & Rules; RS=Resource Support; PE=Physical Environment; L=Leadership; R=Relationships, GaBSCI= Georgia Brief School Climate Inventory, BSCS=Boarding School Climate Scale

Discussion

The findings of this study indicate that the BSCS has the potential to be a beneficial self-report measure of the perception of boarding school climate by boarders. The non-availability of scale to measure the boarding school climate has been cited as a limitation in school climate research (Hodges et al., 2016). The BSCS has the potential to be used either as a screening tool (to identify schools in need of interventions to improve the school climate) or as an evaluation tool (to measure the impact of interventions in the development of a positive school climate). The BSCS factor structure is consistent with decades of school climate research that has identified the different dimensions of the school climate (Loukas & Robinson, 2004; Modin & Östberg, 2009; Thapa et al., 2013; Zullig et al., 2010). The internal consistency estimates of all the factors of the newly developed boarding school climate scale range from .72 to .91, implying that these factors are most suitable for the assessment of boarding school climate. The study further reveals that the factor measuring pastoral care explains 23.46 % of the total 46.31% variance in the model signifying pastoral care as the most important factor in determining the overall boarding school climate. Moreover, pastoral care is also significantly correlated with overall boarding school climate ($r = .83, p < .01$). However, the factor measuring behavioral problems is negatively related to overall BSCS ($r = -.51, p < .01$). All the stakeholders of boarding schools know that boarding institutes are required to provide a “home away from home” (Anderson, 2005; Hawkes, 2001; Holgate, 2007). The essential responsibility for the growth and wellbeing of the boarders must be acknowledged by boarding staff acting in loco parentis role (Hodges et al., 2013).

The purpose of the development of BSCS is to address the requirement of scholars in pursuit of a psychometrically sound and comprehensive school climate scale designed to assess the boarding school climate. BSCS can be used to promote factual decisions that can be integrated into an evidence-based approach intended to enhance school climate, student performance, and learning.

Limitations and Suggestions

Quite apart from the potential significance, this study holds numerous limitations that should be acknowledged for future studies.

One of the major limitations of this study was the use of cross-sectional research design therefore, longitudinal studies may be envisaged in the boarding school context. The sample was limited to boarding students of two provinces. Although students from diverse cultural and geographical backgrounds attend boarding schools, future studies may be conducted by collecting data from elite public and private-sector boarding schools of other provinces to study whether the findings of our study are replicated among other samples. Moreover, limited girl's data was included in the study due to the shortage of girls' boarding schools, however, more and balanced data may be collected from girl's boarding schools and colleges to study the gender effects. Furthermore, the self-report measure was used in this study that may entail faking good or bad responses.

Implications of Research and Future Directions

This study holds practical implications on theoretical as well as practical level. On a theoretical level, this study contributed to the development of the first-ever Boarding School Climate Scale (BSCS) to measure the perception of boarding school students about school climate. Although several scales are available to measure day school climate, however, no scale was available to measure the boarding school climate. The development of BSCS for Pakistani boarding schools is a significant contribution to the psychometric literature. BSCS proved to be a valid and reliable test for the assessment of boarding school climate based on various dimensions of BSCS. It may assist in boarding school administration and scholars to assess the boarding school climate and accordingly organization may devise an intervention plan based on the assessment. Boarding School Climate Scale (BSCS) is a scale in the evolutionary process, future studies are required to further validate BSCS with diverse samples. Moreover, the factor structure of the boarding school climate scale should also be validated through confirmatory factor analysis. The present study was based on self-report measures having a single informant approach, however, the multi-informant strategy based on a perception of boarding staff would give an impetus to future research.

The adaptability of students in boarding schools is an important factor; future studies may be planned to study the personality factors that help in the successful adaptation of boarding students. Findings of previous studies suggest that strong students make very substantial academic progress once they manage to adapt to their boarding environment whereas, the weak students who failed to acclimate well, boarding schools were not suitable for them.

Conclusion

The current study is a pioneer in understanding the construct of boarding school climate. It provides a framework for analyzing the boarding school climate in civil and military boarding institutes. This study delineated the various dimensions of the boarding schools as perceived by the boarding students. It can help in better understanding the various components that give rise to a positive boarding school climate.

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Competing Interests

The authors are well informed and declared no competing interests.

Ethical approval

The study was approved by the Department of Psychology IIUI Ethics Committee (DPEC).

Consent for publication

Consent approved by the authors.

Availability of data and materials

Data not available due to the sanctity of boarding institutes from where the data was collected.

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Authors' contribution

S.M. Contributed to the conceptualization of research design, literature review, items development, data collection, data analysis. N.I. Contributed to research designing, item development, statistical analysis, drafting of the article. M.T.K.

Contributed to questionnaire designing, translation of the final scale in terms of semantic analysis, reviewed and edited the final draft of the manuscript before submission.

Abbreviations

B.S.C.S.: Boarding School Climate Scale
Ga.B.S.C.I. Georgia Brief School Climate Inventory
E.F.A.: Exploratory Factor Analysis
P.C.A.: Principal Component Analysis
K.M.O.: Kaiser-Meyer-Olkin
P.C.: Pastoral Care
B.P.: Behavioral Problems
A.C.L.: Academics & Civic Learning
D.S.R.: Discipline, Safety & Rules
R.S.: Resource Support
P.E.: Physical Environment
L.: Leadership
R.: Relationships

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