

A Comparative Study on Attitude towards Physical Education Programme between Urban and Rural Higher Secondary Girls and Boys

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Abstract: *Physical education (PE) is central to the holistic development of school-going adolescents, yet the attitude that students carry toward the PE programme appears to vary with two everyday facts about them: where they live, and whether they are a boy or a girl. This paper brings together, in a single comparative review, the empirical evidence on higher secondary and secondary-school students' attitude towards physical education across the urban-rural divide and across gender. Peer-reviewed quantitative studies that used standardized attitude instruments — including Raut's Attitude Opinionnaire, Edgington's High School Attitude Scale, and the Physical Activity Attitude Scale, among others — were located, and their reported means, standard deviations and significance tests were tabulated for direct comparison. Across the studies reviewed, students attending urban schools consistently reported a more favourable attitude towards physical education than their rural counterparts, and in most, though not all, of the reviewed samples, boys reported a somewhat more favourable attitude than girls. Very few existing studies, however, examine locality and gender together for the higher secondary stage specifically, and the paper closes by setting out what a dedicated primary study covering both variables would need to look like, along with implications for curriculum planning, teacher deployment and rural and girls' sports infrastructure in Indian schools.*

Keywords: Attitude, Gender Differences, Higher Secondary Students, Physical Education, Urban-Rural Comparison.

I. INTRODUCTION

Physical education occupies a curious place in most Indian school timetables: everyone agrees, at least on paper, that it matters for a child's physical, social and emotional growth, yet it is still the period most easily cancelled when the syllabus runs behind. Whether that period is used well or wasted depends a great deal on how the students themselves feel about it. Psychologists describe attitude as a relatively stable evaluative disposition — favourable or unfavourable — toward an object, built up from a person's beliefs and past experiences with that object [8]. Applied to physical education, a student's attitude is essentially the accumulated residue of every PE class, sports day, gym teacher and playground experience they have had, and it goes on to shape how willingly they take part in the subject and in physical activity more generally.

In the Indian policy context, the National Education Policy, 2020 explicitly moves sport and physical activity away from being a co-curricular afterthought and treats it as one of the core interest areas a school should offer [9]. Translating that intent into practice, however, depends on local conditions — the playground a school has (or does not



have), whether a trained PE teacher is posted there, and the social expectations parents and communities carry about who is supposed to play sport and who is not.

Two of those local conditions recur constantly in the physical-education literature: whether the school is in a town or a village, and whether the student is a boy or a girl. The Census of India defines an urban area as a place with a municipal body, or — failing that — a settlement with a

minimum population of 5,000, a density of at least 400 persons per square kilometre, and at least 75 per cent of its male working population engaged in non-agricultural work; everything outside this definition is classified as rural [10]. As of the 2011 Census, roughly 31 per cent of India's population lived in areas meeting this urban threshold, meaning nearly seven in ten Indian students still attend school in a rural setting where sports infrastructure and trained staff are typically thinner on the ground. Gender, the second recurring variable, interacts with this: in many communities, cultural expectations about modesty, mobility and "appropriate" activity for girls continue to shape whether girls are encouraged onto the field as readily as boys, quite apart from what facilities exist.

A fair amount of research has looked at one or the other of these two variables — urban versus rural attitude, or boys' versus girls' attitude — but, as the review in the next section shows, very few studies have looked at both together for students specifically at the higher secondary stage, when attitudes are largely settled and participation habits for adulthood are being formed. This paper does not report a new primary survey; instead, it draws together the existing, verifiable quantitative evidence on both fronts, compares it side by side, and identifies exactly where the gap in the literature lies.

II. REVIEW OF LITERATURE

Debbarma and Devi [1] studied the attitude of 140 higher secondary girls (70 urban, 70 rural) drawn from three districts of Tripura, using Raut's Attitude Opinionnaire (2007) scored on a 65–390 range. The urban girls recorded a mean attitude score of 271.54 (SD = 25.30) against 257.56 (SD = 27.72) for rural girls; the calculated t-value of 3.118 (df = 138) exceeded the tabulated value at the .05 level, so the difference was treated as statistically significant, with the authors attributing the rural shortfall to weaker school infrastructure, lower awareness among students and parents, and limited encouragement from teachers.

Working with boys rather than girls, Dubey [2] compared 100 high-school boys around Lucknow (50 from urban schools, 50 from rural schools, average age 15) using Edgington's High School Attitude Scale. The urban boys' mean attitude score was found to be significantly higher than that of the rural boys at the .05 level of confidence, mirroring the pattern later found among girls in Tripura, even though the two studies used different instruments, states and age-matched but single-sex samples.

Marennavar and Amarnath [3] surveyed 600 engineering college students across Karnataka with a locally developed 56-item Attitude Scale towards Physical Education Programs (2024). Although the sample is of college rather than higher-secondary age, the study is one of the few to test gender and locality within one dataset using a single instrument. Male students (n = 408) scored 171.36 (SD = 16.07) against 163.40 (SD = 19.43) for female students (n = 192), a difference significant at the .01 level (t = 4.94); urban students (n = 418) scored 170.04 (SD = 15.85) against 165.98 (SD = 20.85) for rural students (n = 182), significant at the .05 level (t = 2.35). Notably, in this sample the gender gap was numerically larger and more strongly significant than the locality gap.

Patra [4] examined 200 college students aged 19–24 using the Physical Activity Attitude Scale developed by Thakur and Thakur (1978), analysed by two-way ANOVA against gender and caste. Boys recorded a mean of 287.65 against 268.12 for girls, with the gender main effect (F = 24.12) significant at the .05 level; the gender-by-caste interaction was also significant, suggesting the size of the gender gap itself varied across social groups rather than being a fixed quantity.

Not every study, however, finds a gender gap. Desai [5] sampled 273 secondary-school pupils aged 14–17 in Uttar Pradesh (175 boys, 98 girls) using the Attitudes toward Physical Education Scale, and reported means of 94.12 (SD = 8.87) for boys and 95.21 (SD = 10.61) for girls — girls scored marginally higher, but ANOVA found the difference not



statistically significant. The same dataset, however, did find a significant urban-rural difference, with urban pupils scoring higher regardless of sex, echoing [1] and [2] once again.

Outside India, comparable patterns appear. Lincoqueo-Huentecura et al. [6] surveyed 320 Chilean high-school students (65% boys, 35% girls, mean age 15.5) using the Attitudes Towards Physical Education Questionnaire (CAEF) alongside a physical-activity-level measure. Boys scored 2.79 (SD = 0.24) against 2.64 (SD = 0.26) for girls, a significant difference that tracked a parallel, larger gap in measured physical-activity level; attitude and activity level correlated at $r = 0.42$. In Poland, Madejski, Jaros and Madejski [7] surveyed 238 secondary students (135 boys, 103 girls) with Strzyżewski's youth-attitude questionnaire and found boys reported enjoying PE exercise, and wanting ball games specifically, more often than girls did — a descriptive rather than inferential result, but pointing the same way as the quantitative studies above.

Taken together, this body of work is reasonably consistent on the locality question — urban students, boy or girl, tend to report a more favourable attitude than rural students — but noticeably less consistent on the gender question, where a male advantage shows up in most, but not all, of the samples reviewed. What is missing across all seven studies is a single dataset that cross-tabulates both variables for higher secondary boys and girls together; the closest any study comes is Marennavar and Amarnath's engineering-college sample [3], which is a different life stage entirely. That gap frames the rest of this paper.

III. STATEMENT OF THE PROBLEM

“A Comparative Study on Attitude towards Physical Education Programme between Urban and Rural Higher Secondary Girls and Boys.” The problem, framed after the review above, is twofold: first, to establish from existing verified research whether higher secondary students' attitude towards physical education differs by locality and by gender considered separately; and second, to identify how far the existing literature allows these two variables to be considered jointly, given that no single reviewed study measures both together at the higher secondary stage.

IV. OBJECTIVES OF THE STUDY

1. To review and compare, from existing published research, the attitude of higher secondary students towards the physical education programme in urban and rural settings.
2. To review and compare, from existing published research, the attitude of higher secondary boys and girls towards the physical education programme.
3. To examine whether the urban-rural difference and the boy-girl difference reported in the literature appear to operate independently, and to identify the gap that remains for future primary research.
4. To draw educational implications for curriculum planning, teacher deployment and sports infrastructure from the synthesised evidence.

V. METHODOLOGY

Research design

This paper is a descriptive-analytical review, not a fresh field survey. No new questionnaire was administered and no new students were sampled; the contribution lies in locating, extracting and comparing quantitative results that other researchers have already published and made available.

Sources of data

Peer-reviewed journal articles, mainly published between 2018 and 2025, were located through open-access academic databases and journal repositories, including the Journal of Human Sport and Exercise, the European Journal of Physical Education and Sport Science (via Zenodo), the Journal of Emerging Technologies and Innovative Research, the International Journal of Physiology, Nutrition and Physical Education, the Journal of Advances and Scholarly Researches in Allied Education, and comparable international physical-education-research outlets.



Inclusion criteria

A study was included in the comparative tables (Section VI) if it: (a) used a named, standardized attitude-towards-physical-education/physical-activity instrument; (b) drew its sample from school- or college-going students; and (c) reported results broken down by locality (urban/rural) and/or by gender (boy/girl), together with a statistical test of the difference. Studies that discussed attitude only in general terms, without a locality or gender breakdown, were used for background in Section I but excluded from the tables.

Data extraction and honest limits of the method

For every included study, the sample size, instrument, mean, standard deviation and test statistic reported in the original tables or abstract were transcribed as published; none of these figures were estimated or reconstructed. Because the reviewed studies differ in country, age band (14 to 24 years) and instrument — each with its own scoring range — the raw means cannot simply be pooled into one combined statistic. The comparison in Section VI is therefore made at the level of the direction and statistical significance of each effect, not its raw magnitude, and this is stated here as a limitation rather than glossed over.

VI. RESULTS: COMPARATIVE ANALYSIS

Tables 1 and 2 place the locality-based and gender-based findings from Section II side by side so the two patterns can be read against each other directly.

TABLE I

Studies Comparing Higher Secondary / Secondary and College Students' Attitude Towards Physical Education, by Locality

Study	Sample	Instrument	Urban Mean $\pm$ SD (n)	Rural Mean $\pm$ SD (n)	Test Statistic	Result
Debbarma & Devi [1]	140 higher secondary girls, Tripura	Raut's Attitude Opinionnaire	271.54 $\pm$ 25.30 (70)	257.56 $\pm$ 27.72 (70)	t(138)=3.118, p<.05	Urban significantly higher
Dubey [2]	100 high-school boys, Lucknow region	Edgington High School Attitude Scale	Higher (n=50) (exact M/SD not reported in source)	Lower (n=50)	t, p<.05	Urban significantly higher
Marennavar & Amarnath [3]	600 engineering college students, Karnataka	ATPEP Scale (2024)	170.04 $\pm$ 15.85 (418)	165.98 $\pm$ 20.85 (182)	t=2.35, p<.05	Urban significantly higher
Desai [5]	273 secondary students, Uttar Pradesh	Attitudes toward PE Scale	Higher (locality M not disaggregated by sex in source)	Lower	Significant (ANOVA)	Urban significantly higher

Note. M = mean; SD = standard deviation; n = sample size. Significance levels as reported in the original source.

TABLE II

Studies Comparing Students' Attitude Towards Physical Education, by Gender

Study	Sample	Instrument	Boys Mean $\pm$ SD (n)	Girls Mean $\pm$ SD (n)	Test Statistic	Result
Marennavar & Amarnath [3]	600 engineering	ATPEP Scale (2024)	171.36 $\pm$ 16.07 (408)	163.40 $\pm$ 19.43 (192)	t=4.94, p<.01	Boys significantly



Study	Sample	Instrument	Boys Mean $\pm$ SD (n)	Girls Mean $\pm$ SD (n)	Test Statistic	Result
	college students, Karnataka					higher
Patra [4]	200 college students, Maharashtra	Physical Activity Attitude Scale	287.65	268.12	F=24.12, p<.05	Boys significantly higher
Desai [5]	273 secondary students, Uttar Pradesh	Attitudes toward PE Scale	94.12 $\pm$ 8.87 (175)	95.21 $\pm$ 10.61 (98)	Not significant	No significant gender gap
Lincoqueo-Huentecura et al. [6]	320 high-school students, Chile	CAEF Questionnaire	2.79 $\pm$ 0.24	2.64 $\pm$ 0.26	Significant, p<.05	Boys significantly higher
Madejski et al. [7]	238 secondary students, Poland	Strzyżewski Youth Attitude Questionnaire	Higher reported enjoyment	Lower reported enjoyment	Descriptive (%)	Boys more favourable

Note. Values are as reported in the original source; where an exact mean/SD was not published in the available abstract, this is stated explicitly rather than estimated.

Two patterns stand out. On locality, every one of the four tabulated studies — spanning Tripura, the Lucknow region, Karnataka and Uttar Pradesh, and using three different instruments — finds urban students reporting a significantly more favourable attitude than rural students. That consistency across very different regions and scales is itself notable evidence that the urban-rural gap is a real and fairly general phenomenon in Indian school and college populations, not an artefact of any one instrument or sample.

On gender, the picture is less uniform. Four of the five tabulated studies — including both Indian and non-Indian samples — find boys reporting a significantly more favourable attitude than girls, sometimes by a wide statistical margin (Marennavar & Amarnath [3]; Patra [4]). Desai's Uttar Pradesh sample [5] is the exception, finding no significant gender difference at the secondary stage, with girls even scoring marginally (if not significantly) higher on the mean. The gender gap, in other words, shows up often but is evidently more sensitive to the particular sample, region or instrument used than the locality gap is.

A further point is worth stating plainly: no study located in this review measured urban girls, rural girls, urban boys and rural boys together, at the higher secondary stage, on one common instrument. Marennavar and Amarnath [3] come closest but at the undergraduate engineering-college stage rather than higher secondary. This four-cell comparison — locality crossed with gender, for higher secondary students specifically — is therefore identified here as the clearest open task for future primary research, rather than something this review can settle from existing data alone.

VII. DISCUSSION

The urban advantage reported so consistently across studies [1], [2], [3], [5] is generally explained by the authors themselves in similar terms: better playgrounds and sports equipment, a higher likelihood of a permanently posted, trained PE teacher, and greater day-to-day exposure to organised sport and sporting role models in towns and cities. Debbarma and Devi [1] add that a lack of awareness among rural students, parents and even teachers about the value of physical education compounds the infrastructure gap, so the deficit is partly about facilities and partly about how the subject is perceived in the first place.

Where a gender gap is found, the reviewed authors point to broadly sociocultural explanations rather than any difference in physical capacity: unequal encouragement from family and school toward girls' participation in sport, greater restrictions on girls' mobility and dress in more conservative settings, and fewer visible female role models in



competitive sport [3], [4], [6], [7]. Marennavar and Amarnath [3] tie this to a related finding in their own data — that students who had participated in competitive sport, regardless of sex, showed a significantly more favourable attitude than non-participants — implying that unequal access to competitive opportunity, rather than gender itself, may be doing much of the causal work.

Desai's null gender finding [5] deserves a cautious rather than dismissive reading. One plausible explanation is that the instrument used there — the Attitudes toward Physical Education Scale — measures a fairly general orientation toward the subject of physical education as part of the school curriculum, whereas scales like the Physical Activity Attitude Scale used by Patra [4] lean more toward attitude to physical activity and competitive participation specifically. If that distinction holds, general subject-level attitude may simply be less gender-differentiated than activity- or participation-specific attitude — but this is offered here as one reasonable interpretation of the pattern across studies, not as an established fact, since no single study directly tested that hypothesis.

VIII. EDUCATIONAL IMPLICATIONS

1. Rural schools need sustained investment in playgrounds, sports equipment and, particularly, permanently appointed, trained physical education teachers rather than periods covered ad hoc by other staff [1], [2].
2. Because attitude tracks competitive-sport participation closely [3], widening access to inter-school and inter-village competitions — especially for rural schools and for girls — is likely to move both the locality gap and the gender gap at the same time, rather than requiring two separate interventions.
3. Parent- and community-awareness programmes about the value of physical education, of the kind recommended by Debbarma and Devi [1], are particularly relevant in rural and conservative settings where girls' participation is most likely to be discouraged.
4. Teacher-training programmes should explicitly build skills for engaging groups that current evidence shows are less favourably disposed toward the subject — chiefly rural students and, in many though not all contexts, girls — rather than assuming a single teaching approach will suit all students equally [3].

IX. LIMITATIONS AND SCOPE FOR FURTHER RESEARCH

This review is bounded by the same limits as any secondary synthesis. The instruments compared here (Raut's Opinionnaire, Edgington's Scale, the ATPEP Scale, the Physical Activity Attitude Scale, CAEF, and Strzyżewski's questionnaire) use different items and scoring ranges, so raw mean scores are comparable only in direction, not in magnitude, across studies. The age range covered spans secondary school through undergraduate college (roughly 14 to 24 years), and only one of the reviewed quantitative studies is set at the undergraduate stage [3] rather than school; where that study is used to illustrate the joint effect of locality and gender, this age difference should be kept in mind. The Indian studies reviewed are also geographically limited to Tripura, the Lucknow region of Uttar Pradesh, and Karnataka, so conclusions about India as a whole should be drawn cautiously.

The clearest next step, flagged already in Section VI, is a fresh primary survey that samples higher secondary boys and girls from both urban and rural schools on a single validated attitude scale, allowing locality and gender to be tested together — including their interaction — in one dataset, in the way Debbarma and Devi [1] themselves suggest as a direction for follow-up work.

X. CONCLUSION

Read together, the studies reviewed here point to a fairly clear and consistent conclusion on locality: higher secondary and secondary-school students attending urban schools report a more favourable attitude towards the physical education programme than their rural counterparts, across every state and instrument examined. The picture on gender is real but less uniform — boys report a more favourable attitude than girls in most, though not all, of the reviewed samples, and the size of that gap appears to depend on the specific instrument, sample and context. Because no existing study measures both variables together for higher secondary boys and girls in one dataset, this remains an open question



rather than a settled one, and is put forward here as the natural next piece of primary research. In the meantime, the practical implication for Indian schools is straightforward: closing the urban-rural infrastructure and teacher-availability gap, and actively widening girls' access to competitive sport, are two distinct but complementary levers for raising students' attitude toward — and, through it, participation in — physical education.

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