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Original Research Article

Coaching Problems in Long-Distance Track Events in Bangladesh: A Convergent Mixed-Methods Study of National-Level Athletes, Coaches and Athletics Officials

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Abstract

Background: Performance in long-distance running depends on scientifically planned training delivered within a supportive coaching and organisational system, yet evidence on how such systems operate in South Asian countries is scarce. ***Objective:*** To identify coaching-related problems affecting national-level long-distance track athletes in Bangladesh, as perceived by athletes, coaches and athletics officials, and to derive evidence-informed remedies. ***Methods:*** A cross-sectional convergent mixed-methods design was used. Thirty long-distance athletes (3000 m to 10,000 m) completed a structured questionnaire, ten long-distance coaches completed a parallel questionnaire, and ten officials of the Bangladesh Athletics Federation and affiliated clubs were interviewed. Four training sessions and the associated facilities were observed with a checklist. Proportions are reported with 95% Wilson confidence intervals (CI); open-ended data were summarised descriptively and integrated with the quantitative results. ***Results:*** All athletes were coached exclusively by men. Although 80.0% (95% CI 62.7–90.5) trusted their coach's ability, only 10.0% (3.5–25.6) had taken part in planning their own training and only 10.0% (3.5–25.6) had undergone any entry test. Most athletes perceived poor coordination between coaches and administrators (86.7%, 70.3–94.7), and 73.3% (55.6–85.8) intended to move to another discipline. Economic reward was the most common motive for choosing a long-distance event (18 of 27 respondents, 66.7%). Among coaches, six of ten held only a diploma, nine planned training alone, and eight reported that club officers recruited athletes, mainly on the basis of competition results. None of the observed sessions was guided by a written training plan, and facilities, equipment and accommodation were predominantly rated poor. ***Conclusion:*** Coaching problems in Bangladeshi long-distance running are systemic rather than individual, spanning coach education, talent identification, athlete involvement, facilities and inter-organisational coordination. Coordinated reforms across these domains, rather than isolated interventions, are required.

Keywords: Athletics, Coach Education, Distance Running, Talent Identification, Sport Policy, Bangladesh.

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1. INTRODUCTION

Long-distance track events, from 3000 m to 10,000 m, are among the most physiologically demanding disciplines in athletics. Performance in these events is governed chiefly by maximal oxygen uptake, the fraction of that capacity that can be sustained (the lactate threshold) and running economy (Bassett & Howley, 2000; Joyner & Coyle, 2008). Each of these determinants is trainable, but only through years of high-volume, carefully periodised work in which most running is performed at low intensity and a smaller, precisely dosed fraction is performed at or above race pace (Seiler, 2010; Haugen *et al.,* 2022). Heavy and explosive strength training further improves running economy (Rønnestad & Mujika, 2014), and adequate energy and nutrient intake underpins the ability to tolerate and adapt to such loads (Thomas *et al.,* 2016). Converting this body of knowledge into results is therefore not a matter of effort alone: it depends on coaches who can design, monitor and individualise training, and on organisations that provide the facilities, support and competition that such training requires.

Coaching scholarship has moved from describing coach behaviour towards understanding coaching as a complex, context-dependent process (Lyle, 2002). Côté and Gilbert (2009) define coaching effectiveness as the consistent application of integrated professional, interpersonal and intrapersonal knowledge to improve athletes' competence, confidence, connection and character in a specific coaching context. Interpersonal knowledge is central to this definition. Within self-determination theory, autonomy-supportive coaching, in which athletes are offered choice, a rationale for tasks and opportunities for input, fosters self-determined motivation and persistence (Ryan & Deci, 2000; Mageau & Vallerand, 2003; Amorose & Anderson-Butcher, 2007). Professional knowledge, in turn, is acquired through a mixture of formal coach education and experiential learning; formal programmes that do not connect with coaches' practical experience have repeatedly been found to have limited impact on practice (Cushion *et al.,* 2003; Mallett *et al.,* 2009).

Coaches, however, do not operate in isolation. The Sports Policy factors Leading to International Sporting Success (SPLISS) model identifies nine policy "pillars" that shape elite outcomes, including financial support, talent identification and development, athletic and post-career support, training facilities, coaching provision and coach development, and national and international competition (De Bosscher *et al.,* 2006). (Zahan, 2026b) Talent identification is a particularly contested pillar. Traditional approaches that select athletes on the basis of one-off performance or physical appearance have weak predictive validity, and reviewers have instead recommended multidimensional, longitudinal and development-oriented systems (Abbott & Collins, 2004; Vaeyens *et al.,* 2008; Johnston *et al.,* 2018; Till & Baker, 2020). (Hossain *et al.,* 2026) The global dominance of East African distance runners illustrates how environment, training culture and socio-economic motivation interact with physiological endowment to produce elite performance (Wilber & Pitsiladis, 2012; Tucker *et al.,* 2015).

Despite this rich literature, the evidence base is geographically narrow. A comprehensive analysis of coaching science research found that published studies concentrated on team sports and on school and collegiate settings in high-income countries (Gilbert & Trudel, 2004). Systematic evidence on how coaching systems function for endurance athletes in lower-resource settings in South Asia appears to be very limited, and studies that combine the perspectives of athletes, coaches and administrators with direct observation of training are rarer still. Bangladesh has a national athletics federation, a national sports institute and service-based athletics teams, yet the specific coaching problems faced by its national-level long-distance runners have not, to the author's knowledge, been documented in the peer-reviewed literature. Without such evidence, federations and clubs lack a basis on which to prioritise reforms.

The present study therefore aimed to identify the coaching-related problems affecting national-level long-distance track athletes in Bangladesh and to derive remedies grounded in the experiences of the people within the system. Using the SPLISS model as a sensitising framework, the study addressed four research questions: (RQ1) How do athletes perceive their coaching, training environment, involvement in planning and pathway into long-distance events? (RQ2) What are coaches' qualifications and planning practices, and how do they perceive organisational support and athlete recruitment? (RQ3) What systemic problems and solutions do athletics officials identify? (RQ4) To what extent do these perspectives converge, and what does direct observation of training and facilities add?

2. METHODS

2.1 Study Design

A cross-sectional, convergent parallel mixed-methods design was used (Creswell & Plano Clark, 2018). Quantitative data (closed questionnaire items) and qualitative data (open-ended questionnaire items, semi-structured interviews and structured field observation) were collected in the same period, analysed separately and integrated at the interpretation stage. The descriptive design was chosen because the aim was to document the current state of coaching practice rather than to test an intervention. Reporting of the quantitative strand follows the STROBE statement for cross-sectional studies (von Elm *et al.,* 2007), and the relevant items of the COREQ checklist (Tong *et al.,* 2007) guided reporting of the qualitative strand.

2.2 Setting and participants

The study was conducted within Bangladesh's national-level athletics system. Participating teams were selected purposively to represent the main institutional settings in which national-level long-distance runners train: national team squads, Bangladesh Krira Shikkha Protishtan (BKSP, the national sports institute), the Bangladesh Army, the Bangladesh Navy, the Bangladesh Jute Mills Corporation (BJMC) athletics club, several divisional and district athletics teams, and university athletics teams. The target population comprised athletes competing at national level in the 3000 m, 5000 m and 10,000 m, the coaches responsible for these events, and officials of the Bangladesh Athletics Federation (BAF) and affiliated clubs.

Three participant groups were recruited. Thirty long-distance athletes were selected by simple random sampling from the long-distance runners of the participating teams. Ten long-distance coaches and ten athletics officials were selected purposively because their roles gave them direct knowledge of coaching, administration and athlete management. Because no complete register of national-level long-distance runners was available, the athlete sample cannot be regarded as statistically representative of all such athletes, and the sample sizes were determined by accessibility and the

time and financial resources available rather than by an a priori power calculation; this is appropriate for a descriptive study but limits inference (see Section 4.10). Data collection was completed before May 2024.

2.3 Instruments

Four instruments were developed by the author from the coaching and athletics literature. (i) The athlete questionnaire contained a personal-data section and ten closed items on the sex of the athlete's long-distance coaches, trust in the coach's overall ability, whether the training situation was conducive, regular adherence to the training schedule, the main motive for choosing the event, participation in planning training, any test taken to join the club, perceived problems of integration between coaches and administration, intention to shift to another discipline, and whether colleagues were satisfied with their competing event. Three open-ended items asked about the major problems of long-distance running, the reasons athletes shift discipline, and improvements coaches should make. (ii) The coach questionnaire contained ten closed items on highest coaching qualification, the number of male and female long-distance athletes coached, whether athletes respect the training and competition plan, problems from club management that affect training, problems of integration among clubs, the federation, athletes and coaches, who plans training, whether athletes are encouraged to comment on sessions, who recruits athletes, the criteria for joining the club, and whether changes are visible after each session, together with open-ended items on facility problems, other coaching problems and possible solutions. (iii) The interview guide for officials asked about problems arising from clubs and federations in long-distance running, possible solutions, and whether federations and clubs have the facilities, personnel and budget needed, followed by probes based on responses. (iv) The observation checklist rated training (load, intensity, volume, appropriateness, athlete response and group formation) and facilities (availability, utilisation, appropriateness and athlete accommodation) as excellent, good or poor.

The questionnaires were pilot-tested with a small group of national-level athletes and coaches to check relevance, clarity and comprehensiveness, and were revised on the basis of their feedback. Because the closed items were single-item indicators rather than multi-item scales, internal-consistency reliability was not applicable, and test–retest reliability was not assessed.

2.4 Procedures

Trained research assistants, briefed on the purpose of the study and on ethical conduct, distributed and collected the questionnaires and confirmed each respondent's willingness to participate. Interviews with officials were conducted at their workplaces in the language in which respondents felt most comfortable, to encourage candid discussion. For field observation, the author attempted to observe two routine training sessions at each of two clubs (four sessions in total), and rated the facilities and equipment used for long-distance training and the accommodation available to athletes.

2.5 Ethical Considerations

The study protocol was reviewed and approved by the Department of Physical Education and Sports Science, University of Chittagong, as part of its Master of Education (MEd) research programme, and the study was conducted in accordance with the principles of the Declaration of Helsinki. All instruments stated that data were collected for research purposes only. Participation was voluntary, questionnaires were anonymous (respondents were instructed not to write their names), and all participants were informed of the study's objectives and confirmed their willingness to take part before data collection.

2.6 Data Analysis

Closed responses were coded and summarised as frequencies and percentages. Because the samples were small, 95% confidence intervals (CI) for each proportion were calculated with the Wilson score method (Wilson, 1927), which has better coverage than the conventional Wald interval for small samples and for proportions near 0 or 1 (Brown *et al.,* 2001). Responses missing for an item were excluded from that item's denominator. One exploratory comparison was pre-specified to test convergence between stakeholder groups: the proportion of athletes and coaches perceiving inter-organisational integration problems was compared with a two-sided Fisher's exact test ($\alpha = 0.05$). No further inferential testing was undertaken, given the descriptive aim and the small samples. Calculations were performed in Python 3 using the SciPy library.

Open-ended responses and interview notes were summarised descriptively and grouped into recurring issues and proposed solutions for each stakeholder group. Because written responses were brief and interviews were not audio-recorded and transcribed verbatim, a full reflexive thematic analysis (Braun & Clarke, 2006) was not undertaken, and the qualitative strand is reported as a descriptive summary. Observation ratings were summarised narratively. For integration, the quantitative and qualitative findings were mapped onto the relevant SPLISS pillars (De Bosscher *et al.,* 2006) in a joint display (Table 3), and each domain was classified as convergent, divergent or partly convergent across sources.

3. RESULTS

3.1 Athletes' Perspectives (RQ1)

Responses of the 30 athletes are summarised in Table 1 and Figure 1. Every athlete reported that his or her long-distance coaches were exclusively male (30/30; 100.0%, 95% CI 88.6–100.0). Most athletes trusted their coach's overall coaching ability (80.0%, 62.7–90.5), rated their training situation as conducive (70.0%, 52.1–83.3) and reported adhering regularly to their training

schedule (83.3%, 66.4–92.7). In contrast, only three athletes (10.0%, 3.5–25.6) had participated in planning their own training, and only three (10.0%, 3.5–25.6) had taken any form of test to join their club.

Of the 27 athletes who recorded a motive for choosing their event, 18 (66.7%, 47.8–81.4) cited its economic reward, six (22.2%, 10.6–40.8) cited the influence of a coach and three (11.1%, 3.9–28.1) cited a role model. A large majority perceived problems of integration between coaches and administration (86.7%, 70.3–94.7). Twenty-two athletes (73.3%, 55.6–85.8) were planning to move to another discipline, and 24 (80.0%, 62.7–90.5) believed that their colleagues were not satisfied with their current competing event.

Table 1: Athletes' responses to closed questionnaire items (n = 30)

Item	Response	n	% (95% CI)
Sex of long-distance coach(es)	Male only	30	100.0 (88.6–100.0)
Trusts coach's overall coaching ability	Yes	24	80.0 (62.7–90.5)
Training situation is conducive	Yes	21	70.0 (52.1–83.3)
Follows training schedule regularly	Yes	25	83.3 (66.4–92.7)
Main motive for choosing the event[a]	Economic reward	18	66.7 (47.8–81.4)
	Coach	6	22.2 (10.6–40.8)
	Role model	3	11.1 (3.9–28.1)
Participated in planning training	Yes	3	10.0 (3.5–25.6)
Took any test to join the club	Yes	3	10.0 (3.5–25.6)
Perceives coach–administration integration problems	Yes	26	86.7 (70.3–94.7)
Plans to shift to another discipline	Yes	22	73.3 (55.6–85.8)
Colleagues are satisfied with their competing event	No	24	80.0 (62.7–90.5)

CI, confidence interval (Wilson score method). [a]Valid responses n = 27; a motive was not recorded for three athletes, and no athlete selected "I don't know".

3.2 Coaches' perspectives (RQ2)

Coaches' responses are shown in Table 2. Six of the ten coaches (60.0%, 31.3–83.2) held a diploma as their highest coaching qualification; two held a bachelor's degree and two a master's degree, and none held a doctorate. Across their squads, the coaches reported 60 long-distance athletes, of whom 10 (16.7%, 9.3–28.0) were women. Nine coaches (90.0%, 59.6–98.2) planned training alone, and one planned jointly with athletes; no coach reported having no plan. All ten coaches nevertheless reported encouraging athletes to comment on training sessions, and nine believed that their athletes respected their training and competition plans.

Only two coaches (20.0%, 5.7–51.0) reported problems from club management that affected training, but eight (80.0%, 49.0–94.3) perceived problems of integration among clubs, the federation, athletes and coaches. Recruitment was controlled mainly by club officers (8/10), and the main criterion for admitting athletes was winning competitions (8/10); one coach cited observation of physique and one another criterion, while none reported using a talent-identification test or the athlete's own interest (0/10; 0.0–27.8). Six coaches (60.0%, 31.3–83.2) reported observing changes in athletes after each training session.

Table 2: Coaches' responses to closed questionnaire items (n = 10)

Item	Response	n	% (95% CI)
Highest coaching qualification	Diploma	6	60.0 (31.3–83.2)
	Bachelor's degree	2	20.0 (5.7–51.0)
	Master's degree	2	20.0 (5.7–51.0)
	PhD, certificate or other	0	0.0 (0.0–27.8)
Long-distance athletes in coaches' squads[a]	Female	10/60	16.7 (9.3–28.0)
Athletes respect training and competition plan	Yes	9	90.0 (59.6–98.2)
Club-management problems affect training	Yes	2	20.0 (5.7–51.0)
Integration problems among clubs, federation, athletes and coaches	Yes	8	80.0 (49.0–94.3)
Who plans training	Coach alone	9	90.0 (59.6–98.2)
	Coach and athletes	1	10.0 (1.8–40.4)
Encourages athletes to comment on sessions	Yes	10	100.0 (72.2–100.0)
Who recruits athletes	Club officers	8	80.0 (49.0–94.3)
	Coaches	1	10.0 (1.8–40.4)
	Athletes	1	10.0 (1.8–40.4)

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Item	Response	n	% (95% CI)
Criterion for joining the club	Winning competitions	8	80.0 (49.0–94.3)
	Observation of physique	1	10.0 (1.8–40.4)
	Other	1	10.0 (1.8–40.4)
	Talent-identification test	0	0.0 (0.0–27.8)
Visible change after each session	Yes	6	60.0 (31.3–83.2)

CI, confidence interval (Wilson score method). [a]Number of athletes coached, summed across the ten coaches (50 men, 10 women); these athletes are distinct from the athlete sample in Table 1.

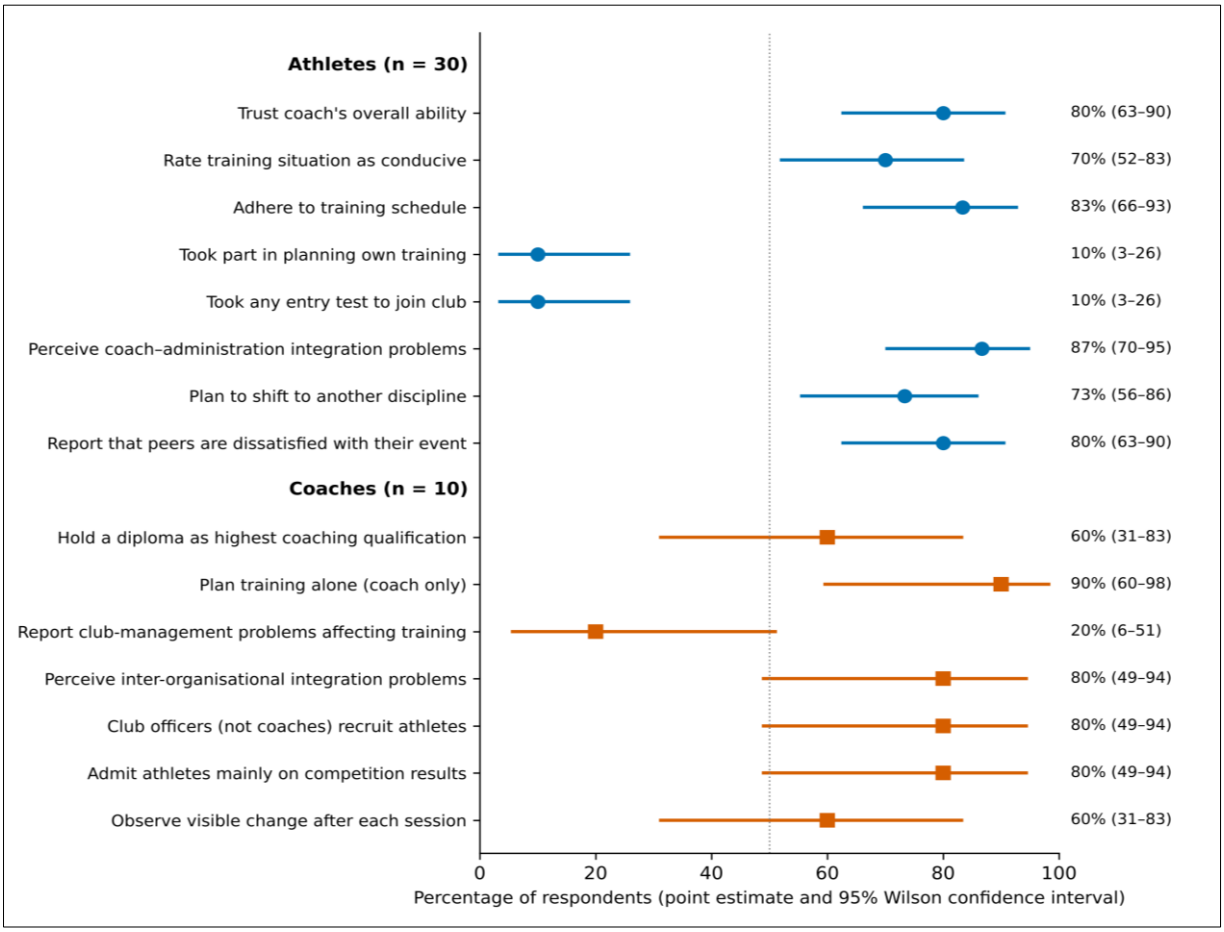


Figure 1: Key indicators reported by athletes (circles, n = 30) and coaches (squares, n = 10), with 95% Wilson confidence intervals. The dotted line marks 50%. The wide intervals for coaches reflect the small sample.

3.3 Convergence between Athletes and Coaches (RQ4)

Athletes and coaches converged closely on the existence of coordination problems: 86.7% of athletes and 80.0% of coaches perceived integration problems, a difference that was not statistically significant (Fisher's exact test, odds ratio 1.63, p = 0.63). The two groups also converged on talent identification: only 10.0% of athletes had taken any entry test, and no coach used a talent-identification test. Athletes' low participation in planning (10.0%) matched coaches' reports that they planned training alone (90.0%), but contrasted with all coaches' statements that they encouraged athletes' comments. Similarly, while only 20.0% of coaches reported club-management problems, 80.0% reported wider integration problems, suggesting that coaches located difficulties in relationships between organisations rather than within their own clubs.

3.4 Qualitative Findings (RQ1–RQ3)

Table 3 integrates the open-ended responses, interviews and observations by policy domain. Athletes identified four major problems in long-distance running: inadequate economic rewards, shortages of facilities and equipment, flawed talent identification, and insufficient coaching expertise. They attributed shifts to other disciplines to three reasons: better financial prospects elsewhere, the pull of peer groups in other events, and a perceived lack of personal progress. Asked what coaches should improve, they requested basic equipment such as spikes and competition suits, better coaching ability, and more opportunities to compete internationally.

Coaches described facility problems in concrete terms: the absence of gymnasiums equipped for weight training, poor track conditions, a lack of spikes and suits,

and inadequate shower and toilet facilities. Beyond facilities, they cited the lack of international competition, outdated or inaccessible coaching reference materials, and a shortage of qualified coaches. Their proposed solutions were dialogue among the federation, government bodies and coaches to increase competition opportunities; sponsorship to provide financial and material support; medical support for athletes; upgrading of coaches' qualifications; and direct financial incentives for athletes.

Officials of the BAF and clubs reported shortages of materials, equipment and facilities; poor budgeting and insufficient funds; interference by club officials and managers in coaching decisions; a mismatch between athletes' actual capabilities and the perceptions of coaches and selectors; and the absence of proper talent-identification criteria. They proposed partnerships with non-governmental organisations to secure equipment, clear delineation of the roles of officials and coaches, closer collaboration between coaches and managers around shared goals, and club-specific criteria for identifying talent.

Table 3: Joint display of findings by SPLISS policy domain and data source

Domain (SPLISS pillar)	Athletes (questionnaire)	Coaches (questionnaire)	Officials (interviews) and observation	Integration
Financial support and athlete incentives	66.7% chose event for economic reward; low rewards cited as a major problem and as a reason to switch event	Sponsorship, medical support and direct financial incentives proposed	Poor budgeting and insufficient funds; NGO partnerships proposed	Convergent
Talent identification and recruitment	10.0% took any entry test; flawed talent identification cited	80% recruitment by club officers; 80% admission on competition wins; 0% use of talent tests	No proper talent criteria; mismatch between athletes' capability and selectors' perceptions	Convergent
Coaching provision and coach development	Better coaching ability requested	60% diploma-level; outdated reference materials; shortage of qualified coaches	Observation: no written session plans; load, intensity and volume could not be rated	Convergent
Athlete involvement in planning	10.0% participated in planning	90% plan alone, yet 100% report encouraging athlete comments	—	Divergent
Training facilities and equipment	70.0% rated overall situation conducive, yet requested spikes, suits and equipment	No weight-training gym; poor tracks; lack of spikes and suits; poor sanitation	Shortage of materials, equipment and facilities; observation: availability, utilisation, appropriateness and accommodation mostly poor	Partly convergent
Governance and inter-organisational integration	86.7% perceive coach–administration integration problems	80% perceive integration problems; 20% report club-management problems	Interference by club officials in coaching decisions; role clarity proposed	Convergent (integration); divergent (club management)
International competition	More international competition requested	Lack of international competition a major problem; stakeholder dialogue proposed	—	Convergent

SPLISS, Sports Policy factors Leading to International Sporting Success (De Bosscher *et al.,* 2006). "—" indicates that the source did not address the domain.

3.5 Field Observation

None of the four observed training sessions was guided by a written session or training plan, so training load, intensity and volume could not be determined from documentation in any session. The appropriateness of the training content and the way athletes were grouped were predominantly rated poor. The availability of facilities and equipment, the extent to which existing facilities were used, their appropriateness for long-distance training, and the accommodation available to athletes were each predominantly rated poor, with only a small minority of ratings in the "good" category and none in the "excellent" category.

4. DISCUSSION

4.1 Principal Findings

This study examined coaching problems in national-level long-distance running in Bangladesh from the perspectives of athletes, coaches and officials, complemented by field observation. Four principal findings emerged. First, the problems are systemic: they span coach education, talent identification and recruitment, athlete involvement, facilities and inter-organisational coordination, and every stakeholder group described them. Second, athletes largely trust their coaches and adhere to their programmes, yet are almost entirely excluded from planning their own training, and the training observed was not guided by written plans. Third, entry into the event is driven mainly by economic motives and by results-based recruitment controlled by club officers rather than by systematic talent identification, and nearly three-quarters of athletes intend to leave the discipline. Fourth, athletes' global satisfaction with their training situation coexisted with specific and consistently reported deficits in facilities and equipment, a perception–observation gap with important implications for how the system is evaluated.

4.2 Coach Qualifications and Professional Knowledge

Six of the ten coaches held only a diploma, and coaches themselves reported outdated reference materials and a shortage of qualified colleagues. Contemporary distance-running practice relies on precise manipulation of training intensity distribution, volume and periodisation (Seiler, 2010; Haugen *et al.,* 2022), concurrent strength training (Rønnestad & Mujika, 2014) and nutritional support (Thomas *et al.,* 2016). The observation that no session was guided by a written plan, so that load, intensity and volume could not be determined, is consistent with a gap in the professional knowledge component of coaching effectiveness described by Côté and Gilbert (2009). A diploma is not in itself evidence of ineffective coaching, and coaches in this study described learning needs rather than indifference. The literature suggests, however, that one-off formal courses are insufficient; coach development is more effective when it combines formal content with mentoring, reflection and structured learning from practice (Cushion *et al.,* 2003; Mallett *et al.,* 2009). For Bangladesh, this argues for continuing professional development anchored in coaches' daily work, for example mentored planning and review of training cycles, rather than for additional classroom certificates alone.

4.3 Athlete Involvement and the Coach–athlete Relationship

The coach–athlete relationship appeared outwardly positive: most athletes trusted their coach and followed their schedule, and nearly all coaches believed that athletes respected their plans. Yet only 10% of athletes had participated in planning, and nine of ten coaches planned alone, even though all coaches reported encouraging athletes' comments. This divergence between stated openness and actual practice suggests a controlling rather than autonomy-supportive style. Self-determination theory predicts that autonomy support, including involving athletes in decisions and explaining the rationale for training, promotes self-determined motivation and persistence (Ryan & Deci, 2000; Mageau & Vallerand, 2003), and autonomy-supportive coaching has been associated with more self-determined motivation in athletes (Amorose & Anderson-Butcher, 2007). In endurance events, where athletes must sustain years of monotonous high-volume training, motivational quality is likely to be especially important. Structured mechanisms for athlete input, such as joint goal-setting at the start of each training block and regular review of training logs, are low-cost changes that could be introduced immediately.

4.4 Talent Identification, Recruitment and Retention

Recruitment was dominated by club officers and based mainly on competition wins, no coach used a talent-identification test, and officials themselves acknowledged the absence of proper criteria. Selection on current performance alone is known to favour early maturers and to have weak predictive value for later elite performance; multidimensional, longitudinal and development-focused approaches are recommended instead (Abbott & Collins, 2004; Vaeyens *et al.,* 2008; Johnston *et al.,* 2018). Till and Baker (2020) further argue that talent systems must clarify what they are looking for and resource development, not only selection. The finding that two-thirds of athletes entered long-distance running primarily for economic reward is not inherently negative: socio-economic motivation is widely regarded as one contributor to the success of East African distance runners (Wilber & Pitsiladis, 2012; Tucker *et al.,* 2015). In Bangladesh, however, the same motive appears to work against retention, because athletes reported that rewards in long-distance running were inadequate relative to other options, and 73.3% intended to switch discipline. When economic motivation is the main reason for entry but the economic returns are weak, attrition is a predictable outcome. Aligning incentives with development, for example through performance-linked stipends tied to long-term programme participation rather than single results, may help retain athletes long enough for their aerobic development to mature.

4.5 Facilities, Resources and the Perception–observation Gap

Seventy percent of athletes described their overall training situation as conducive, yet the same athletes asked for basic equipment, coaches listed specific deficits in gymnasiums, tracks, footwear, clothing and sanitation, officials reported shortages of facilities and funds, and observation rated availability, utilisation, appropriateness and accommodation predominantly poor. Two explanations are plausible. Athletes who have trained only within the national system may lack an external reference point and judge

conditions against local norms; alternatively, a global item may capture social and relational aspects of the environment that are more positive than its material aspects. Either way, the finding cautions against relying on athlete satisfaction alone when evaluating training environments. The SPLISS model treats training facilities as an independent pillar of elite success (De Bosscher *et al.,* 2006), and the absence of strength-training facilities is directly relevant to performance, given the established benefit of strength training for running economy (Rønnestad & Mujika, 2014).

4.6 Governance and Inter-organisational Integration

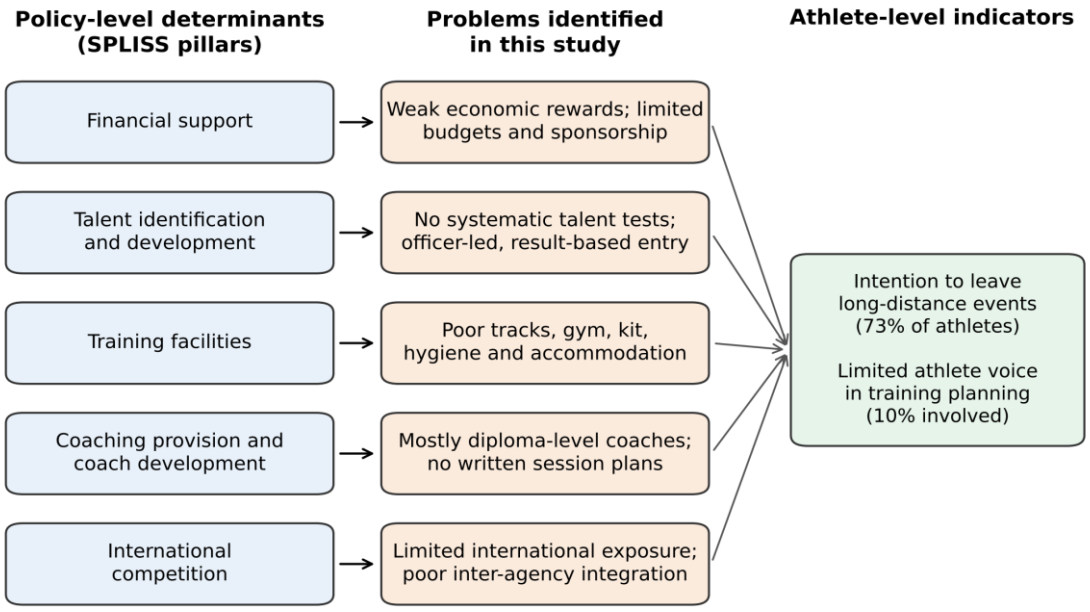
Integration problems were the most consistently reported issue across groups, with no meaningful difference between athletes (86.7%) and coaches (80.0%). Officials described interference by club officials and managers in coaching decisions, and recruitment was largely controlled by officers rather than coaches. Interestingly, coaches rarely reported problems within their own club's management but frequently reported problems between organisations, which may reflect reluctance to criticise their immediate employers or a genuine locus of dysfunction at the interfaces among clubs, the federation and service teams. The SPLISS framework emphasises an integrated approach to policy development, in which roles and responsibilities across organisations are coordinated (De Bosscher *et al.,* 2006). Clear written role descriptions that reserve technical decisions for coaches, and a federation-led coordination forum for long-distance coaches across the army, navy, BKSP, BJMC and university teams, are practical responses that the officials themselves proposed.

4.7 Gender Composition of Coaching

All athletes reported having only male long-distance coaches, and women made up one in six of the athletes in coaches' squads. The underrepresentation of women in coaching is a global phenomenon, explained by barriers operating at individual, interpersonal, organisational and socio-cultural levels (LaVoi & Dutove, 2012), and elite women coaches have described feeling undervalued and marginalised within their sporting organisations (Norman, 2010). The present data cannot establish the causes in Bangladesh, but the complete absence of women among long-distance coaches warrants attention in federation coach-education and recruitment policy.

4.8 An integrative Interpretation

Figure 2 summarises how the problems identified map onto the SPLISS pillars and may relate to two athlete-level indicators observed in this study: intention to leave long-distance events and limited voice in training planning. The figure is an interpretive synthesis rather than a tested model; the arrows denote plausible pathways suggested by the convergent evidence and should be examined in future longitudinal research. Its main message is that no single pillar explains the situation. Improving coach qualifications without athlete incentives, or building facilities without coordinated governance, is unlikely to change outcomes on its own.



Arrows indicate hypothesised pathways drawn from the study findings; they are not tested causal effects.

Figure 2: Integrative interpretation of the study findings using the SPLISS framework (De Bosscher *et al.,* 2006). Arrows indicate hypothesised pathways derived from the convergent findings; they are not tested causal effects

4.9 Practical Implications

The findings point to six priorities for the BAF, clubs and service teams. (1) Establish a continuing professional development pathway for long-distance coaches that includes mentored planning, written periodised training plans and up-to-date reference materials. (2) Introduce multidimensional, development-oriented talent-identification criteria that give coaches, not only officers, a role in recruitment. (3) Build athlete input into planning through joint goal-setting and periodic review. (4) Prioritise low-cost, high-impact facilities, particularly access to strength-training equipment, appropriate footwear and clothing, and basic sanitation, through budgets, sponsorship and partnerships. (5) Formalise the division of responsibilities between officials and coaches and create a coordination mechanism across institutions. (6) Expand structured domestic and international competition opportunities and align financial incentives with long-term programme participation. Measures to recruit and develop women coaches should accompany each of these.

4.10 Strengths and Limitations

The study's main strength is its triangulation of three stakeholder groups with direct observation, which allowed convergent and divergent findings to be distinguished rather than relying on a single perspective. It covers the principal institutions in which national-level long-distance runners in Bangladesh train, and its findings are reported with confidence intervals that make their precision explicit.

Several limitations must be acknowledged. The samples were small, particularly for coaches and officials, so estimates are imprecise and subgroup comparisons were not possible. Although athletes were randomly selected within participating teams, no enumerated national register existed, and the teams themselves were selected purposively, so the findings may not generalise to all national-level long-distance runners. All closed items were single-item, researcher-developed indicators whose reliability was not assessed, and some items (for example, colleagues' satisfaction) asked respondents to report on others. Detailed demographic characteristics (such as age, sex distribution and experience of the athlete sample) were not available for analysis, and no objective performance data were collected, so associations between coaching problems and performance could not be tested. The qualitative strand relied on brief written responses and interview notes rather than verbatim transcripts, which limits analytic depth. Only four training sessions were observed, and observation may have altered normal practice. Finally, the cross-sectional design precludes causal inference.

4.11 Future Research

Future studies should recruit larger samples from an enumerated list of national-level athletes and coaches, use validated instruments such as established measures of coach–athlete relationship quality and coaching behaviour, and link coaching and organisational variables to objective performance and retention data over time. Qualitative studies using recorded interviews and reflexive thematic analysis could explore why athletes rate their environment favourably despite documented deficits. Intervention studies, for example evaluating a mentored coach-development programme or the introduction of structured athlete input into planning, would provide the strongest evidence for reform.

5. CONCLUSION

Coaching problems in national-level long-distance running in Bangladesh are systemic. Athletes trust and follow their coaches, but they are rarely involved in planning, are recruited mainly on results by club officers rather than through systematic talent identification, are drawn to the event largely by economic motives that the event does not reward well, and in most cases intend to leave it. Coaches are mostly diploma-qualified, plan training alone without written plans, and work with inadequate facilities, while all stakeholder groups report weak coordination among clubs, the federation and coaches. Because these problems reinforce one another, isolated measures are unlikely to succeed. Coordinated reform of coach development, talent identification, athlete involvement, facilities, governance and incentives offers the most realistic route to more competitive long-distance running in Bangladesh.

Declarations

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Author contributions (CRediT)

Md. Parvaz Zahan: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Visualization, Writing – original draft, Writing – review & editing.

Mohammad Abu Manchur: Supervision, Project administration, Resources, Writing – review & editing.

Md. Habibur Rahman Jalal: Resources, Project administration, Writing – review & editing.

Sirajuddin Md Alamgir: Resources, Project administration, Writing – review & editing.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request. The questionnaires, interview guide and observation checklist are available from the author.

Use of Artificial Intelligence: An AI assistant tool was used to assist with language editing, restructuring of the manuscript, recalculation of confidence intervals from the recorded frequencies, and preparation of figures. The author designed the study, collected all data, and takes full responsibility for the content.

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