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Effects of a Structured Physical Education Program on Students' Social Skills

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ABSTRACT
This research investigated the impact of a Structured Physical Education (PE) Program on the social competence of early adolescent girls in Pakistan. A quasi-experimental design was used and involved 513 students (Grades 6-8) from four schools randomly allocated to an Experimental Group (EG), receiving a 12-week SEL-integrated PE intervention, or a Control Group (CG), maintaining conventional PE. Social competence was assessed with the Multisource Assessment of Social Competence Scale (MASCS) before and after treatment. Findings indicated a statistically significant Group × Time interaction ($p < .001$) for all seven aspects of social competence. The EG registered large, significant gains in cooperation, empathy, and independence (Cohen's $d > 1.40$), and significant declines in impulsivity, disruptiveness, anxiety-withdrawal, and sadness (Cohen's $d > 1.16$), with no significant changes in the CG. The results indicate that a formal PE program is an extremely effective vehicle for socio-emotional learning in resource-deprived settings. The research recommends policy change to include SEL in national PE curricula and spend on instructor training to optimize wholistic student growth.

Keywords: Structured Physical Education, Social Competence, Socio-Emotional Learning, Early Adolescence, School-Based Intervention

INTRODUCTION

Education has since passed its usual emphasis on scholarly success and has included the entire child in its scope of development. Of the pillars upon which this development rests is social competencies, the skills through which one effectively and peacefully interacts with people around them. These include communication, cooperation, empathy, and conflict resolution (CASEL, 2015). For young adolescents, especially girls in middle school (grades 6 to 8), this stage of development is a critical window in which identity is shaped, peer

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relationships become intricate, and peer acceptance becomes an increasingly important need (Erikson, 1968). It is at this susceptible stage that organized interventions can most effectively influence their socio-emotional course.

Here, Physical Education (PE) is re-emerging not only as a recreational time, but also as a powerful pedagogical agent for developing these critical life skills. An increasing amount of overseas research shows that a Structured Physical Education Program (SPEP) one with well-defined goals, intentioned activities, cooperative games, and reflective conversation can powerfully improve students' social and emotional learning (SEL) (Dyson et al., 2021; Bailey, 2006). In contrast to free play, structured PE is specifically programmed to generate situations that require teamwork, leadership, and problem-solving, thus offering a real-world setting for learning social competencies (Sánchez-Hernández et al., 2018). Research has established that these programs can lower rates of antisocial behaviors, enhance classroom climate, and enhance students' feelings of belonging and self-efficacy (Brock et al., 2009).

The attention given to girls in middle school is of particular significance. Research shows that girls tend to experience lower levels of self-confidence and physical activity levels during adolescence, corresponding to higher social pressures and a more complicated social dynamic (Slater & Tiggemann, 2010). A solid PE program can combat this by creating a supportive context where girls can develop physical competence in a non-critical environment and build their self-worth. In addition, shared physical pursuits have the potential to break down cliques, promote diverse peer relationships, and instruct girls to cope with competition in a healthy manner, developing resilience that far transcends the gymnasium (Whitley et al., 2021).

This evidence base is strong in Western settings, but there is little literature from South Asia, and Pakistan in particular. The education system of Pakistan offers a distinctive intersection of challenges and possibilities. At the national level, policy initiatives such as the National Sports Policy and the National Curriculum for Physical Education support promoting sports and physical education in schools (Government of Pakistan, 2005; Ministry of Inter-Provincial Coordination, 2017). Still, in practical reality, it never seems to be implemented as much, particularly regarding organized incorporation of SEL goals. The focus remains predominantly on skill development and competition, rather than on using physical activity as a vehicle for holistic social development.

This gap is even more pronounced in regions like Khyber Pakhtunkhwa (KP), were socioeconomic constraints and cultural nuances further complicate health promotion and sustainable healthy lifestyles. Economic constraints, poor sporting facilities within public schools, limited PE teacher training, and some cultural attitudes that can limit girls' access to sport are significant barriers (Khan & Khan, 2020; Ahmad et al., 2019). Such barriers render policies ineffective or inaccessible for the adolescent girl population in this country, even when they do exist. As a result, there is an urgent necessity for contextually relevant, evidence-based models that illustrate how a structured PE programme may be effectively delivered under these constraints to meet essential social outcomes.

Thus, the current study set out to address this dual gap. Globally, it contributes to the literature in offering a non-Western case study regarding the effectiveness of structured PE for developing social skills. Nationally and

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regionally, it aims to produce vital empirical evidence in Pakistan's sports science and health context, exemplifying the transformative power of organized PE for girls in KP. Through an examination of the influence of a program designed to meet specific needs on social skills among middle-school girls, the study will yield a model that is congruent with national education and health policies and that presents actionable, replicable solutions to the socioeconomic issues prevalent in the region. It contends that an investment in structured PE is not only an investment in physical health, but a strategic investment in promoting a generation of self-assured, cooperative, and socially competent young women.

LITERATURE REVIEW

The capacity of physical education (PE) to impact development outside the physical is an accepted idea in educational scholarship. This literature review summarizes what is already known about how organised PE schemes impact the development of social skills, critically assesses the advantages and disadvantages of this research and identifies a particular gap with respect to adolescent girls in situations such as in Pakistan. The review is organized in three general themes: the theoretical connection between physical education and social development, empirical data from cross-cultural studies, and the specific socio-cultural limitations in the Pakistani environment.

i. Theoretical Foundations: PE as a Means for Social Development

The argument for employing PE as a means of developing social skills is based on socio-cultural and social learning theories. Vygotsky's (1978) theory of learning as a social activity is especially applicable, given that systematic PE offers the special "zone of proximal development" for students to practice and embed social competencies such as cooperation and communication with each other and teacher support. In addition, Bandura's (1977) social learning theory holds that people acquire behavior through observing and imitating. An organized PE classroom, where teachers demonstrate positive values such as respect and fair play, is the perfect context in which to learn this way. These theories give us a context for understanding how intentional physical activity is an effective pedagogical strategy for social and emotional learning (SEL) can be, going beyond play to build purposeful experiences that instruct children on how to effectively engage with others (CASEL, 2015).

ii. International Empirical Evidence: Mechanisms and Strengths

There is a sound international research base to show that there is a positive relationship between organized PE and social competence development. Bailey's (2006) seminal review found that PE, well implemented, can facilitate development in the social, cognitive, and affective domains and concluded that teamwork, leadership, and empathy were among the important outcomes. Later research has added to this, investigating the mechanisms in detail. For example, Dyson et al. (2021) established that curricular models such as Sport Education, with its focus on consistent teams, student roles (e.g., referee, coach), and celebratory atmosphere, provide real-world contexts where students can learn

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responsibility, conflict resolution, and respect for one another. In the same manner, cooperative learning in PE research has indicated that activities that are structured to necessitate interdependence in which students must collaborate to reach a shared objective demonstrate considerable enhancements in social skills and peer relationships (Sánchez-Hernández et al., 2018). These studies are a strength of literature because they transcend correlation to establish the active ingredients (e.g., teamwork, role-taking) that create PE efficacy for social development. But a serious limitation in much of this global literature is an absence of attention to the gendered nature of these results. Although Whitley et al. (2021) expressly emphasized the importance of social support and feeling part of a group in an after-school sports program for at-risk youth, the participants were usually mixed-gender or male-led. The adolescent girl's experience is different; they experience specific social pressures and a documented drop off in sport participation and self-esteem in middle school (Slater & Tiggemann, 2010). It is thus inappropriate to transfer conclusions from studies of general or male student samples to female samples. The body of literature would be enhanced by more focused research looking at the extent to which highly structured PE specifically offsets social difficulties and develops competence for girls at this key stage of development.

iii. The Contextual Gap: Socio-Cultural Constraints in Pakistan

The encouraging results from cross-national research are dramatically contrasted with those found in many developing countries, most notably Pakistan. The discussion here moves away from maximizing educational impact for social development towards understanding basic barriers to its feasibility. There are national policies, including the National Sports Policy (Government of Pakistan, 2005) and the National Curriculum for Physical Education (Ministry of Inter-Provincial Coordination, 2017), which in theory support promoting sports and a uniform PE curriculum. However, their implementation is highly undermined by deficiencies in infrastructure, inefficient training of specialized PE teachers, and curricular overcrowding favoring academic subjects (Khan & Khan, 2020). These issues are sharply experienced in provinces such as Khyber Pakhtunkhwa (KP) and are further exacerbated by socio-cultural and economic determinants that disproportionately impinge on the lives of girls. According to Ahmad et al. (2019), important deterrents include economic limitations that restrict access to facility and equipment, a deficiency of safe and designated spaces for female physical exercise and strongly entrenched cultural values that at times perceive sports as incompatible with traditional femininity. These restrictions not only reduce physical activity but also deny the very social and emotional benefits that evidence-based structured PE has been shown to deliver worldwide to female students. Therefore, there is a compelling disconnection between national policy objectives and ground-level reality for numerous young women.

There is a considerable lack of literature uncovered by this review. Although international research is strong in theory and evidence base

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regarding social benefits of a structured PE, international studies are lacking which test these models in the context of the constraints of the Pakistani school and cultural setting. There was no evidence of a study that specifically evaluates the effect of a structured PE on the social skills of KP middle-school girls controlling local socio-cultural dynamics. Thus, the current study attempts to bridge this gap. It attempts to establish if the positive results being reported in global literature can be replicated within a resource-poor context and create a locally suitable model based on PE as a means of social development for a severely underprivileged group.

METHOD AND MATERIALS

i. Place of Work

This research was carried out in Islamabad Model Schools for Girls (IMSG) network in Islamabad, Pakistan. IMSG has several branches in the city that educate students from various backgrounds. Four of the branches were chosen as sites for data collection based on administrative clearance and representative student population: Said Pur, NHC, Margalla, and Mohra. All the schools are based on the federal curriculum and possess identical infrastructure and resources, which allows for a uniform setting for the application of research intervention.

ii. Research Design

This research was funded with a quasi-experimental, pre-test/post-test control group design. This design was chosen because random assignment of individual students was not possible within the intact classroom organization of the school system. Rather, intact classes were pre-assigned as whole units to either experimental or control condition. Pre-test social competence data were gathered on all participants before intervention. After the intervention phase, same post-test data were gathered to assess changes and assign differences to experimental treatment.

iii. Study's Participants

The participant sample was recruited from a population of 513 girl students studying grades 6 to 8 in the four chosen Islamabad Model Schools for Girls (IMSG) branches. Eligibility criteria were that participants: (1) were female students enrolled at the participating schools on a regular basis, grades 6-8, (2) were free of medical contraindications for participation in moderate physical activity as supported by school health records, (3) received parental permission and gave student assent, and (4) had consistent school attendance throughout the study period. All 513 students were eligible and included in the study. The participant distribution by school and grade is summarized in Table 1.

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TABLE 1: DISTRIBUTION OF STUDY PARTICIPANTS BY SCHOOL AND GRADE

S.No	Area	6th Class	7th Class	8th Class	Total per School
1	Said Pur	40	31	30	**101**
2	NHC	59	51	43	**153**
3	Margalla	46	45	38	**129**
4	Mohra	46	48	36	**130**
	Total per Grade	**191**	**175**	**147**	**513**

A multi-stage sampling method was utilized. The four schools were purposively selected first. Second, within each of the schools, all sections of grades 6, 7, and 8 were enumerated. A random selection from this enumeration resulted in classes being assigned to either the experimental group (EG) or the control group (CG). This ensured that each of the grade levels in each of the schools was sampled in both groups.

iv. Control Group and Experimental Group

The sample of 513 eligible students was randomly assigned into an Experimental Group (EG, n=257) and a Control Group (CG, n=256). The EG enrolled in a specially crafted 12-week Structured Physical Education (SPE) Program specifically aimed at developing social skills through four key elements: (1) cooperative activities demanding joint problem-solving and communication; (2) lessons with specified socio-emotional learning (SEL) goals; (3) facilitated reflective discussions to promote application of skill; and (4) rotating student leadership positions to practice accountability. Conversely, the CG retained their RPE program, which had a traditional emphasis on physical fitness, technical skills drills, and competitive sports with no formal SEL components, yet maintained an equal expenditure of time to account for physical activity exposure.

v. Data Collection Tool

Social competence was measured quantitatively with the Multisource Assessment of Social Competence Scale (MASCS), a highly valid scale by Junttila et al. (2006), chosen for its excellent psychometric qualities and multi-informant design to reduce single-source bias. The scale rates seven discrete dimensions of social competence: Cooperation, Empathy, Impulsivity, Disruptiveness, Independence, Anxiety-Withdrawal, and Sadness. For this research, both the 47-item student self-report and 25-item teacher-report versions were used, employing a 4-point Likert scale from 1 (not at all) to 4 (very well). For cultural and linguistic appropriacy for the Pakistani environment, the tool was subjected to a standardized

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forward-backward translation process into the Urdu language, followed by pilot testing with an independent group of students and teachers to establish conceptual clarity and understanding. Reliability testing done on pre-test measures showed high internal consistency for all subscales, with Cronbach's alpha coefficients greater than the .70 cut-off, ensuring the tool's strength for the current research use.

STATISTICAL ANALYSES

TABLE 1: PRE-TEST DESCRIPTIVE STATISTICS (MEAN ± SD) FOR SOCIAL COMPETENCE DIMENSIONS BY GROUP

Dimension	Experimental Group (EG) (n=257)	Control Group (CG) (n=256)
Cooperation	2.81 ± 0.42	2.79 ± 0.45
Empathy	2.65 ± 0.51	2.62 ± 0.49
Impulsivity	2.12 ± 0.38	2.09 ± 0.41
Disruptiveness	1.98 ± 0.36	2.01 ± 0.39
Independence	2.45 ± 0.43	2.48 ± 0.46
Anxiety-Withdrawal	2.27 ± 0.40	2.25 ± 0.42
Sadness	2.15 ± 0.37	2.18 ± 0.40

TABLE 2: POST-TEST DESCRIPTIVE STATISTICS (MEAN ± SD) FOR SOCIAL COMPETENCE DIMENSIONS BY GROUP

Dimension	Experimental Group (EG) (n=257)	Control Group (CG) (n=256)
Cooperation	3.42 ± 0.38	2.83 ± 0.44
Empathy	3.28 ± 0.45	2.65 ± 0.48
Impulsivity	1.75 ± 0.32	2.08 ± 0.40
Disruptiveness	1.62 ± 0.29	2.00 ± 0.38
Independence	3.15 ± 0.39	2.50 ± 0.45
Anxiety-Withdrawal	1.92 ± 0.35	2.23 ± 0.41

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Dimension	Experimental Group (EG) (n=257)	Control Group (CG) (n=256)
Sadness	1.84 ± 0.31	2.16 ± 0.39

TABLE 3: RESULTS OF SHAPIRO-WILK TEST FOR NORMALITY OF DIFFERENCE SCORES

Dimension	Experimental Group (EG) (W statistic, p-value)	Control Group (CG) (W statistic, p-value)
Cooperation	W = 0.991, p = .218	W = 0.987, p = .152
Empathy	W = 0.986, p = .125	W = 0.983, p = .094
Impulsivity	W = 0.988, p = .173	W = 0.990, p = .201
Disruptiveness	W = 0.985, p = .109	W = 0.988, p = .165
Independence	W = 0.992, p = .235	W = 0.989, p = .186
Anxiety-Withdrawal	W = 0.987, p = .142	W = 0.991, p = .212
Sadness	W = 0.984, p = .097	W = 0.986, p = .135

Note: All p-values > .05, indicating no significant deviations from normality. Data now meets parametric test assumptions for all dimensions in both groups.

TABLE 4: BASELINE EQUIVALENCE TESTS FOR SOCIAL COMPETENCE DIMENSIONS BETWEEN EXPERIMENTAL (EG) AND CONTROL (CG) GROUPS

Dimension	Group	N	Mean	SD	Levene's Test (p-value)	t-test	df	p-value	Cohen's d
Cooperation	EG	257	2.81	0.42	0.636	0.592	511	0.554	0.05
	CG	256	2.79	0.45					
Empathy	EG	257	2.65	0.51	0.741	0.763	511	0.446	0.07
	CG	256	2.62	0.49					
Impulsivity	EG	257	2.12	0.38	0.208	0.943	511	0.346	0.08

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Dimension	Group	N	Mean	SD	Levene's Test (p-value)	t-test	df	p-value	Cohen's d
	CG	256	2.09	0.41					
Disruptiveness	EG	257	1.98	0.36	0.146	-1.019	511	0.309	-0.09
	CG	256	2.01	0.39					
Independence	EG	257	2.45	0.43	0.362	-0.843	511	0.400	-0.07
	CG	256	2.48	0.46					
Anxiety-Withdrawal	EG	257	2.27	0.40	0.530	0.625	511	0.532	0.06
	CG	256	2.25	0.42					
Sadness	EG	257	2.15	0.37	0.168	-1.024	511	0.306	-0.09
	CG	256	2.18	0.40					

Note: All Levene's test p-values > .05, indicating equal variances assumed for all t-tests. All t-test p-values > .05 and Cohen's d values < |0.10|, confirming no statistically significant or practically meaningful differences between groups at baseline. Baseline equivalence is established for all seven dimensions.

TABLE 5: MIXED ANOVA RESULTS FOR GROUP × TIME INTERACTION EFFECTS

Dimension	Group × Time Interaction			Effect Size
	F(1, 511)	P	η^2p	
Cooperation	185.32	<.001	0.266	Large
Empathy	162.75	<.001	0.242	Large
Impulsivity	135.44	<.001	0.210	Large
Disruptiveness	128.96	<.001	0.202	Large

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Dimension	Group × Time Interaction			Effect Size
Independence	174.18	<.001	0.254	Large
Anxiety-Withdrawal	121.53	<.001	0.192	Large
Sadness	118.67	<.001	0.188	Large

TABLE 6: WITHIN-GROUP CHANGES FROM PRE-TEST TO POST-TEST

2.65	0.03	Pre-test M	Post-test M	Mean Difference	T	p	Cohen's d
Cooperation	EG	2.81	3.42	0.61	25.14	<.001	1.57
	CG	2.79	2.83	0.04	1.89	.060	0.09
Empathy	EG	2.65	3.28	0.63	22.87	<.001	1.43
	CG	2.62			1.53	.127	0.06
Impulsivity	EG	2.12	1.75	-0.37	-19.75	<.001	1.23
	CG	2.09	2.08	-0.01	-0.49	.623	0.03
Disruptiveness	EG	1.98	1.62	-0.36	-20.11	<.001	1.25
	CG	2.01	2.00	-0.01	-1.28	.202	0.04
Independence	EG	2.45	3.15	0.70	23.94	<.001	1.50
	CG	2.48	2.50	0.02	0.87	.387	0.04
Anxiety-Withdrawal	EG	2.27	1.92	-0.35	-19.22	<.001	1.20
	CG	2.25	2.23	-0.02	-0.95	.341	0.05
Sadness	EG	2.15	1.84	-0.31	-18.64	<.001	1.16

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2.65	0.03	**Pre-test M**	**Post-test M**	**Mean Difference**	**T**	**p**	**Cohen's d**
	CG	2.18	2.16	-0.02	-1.00	.317	0.05

TABLE 7: PAIRED SAMPLES T-TEST RESULTS FOR EXPERIMENTAL GROUP (EG) PRE-POST INTERVENTION (N = 257)

Dimension	**Pre-test M (SD)**	**Post-test M (SD)**	**Mean Difference**	**t(256)**	**p-value**	**Cohen's d**
Cooperation	2.81 (0.42)	3.42 (0.38)	0.61	25.14	<.001	1.57
Empathy	2.65 (0.51)	3.28 (0.45)	0.63	22.87	<.001	1.43
Impulsivity	2.12 (0.38)	1.75 (0.32)	-0.37	-19.75	<.001	1.23
Disruptiveness	1.98 (0.36)	1.62 (0.29)	-0.36	-20.11	<.001	1.25
Independence	2.45 (0.43)	3.15 (0.39)	0.70	23.94	<.001	1.50
Anxiety-Withdrawal	2.27 (0.40)	1.92 (0.35)	-0.35	-19.22	<.001	1.20
Sadness	2.15 (0.37)	1.84 (0.31)	-0.31	-18.64	<.001	1.16

Note: All p-values remain significant after Bonferroni correction (adjusted α = .007). Cohen's d effect sizes are large (all > 1.16) for all dimensions.

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TABLE 8: PAIRED SAMPLES T-TEST RESULTS FOR CONTROL GROUP (CG) PRE-POST INTERVENTION (N = 256)

Dimension	Pre-test M (SD)	Post-test M (SD)	Mean Difference	t(255)	p-value	Cohen's d
Cooperation	2.79 (0.45)	2.83 (0.44)	0.04	1.89	.060	0.09
Empathy	2.62 (0.49)	2.65 (0.48)	0.03	1.53	.127	0.06
Impulsivity	2.09 (0.41)	2.08 (0.40)	-0.01	-0.49	.623	0.03
Disruptiveness	2.01 (0.39)	2.00 (0.38)	-0.01	-1.28	.202	0.04
Independence	2.48 (0.46)	2.50 (0.45)	0.02	0.87	.387	0.04
Anxiety-Withdrawal	2.25 (0.42)	2.23 (0.41)	-0.02	-0.95	.341	0.05
Sadness	2.18 (0.40)	2.16 (0.39)	-0.02	-1.00	.317	0.05

Note: All p-values > .05, indicating no statistically significant changes in any social competence dimension. Cohen's d effect sizes are negligible (all < 0.10).

RESULTS

Table 1: Baseline scores were very similar for social competence levels between EG (n=257) and CG (n=256) on all seven dimensions, verifying initial group equivalence.

Table 2: Post-intervention, EG had significantly enhanced prosocial behavior and lower negative dimensions, with CG retaining near-baseline on all measures.

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Table 3: Normality testing verified parametric assumptions held for all difference scores (all $p > .05$), confirming subsequent ANOVA analyses.

Table 4: Formal equivalence testing verified no significant baseline differences among groups (all $p > .05$, $|d| < 0.10$), establishing comparability of pretreatment.

Table 5: Mixed ANOVA identified significant Group × Time interactions (all $p < .001$) with large effect sizes ($\eta^2p = .188$-$.266$), showing differential improvement in favor of EG.

Table 6: Within-group comparisons revealed EG made large, significant gains (all $p < .001$, $d > 1.16$) while CG made very small changes (all $p > .05$, $d < 0.09$).
Table 7: Paired t-tests verified significant pre-post gains for EG on all dimensions (all $p < .001$) with large effect sizes ($d = 1.16$-1.57).

Table 8: Control group did not differ significantly from pre to post test (all $p > .05$), with effect sizes being trivial ($d < 0.10$) on all aspects.

DISCUSSION

The main goal of the present study was to analyze the impact of a Structured Physical Education (SPE) program on early adolescent Pakistani girls' social competence. The findings present strong support that the intervention was quite effective. The large Group × Time interactions across all seven social competence dimensions, and then the within-group analyses, statistically confirm that Experimental Group (EG) participants showed large gains on prosocial skills (Cooperation, Empathy, Independence) and large declines in difficult behavior and emotions (Impulsivity, Disruptiveness, Anxiety-Withdrawal, Sadness), and the Control Group (CG) did not change. This conversation explains these results, places them within the current scholarly and theoretical literature, and considers their wider implications.

The results strongly verify that an effectively designed SPE program can be an effective vehicle for socio-emotional learning (SEL), significantly outperforming the effects of a conventional, skills-based PE curriculum. The significant effect sizes (Cohen's $d > 1.16$ for all EG changes) are especially impressive, implying the intervention effect was not only statistically meaningful but also educationally and psychologically significant.

The general implication is that PE needs to be reconceptualized within the national curriculum as a pedagogical core rather than simply a recreational interlude for integrated student development. This is particularly important in environments such as Pakistan, where intentional SEL instruction is not incorporated into the standard academic curriculum. The SPE program effectively established a "laboratory for life skills," where students applied cooperation, negotiation, and leadership in a dynamic, realistic setting. Applying these skills from the gymnasium to larger school and social life could potentially translate to enhanced classroom climate, decreased bullying, and overall student well-being, goals consistent with national health promotion and positive youth development efforts.

The findings of this study highly corroborate and build on the current

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international literature. Our results are consistent with the findings of Bailey (2006), who ascertained effective and social development as central advantages of quality PE. More precisely, the efficacy of the role-taking and cooperative learning elements of our intervention has direct support for Sánchez-Hernández et al. (2018) and Dyson et al. (2021), who established through experimentation that curricular models promoting interdependence and shared accountability are effective in improving social competencies.

But this research goes beyond previous work in showing that these recorded advantages can be replicated and with significant impact within the socioeconomic and cultural limitations of an emerging nation. While research such as Whitley et al. (2021) centered on disadvantaged young people in Western settings, the problems of lack of resources, poor teacher training, and cultural issues in Khyber Pakhtunkhwa (Khan & Khan, 2020; Ahmad et al., 2019) reflect a very different range of challenges. The success of the SPE program to be implemented and return such encouraging results in this setting is a valuable addition to the literature. It implies that the fundamental active components of effective SEL-through-PE interventions (cooperation, reflection, clear goals) are universally effective, although the exact activities must be contextually adapted.

The results are strongly supported by the theoretical model presented in the literature review. The substantial gains in social competence can be explained in terms of Vygotsky's (1978) social development theory. The organized PE setting served as a "zone of proximal development," in which peers and teachers offered scaffolding to students to acquire and rehearse novel social skills, like supporting a teammate or cooling off a conflict, that they absorbed. In addition, Bandura's (1977) social learning theory is at work: the teachers openly modeled positive behaviors such as equitable play and respectful communication, and students acquired knowledge through observation and emulation, augmenting the direct teaching goals of each lesson.

The sample demographics—early adolescent girls are key to understanding the results. This stage of development is characterized by decreased self-esteem and physical activity for girls (Slater & Tiggemann, 2010). The SPE program, through its focus on mastery and cooperation rather than comparison and competition, would have created a safe psychological environment that reduced these pressures. The program's dramatic decreases in Anxiety-Withdrawal and Sadness in the EG indicate that it possibly enhanced psychological resilience and social connectedness, which are essential for this population.

One interesting point is that each of the seven dimensions shows equal significance. It may be surprising that physical activity intervention had such significant effects on internalizing states of sadness and anxiety. But this can be attributed to what has been previously shown in the literature on the psychological advantages of group-based physical activity. The program was probably augmenting feelings of social connection and peer support, which have been shown to be buffers against negative emotional states (Whitley et al., 2021). Decreased impulsiveness and disruptiveness can also be attributed to the program structure, which gave orderly rules, structured routines, and proper channels to release energy, thereby enhancing self-regulation.

The total absence of change in the CG further supports the validity of the argument. It verifies that the advances in the EG were not an effect of natural

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maturation, school-wide programs, or mere passage of time. It also underscores the inadequacy of the conventional, unstructured PE program in yielding any serious SEL benefits, emphasizing the imperative for reform.

In summary, the present research establishes strong, evidence-based justification for incorporating systematic, SEL-targeted physical education into the Pakistani educational system, but especially in the case of adolescent girls. It demonstrates that even in resource-scarce settings, a thoughtful PE program can break out of its historically limited scope to become a life-altering intervention for social and emotional growth. The results urge policy reforms that require teacher training in SEL-infused PE approaches and on curriculum developers to transcend a strict physical fitness model. Future studies must examine the long-term sustainability of these gains as well as the potential for scaling this model across Pakistan's diverse regions.

CONCLUSION

This research aimed to test whether a Structured Physical Education (SPE) program would be able to increase the social competence of early adolescent girls in Islamabad, Pakistan. The results give a definitive and affirmative response. The robust quantitative assessment showed statistically significant and substantial gains in all seven observed areas of social competence Cooperation, Empathy, Impulsivity, Disruptiveness, Independence, Anxiety-Withdrawal, and Sadness for the Experimental Group that underwent the 12-week intervention. In sharp contrast, the Control Group that persisted with the normal physical education curriculum did not exhibit any significant change. These findings, marked by large effect sizes, illustrate not only that the advantages of the SPE program were significant in amplitude but also that they were practically effective.

The effectiveness of this intervention has significant implications for Pakistani educational policy and practice. It refutes the dominant conception of physical education as a fringe subject that is concerned only with physical fitness or sport. Rather, it situates a well-crafted PE program as a robust, legitimate, and effective means of providing vital socio-emotional learning (SEL) in the national curriculum. This is most important for adolescent girls, who must contend with special social and emotional issues during this formative stage of development. The success of the program within a resource-scarce setting demonstrates how through concerted teacher education and pedagogical change, considerable improvement in student well-being can be made without the need for large-scale infrastructure.

Thus, this research decisively recommends a systemic overhaul of physical education in Pakistan's schools, prompting three specific actions: first, a countrywide curriculum overhaul that expressly incorporates Social and Emotional Learning (SEL) goals like cooperation, empathy, and conflict resolution into the physical education curriculum, superseding narrow sports-centered teaching; second, significant investment in dedicated professional development initiatives to prepare teachers with evidence-based methods for promoting SEL through organized, cooperative physical activity; and third, tangible policy steps to bring educational directives into synch with current national health and sports agendas, ensuring physical education as a vital aspect of overall student development instead of a sideline activity. These steps are vital

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to bridge the proved advantages of structured PE into scalable, enduring enhancements of students' social skills and overall well-being.

With such a structured approach, physical education can finally be a cornerstone of balanced education, not just fostering healthier bodies but also developing the empathetic, cooperative, and resilient citizens needed for the future of Pakistan.

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CONFLICT OF INTEREST

The authors report no conflict of interest. The funding sponsors participated in no aspect of the study design; in data collection, analyses, or interpretation; in the writing of the manuscript; and in the decision to publish the findings.

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