
Physical Education Teachers' Participation in Developing Individualized Educational Plans (IEP) for Students with Autism Spectrum Disorder (ASD)

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This descriptive cross-sectional study examined physical education (PE) teachers perceived preparedness, multidisciplinary collaboration, and participation in individualized education program (IEP) processes for students with autism spectrum disorder (ASD) in Jeddah, Saudi Arabia. Data were collected from a purposive sample of 44 PE teachers using a 21-item questionnaire assessing professional preparation (7 items), collaboration (6 items), and role recognition and participation (8 items). The reported mean scores were 4.46 (SD = 0.47) for preparation, 3.95 (SD = 0.94) for collaboration, and 4.25 (SD = 0.71) for role recognition and participation. Although teachers reported a strong appreciation of their role in the IEP process, comparatively lower scores for formal meeting invitations ($M = 3.82$) and participation in goal formulation ($M = 4.00$) highlighted potential gaps between perceived professional responsibility and active involvement in collaborative planning. These findings highlight the importance of strengthening formal collaboration mechanisms, ensuring PE teachers' inclusion in IEP meetings, and providing targeted professional development. Given the purposive sampling strategy, self-reported measures, and cross-sectional design, the findings should be interpreted cautiously and cannot establish causal relationships or be generalized to all PE teachers in overall Saudi Arabia.

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Introduction

Meaningful inclusion in school physical education (PE) requires more than access to a common timetable. Students need appropriate opportunities to develop motor competence, participate with peers, experience autonomy, and demonstrate progress through appropriately adapted activities. For students with ASD, these opportunities may depend on adjustments to communication, activity structure, sensory demands, instructional pacing, and assessment. Physical activity reviews report potential benefits in motor, social, and behavioral domains, although intervention effects vary across participants and program characteristics (Jia et al., 2024; Ji et al., 2023). Therefore, individualized educational planning should connect a student's functional profile with meaningful opportunities to participate in PE.

An individualized educational plan (IEP) is considered here an educational planning process that assesses needs, goals, support, responsibilities, and monitoring arrangements. Because the legal meaning and implementation of individualized plans differ across jurisdictions, the present study does not assume that the US statutory IEP model operates identically in Saudi schools. Instead, it examines teachers' reported participation in school-based individualized planning. Evidence that IEP documentation can omit important functional domains underscores the need to examine the content and contributors to such plans (Findley et al., 2022).

Jeddah Governorate provides a relevant setting in which to examine how PE teachers describe inclusive planning. Saudi research on PE teachers' attitudes indicates growing attention to inclusion, but favorable attitudes should not be equated with routine participation in school-level decisions (Alhumaid et al., 2022). Institutional arrangements for inviting specialist teachers, exchanging assessments, assigning responsibility, and reviewing goals may shape whether participation becomes substantive. This survey addresses the reported involvement of PE teachers rather than evaluating a specific

national policy or independently auditing school IEP records. Evidence from Jeddah elementary schools also identifies teacher attitudes as an important local dimension of inclusive education (Alsolami & Vaughan, 2023). Saudi physical education research identifies teacher self-efficacy and preparedness as relevant to teaching students with ASD (Alhumaid, 2021).

International syntheses identify teacher preparation, prior experiences, instructional support, and school collaboration as factors associated with teachers' attitudes toward including learners with disabilities (Tarantino et al., 2022). Work on teacher preparation also distinguishes positive beliefs from context-specific confidence to enact adaptations (Braksiek, 2022). In autism-related PE, challenges are particularly consequential because students' motor skills, communication, behavioral regulation, and sensory profiles can differ substantially. Reviews of school physical activity show variation in participation opportunities and highlight a need for environmental as well as individual support (Li et al., 2021; Rech et al., 2022).

The literature describes both the value of adapted PE and recurring implementation barriers but provides less locally grounded evidence on which stages of individualized planning PE teachers influence. Assessing student performance, choosing equipment, writing measurable goals, attending meetings, and sharing results are related yet distinct activities. The present article addresses that practical gap by describing three questionnaire dimensions among PE teachers in Jeddah, with special attention to the difference between perceived role value and formal planning opportunities. It seeks to inform feasible school procedures and professional-development priorities, not to establish the effectiveness of an intervention.

Research Objectives

The study aimed to:

1. Examine PE teachers' perceived role in developing IEPs for students with ASD.

2. Determine their self-reported participation in multidisciplinary IEP planning and decision-making.
3. Identify perceived challenges in adapting physical education activities for students with ASD.

Research Questions

Following research questions addressed the research objectives:

1. What is the perceived role of physical education teachers in developing IEPs for students with ASD?
2. To what extent do physical education teachers participate in IEP planning and decision-making for students with ASD?
3. What challenges do physical education teachers report when adapting physical activities for students with ASD in inclusive educational settings?

Literature Review

Individualized planning is particularly relevant where the instructional environment has multiple demands at once: motor coordination, comprehension of rules, social interaction, noise, proximity to peers, and rapid transitions. A lesson that meets a general curriculum objective can nonetheless be inaccessible to a student who requires visual information, additional processing time, predictability, or a less distracting space. Conversely, participation need not mean undertaking precisely the same movements as classmates. The educational standard should be meaningful access to a challenging but attainable curriculum, with individualized support documented, reviewed, and gradually adjusted as the student develops. For PE teachers, participation in team planning is thus closely connected to the quality and continuity of instruction.

Physical Activity and Educational Participation in Autism

Contemporary evidence base supports opportunities for structured, individualized movement experiences for children with ASD, with systematic reviews reporting improvements

in aspects of motor skill, social communication, and other outcomes following exercise interventions (Jia, S., et al., 2023; Koh, 2024). These reviews should not be interpreted as showing that every type of exercise benefits every child equally or that benefit automatically follows placement in a mainstream PE class. Quality of teaching, dosage, support, and fit between the activity and the learner's goals remain critical considerations. Reviews also identify lower average physical activity participation among autistic groups than comparison peers, illustrating the importance of opportunities that students can realistically access (Arkesteijn et al., 2022; Rech et al., 2022).

Student-focused goals can include safe participation, sustained engagement, specific motor skills, collaborative play, independence in routines, and generalization of a practiced activity. Such goals are best treated as individualized educational decisions requiring baseline assessment rather than generic claims about ASD. Research on cognitive and educational outcomes from motor-based interventions further cautions against assuming direct academic gains from participation alone (Jylänki et al., 2022). For PE teachers, the planning contribution should therefore include observable measures and an explicit strategy for assessing progress.

Teacher Preparation, Confidence, and Inclusive Practice

Inclusive practice depends on teachers' capacity to translate broad principles into task-level adjustments. A scoping review of inclusive PE documented complexities between educators expressed intentions and enacted practices (Karamani et al., 2024). Additional evidence suggests that practical experiences and integrated preparation matter for self-efficacy (Braksiek, 2022). Preparation should address identifying a student's current skills, selecting attainable but challenging goals, adapting rules and equipment, supporting communication, and documenting response to instruction. ASD-specific studies also emphasize the value of professional support for teachers who encounter

uncertainty in modifying activities or managing challenging situations (Nemček et al., 2024).

The distinction between receiving training and wanting training is important for interpreting this study. Its first questionnaire domain includes statements about completed experiences and statements about perceived needs for additional workshops. An elevated combined mean therefore cannot validly demonstrate uniformly high competence; it may instead index simultaneous positive self-reports and unmet professional-development needs. For future scale validation, training exposure, confidence, and demand for support should be measured separately, with behavioral anchors and where possible independently observed performance.

Multidisciplinary Planning and Teacher Agency

Individualized planning requires information from those who see the learner across contexts. PE teachers can contribute motor assessment data, movement-related student interests, feasible accommodations, and evidence of progress within group activities. Studies of inclusive PE suggest that collaboration and school-level support are relevant conditions for substantive rather than symbolic inclusion (Bertills & Björk, 2024; Tarantino et al., 2022). Studies of IEP quality likewise indicate that documenting needs does not guarantee aligned, measurable goals (Findley et al., 2022). Together, these findings support PE-specific baseline information and goals within interdisciplinary review.

Teacher agency offers an interpretive framework: a teacher's ability to act on professional judgment depends not only on knowledge but also on work routines, recognized authority, communication channels, and opportunities to take part in decisions (Hendriksen et al., 2024). In this framework, rating one's professional role as important is not equivalent to being invited to a meeting or co-authoring goals. The present survey's different item scores provide a descriptive way to examine this difference, although the design

cannot establish which structural conditions explain it.

Saudi Arabian and International Implications

International evidence from teachers and school settings is relevant for comparison but should not be transplanted uncritically to Jeddah. Research from Saudi Arabia considers educators' attitudes toward inclusion (Alhumaid et al., 2022), while studies in other contexts describe challenges associated with pedagogical adaptation, parental communication, and supporting autistic learners in PE (Yılmaz et al., 2024). The present contribution is a targeted, exploratory description of teachers perceived roles within local planning routines. It is not a representative audit of inclusive education nationally, nor is it a direct study of students with ASD' outcomes. More recent Saudi findings have examined physical educators' inclusion attitudes (Alhumaid, 2022), peers' attitudes toward inclusion in PE (Alhumaid, 2023), and teachers' autism-related knowledge and evidence-based practices (Almughyiri, 2025; Alassaf, 2025). These studies provide contextual comparisons but do not directly measure the IEP participation reported by the current sample.

Research Methodology

The conceptual model underlying this descriptive investigation distinguishes three linked but nonidentical dimensions. Professional preparation concerns the knowledge and opportunities that teachers bring to assessment and instruction; multidisciplinary collaboration concerns their access to joint decisions and shared planning routines; and role recognition or participation concerns perceived acknowledgment and particular activities, including goal writing and monitoring. These dimensions should not be interpreted as a tested path model. Although the literature supports their practical relevance, the current data cannot establish whether training produces greater collaboration, whether recognition mediates participation, or whether improved participation yields better student outcomes. Such

relationships require conceptually distinct measures and a stronger longitudinal or experimental design.

Several methodological choices in the submitted manuscript merit transparent reporting. There is no evidence that a pre-specified sample-size or power calculation was undertaken, and the final sample of 44 is not sufficient to justify general population claims. Recruitment used professional access to schools rather than known selection probabilities. The study also did not provide school identifiers that would permit clustering to be accounted for or checked. As a result, school-level generalizations and assumptions of statistical independence cannot be verified. Reporting descriptive frequencies and preserving the original item responses is more defensible than producing new p values from information unavailable in the manuscript.

Research Design and Setting

A quantitative, cross-sectional descriptive survey was administered in Jeddah Governorate, Saudi Arabia, in early 2025. The design was selected to summarize teachers' ratings of preparation, collaboration, and participation in individualized educational planning. Because exposure and outcomes were reported at one time without experimental manipulation, no causal interpretation is appropriate.

Sampling and Participants

The study analyzed 44 purposively recruited PE teachers. The source manuscript reports a selection frame of 67 schools described as public, private, and international institutions, while it also characterizes the participating teachers as working in public schools. These descriptions do not establish the exact number of eligible public schools or the school-level recruitment yield; consequently, a response rate cannot be calculated reliably from available information. The sample should be viewed as nonprobability and geographically limited. In addition, 29 respondents reported current school service to students with ASD and 15 reported no such current service. The latter

group was retained in the original analysis; their ratings may describe previous experience, beliefs, or expectations instead of contemporaneous ASD-specific practice.

Instrument and Construct Definitions

The researcher-developed questionnaire comprised 21 self-report items on a five-point response scale (1 = strongly disagree, 5 = strongly agree). The three original domains were Training and Qualification (7 items), Collaboration with the Multidisciplinary Team (6 items), and Marginalization of the PE Teacher's Role (8 items). On examination, the third set of items mix's role importance, team recognition, access to IEP records, and actual planning tasks. It is therefore reported descriptively as role recognition and participation, rather than as a validated measure of marginalization. The first domain likewise combines self-reported training with calls for additional training. These conceptual overlaps limit the interpretation of composite scores.

Validity and Reliability

The submitted study reports content review by a panel of PE and special education experts, followed by revisions to item wording. The number of experts, their selection, and quantitative content-validity indices were not provided, so their procedures cannot be reconstructed. Item-to-domain correlations were presented as evidence of internal alignment; those correlations alone do not establish factorial or construct validity, especially if uncorrected for item overlap. Cronbach's alpha was reported as .727, .928, and .880 for the three domains and .935 for the full instrument. Although these estimates indicate internal consistency in this sample, alpha does not prove dimensionality or substantive validity.

Data Collection and Ethics

The source manuscript states that questionnaires were distributed through direct school contact in early 2025, that participation was voluntary, that informed consent was obtained, and that responses were handled confidentially. No institutional review board name, approval

number, sampling invitation script, instrument language, translation procedures, or missing-data protocol is specified in the supplied record. Those details should be confirmed by the author before journal submission; they have not been invented in this revision.

Analytical Strategy

The original analysis used SPSS version 26 to calculate frequencies, percentages, item means and standard deviations, domain summaries, Pearson item–domain correlations, and Cronbach’s alpha. The published relative importance index (RII) percentages equal item means divided by the maximum response value (5) and multiplied by 100. Because these are simple linear transformations of means, they add no independent inferential evidence and have

been omitted from the main result tables. No raw item-level dataset was supplied, so distributions, corrected correlations, confidence intervals, subgroup differences, and missing-data sensitivity analyses could not be recomputed. Inferential testing or statistical significance claims are not added. Results are presented as descriptive evidence from the 44 respondents only.

Data Analysis and Interpretation

Results are organized from sample characteristics to measurement consistency and the three reported domains. All figures below reproduce the descriptive values given in the source document; no new observations or statistical tests have been generated.

Table 1 Demographic and Professional Characteristics of Participants (N = 44)

Characteristic	Category	n (%)
Age	20–30 years	15 (34.1)
	31–40 years	12 (27.3)
	41–50 years	9 (20.5)
	51–60 years	8 (18.2)
Gender	Male	41 (93.2)
	Female	3 (6.8)
School currently serves students with ASD	Yes	29 (65.9)
	No	15 (34.1)
Teaching role/level	Primary	23 (52.3)
	Primary/intermediate	2 (4.5)
	Intermediate	12 (27.3)
	Secondary	6 (13.6)
	Educational supervisor	1 (2.3)

Note. Percentages are based on 44 respondents and may differ from 100 due to rounding. The final variable describes reported role/level, not verified student exposure.

Table 1 indicates the participants were predominantly male (93.2%), and approximately two thirds reported working in schools currently serving students with ASD. Because a substantial minority lacked current ASD enrollment, the following item means cannot be interpreted as direct behavioral observations for every participant. A clear distinction is maintained between endorsing the importance of a task and reporting participation in that task.

Table 2*Internal Consistency Reliability and Descriptive Statistics of the Questionnaire Domains and Overall Instrument*

Domain	Items	Cronbach's α	Reported M	Reported SD
Training and qualification	7	.727	4.46	0.47
Multidisciplinary collaboration	6	.928	3.95	0.94
Role recognition/participation	8	.880	4.25	0.71
All questionnaire items	21	.935	—	—

Note. Alpha and descriptive statistics are reproduced from the submitted article. Domain labels are descriptive; construct validity was not independently established.

Table 2 indicates the collaboration score was lower than training and role recognition. Because the dimensions contain different kinds of statements, comparison of their unweighted averages should be treated as descriptive rather than as evidence of a latent hierarchy. Positive ratings of a need for training must not be conflated with evidence of completed training.

Table 3*Item-Level Descriptive Statistics for the Training and Qualification Domain: Mean Scores (M) and Standard Deviations (SD)*

Item	Questionnaire item	M	SD
1	I have been trained to formulate short- and long-term goals required in the Individualized Educational Plan (IEP).	4.27	0.95
2	I have been trained to use assessment and evaluation tools to identify students' physical abilities.	4.61	0.62
3	I have studied specialized courses on adapting and modifying curricula and teaching methods in the IEP.	4.20	1.05
4	I have received practical training in adapting individual and team sports to suit individuals with varying abilities.	4.30	0.88
5	There is a need to attend courses and workshops on how to formulate goals in the IEP.	4.64	0.53
6	There is a need to attend courses and workshops on how to modify and adapt teaching methods in the IEP.	4.57	0.62
7	There is a need to develop academic programs specialized in adapted sports at the level of higher education.	4.61	0.58

Note. Means and standard deviations are transcribed from the submitted manuscript (five-point agreement scale). Item statements retain the wording used in the source instrument; higher agreement does not invariably indicate greater competence or more actual participation.

Table 3 describes the training, and qualification had a reported average of $M = 4.46$ ($SD = 0.47$). The strongest ratings related to the need for workshops on formulating IEP goals ($M = 4.64$) and academic programs specializing in adapted sports ($M = 4.61$). In contrast, having completed coursework on adapting curricula and teaching methods was less strongly endorsed ($M = 4.20$). This pattern suggests concurrent enthusiasm for professional development and uneven reported preparation, not independently verified mastery.

Table 4

Item-Level Descriptive Statistics for Multidisciplinary Team Collaboration in Individualized Educational Planning for Students with Autism Spectrum Disorder (ASD)

Item	Questionnaire item	M	SD
1	Each student with a disability has an IEP designed by a multidisciplinary team.	3.98	1.09
2	I participate in writing IEPs with a multidisciplinary team.	3.91	1.16
3	I am invited to attend regular meetings to prepare for the IEP.	3.82	1.11
4	I participate in decision-making regarding the appropriate environment for practicing sports for students with ASD.	4.00	1.06
5	I participate in selecting appropriate tools and sports for students with ASD.	4.09	1.03
6	I help schedule IEP meetings at times that do not conflict with my academic schedule.	3.91	1.14

Note. Means and standard deviations are transcribed from the submitted manuscript (five-point agreement scale). Item statements retain the wording used in the source instrument; higher agreement does not invariably indicate greater competence or more actual participation.

Table 4 shows the collaboration averaged $M = 3.95$ ($SD = 0.94$). Participation in selecting appropriate tools and sports was comparatively high ($M = 4.09$), whereas invitations to regular IEP meetings received the lowest rating in the domain ($M = 3.82$). The descriptive difference points to potentially stronger involvement in practical activity selection than in formal planning. As the study lacked school records, meeting logs, and observational confirmation, it cannot estimate the proportion of teachers excluded from planning meetings.

Table 5

Item-Level Descriptive Statistics for Physical Education Teachers' Role Recognition and Participation in Individualized Educational Planning for Students with Autism Spectrum Disorder (ASD)

Item	Questionnaire Items	M	SD
1	I believe that the role of the physical education teacher is important in the process of building the IEP for students with ASD.	4.57	0.62
2	I feel that the multidisciplinary team is aware of the importance of physical activity for students with ASD.	4.52	0.70
3	My weekly schedule includes physical education classes for special education classes at school.	4.09	1.20
4	Students with ASD participate in sports activities.	4.30	1.07
5	I participate in formulating short- and long-term goals related to the physical education curriculum.	4.00	1.14
6	I participate in measuring the physical performance and abilities of students with ASD.	4.32	0.80

Item	Questionnaire Items	M	SD
7	I share the results of assessment and evaluation with students with ASD and their teachers.	4.05	1.12
8	I can access the IEP to make modifications to goals and monitor the progress of students with ASD.	4.14	0.90

Note. Means and standard deviations are transcribed from the submitted manuscript (five-point agreement scale). Item statements retain the wording used in the source instrument; higher agreement does not invariably indicate greater competence or more actual participation.

Table 5 shows the role recognition and participation averaged $M = 4.25$ ($SD = 0.71$). Teachers strongly agreed that their contribution was important ($M = 4.57$) and that the team recognized the importance of physical activity ($M = 4.52$). Participation in writing short- and long-term PE goals received a relatively lower rating ($M = 4.00$), as did sharing assessment findings ($M = 4.05$). Such items describe distinct experiences. Thus, the composite must not be labeled a measure demonstrating the absence of marginalization.

Discussion

A practical distinction also needs to be made between a teacher's right to contribute, the opportunity to contribute, and the educational influence of that contribution. Being invited to a meeting can be a first step but does not ensure that the participant has student-specific information in advance, adequate time to explain recommendations, or a mechanism to modify the documented plan. Conversely, effective collaboration could sometimes occur through written consultations and scheduled exchanges, especially when staff timetables do not align. The most meaningful institutional indicator would therefore combine access to discussions, documented PE-related input, explicit allocation of responsibilities, and periodic review of student progress. These indicators provide future measurement targets;

they are not outcomes already demonstrated by the survey.

Professional development should similarly be evaluated at more than one level. Attendance at a workshop can indicate exposure but does not establish whether teachers can develop measurable objectives, select safe and accessible tasks, or use progress monitoring to adjust a plan. A stronger evaluation could compare written planning products before and after training, use structured observations of lessons, and assess whether teachers' recommendations were adopted by multidisciplinary teams. It would also consider teacher workload and feasibility. Such evaluation is particularly valuable in autism-related PE, where the effectiveness of an adjustment depends on the individual learner, the task, available resources, and the social environment rather than on a fixed list of techniques.

The sample included also raises the possibility of different response processes. A respondent currently teaching students with ASD may interpret an item about selecting equipment as a recent routine practice; a teacher whose school does not currently serve students with ASD may answer based on remembered practice or professional aspirations. Aggregating both responses without a sensitivity analysis can obscure important variation. It would be inappropriate to presume that the latter subgroup lacked relevant expertise, but it is equally inappropriate to describe every answer as current ASD-specific implementation. A future questionnaire should use clear reference periods and eligibility filters, and it should specify whether each question concerns attitudes, previous practice, current responsibilities, or access to educational documents.

Professional Preparation and Unmet Needs

The central finding is not simply that PE teachers reported high scores: it is that their strongest endorsements often concerned both the perceived importance of PE planning and the need for additional instruction. Domain interpretation must therefore consider item content. Teacher preparation literature consistently indicates that positive attitudes and perceived capacity are related but different from practical experience and knowledge (Braksiek, 2022; Tarantino et al., 2022). The demand for training in measurable goal writing, assessment methods, and curriculum adaptation indicates potentially actionable development priorities. Training programs should use authentic IEP samples, video modeling, supervised practice, and feedback on lesson modifications rather than rely exclusively on awareness workshops.

Motor and functional assessment should be linked explicitly to a student's current participation. For instance, a plan might document a baseline number of successful supported ball passes, specify the cueing system used, and set a measurable target for a defined instructional period. This is an illustrative recommendation, not an intervention tested by the current research. Exercise reviews demonstrate that improvements are possible but vary by outcome, giving additional reason to individualize goals and monitor their attainment (Ji et al., 2023; Hou et al., 2024).

Practical Collaboration Versus Formal Participation

The lower rating for IEP meeting invitations, relative to activity selection, is consistent with an important distinction between implementation and shared educational decision-making. Participation in design tasks can occur informally without the teacher's voice being included in official plans. Research on inclusion suggests that effective coordination depends on organizational conditions as well as teachers' attitudes (Bertills & Björk, 2024; Karamani et al., 2024). Formal procedures for inviting PE teachers, circulating assessment data before meetings, and reviewing goals may increase

opportunities for substantive participation. The present cross-sectional data cannot, however, identify why any individual teacher reported a lower invitation rate.

A teacher-agency interpretation helps explain why strong role recognition need not translate automatically into action. Institutional scheduling, perceived legitimacy of PE expertise, access to student records, and team routines may facilitate or constrain involvement (Hendriksen et al., 2024). These mechanisms remain hypotheses because the questionnaire did not independently measure leadership behavior, meeting policies, workload, or team communication. A subsequent study could combine logs of meeting attendance, interviews, and document analysis with teacher surveys to test which conditions matter most.

Recognition Is Not the Absence of Marginalization

The original manuscript's term "marginalization" creates a conceptual problem because positively worded items on role importance and student participation cannot substantiate a conclusion that marginalization is low. A teacher might recognize the value of PE, believe that colleagues share this perception, and nevertheless lack formal opportunities to propose or revise goals. The revised label "role recognition and participation" remains a pragmatic description of mixed items, not evidence of a validated unitary construct. Future instruments should separate subjective value, team acknowledgment, structural access, participation frequency, and perceived barriers.

Positioning the Findings in the Saudi Context

The analysis provides a small, focused account from Jeddah rather than an estimate for all schools in Saudi Arabia. The near-exclusive representation of male respondents, the purposive design, unclear school sampling frame, and retention of 15 teachers without current ASD enrollment constrain transferability. Nevertheless, the results identify specific school processes that can be

investigated with more rigorous methods. The findings complement existing Saudi evidence on inclusive PE attitudes by foregrounding contributions to individualized planning rather than attitudes alone (Alhumaid et al., 2022). They also align with international calls to support PE educators through specific preparation and collaborative arrangements (Nemček et al., 2024; Tarantino et al., 2025). Evidence from Saudi schoolteachers in Jazan similarly highlights the importance of assessing autism knowledge rather than assuming teachers possess equivalent preparation (Otaif et al., 2023).

Study Limitations and Research Priorities

Several limitations are material to interpretation. First, self-reported Likert responses may reflect social desirability and recall errors. Second, the sample is small, nonrandom, and restricted to one governorate; associated uncertainty should not be concealed through generalized language. Third, reported eligibility criteria are not fully consistent with the respondents' descriptions of current ASD service and school type. Fourth, some instrument domains combine different constructs, so composite averages and internal consistency should not be read as validation. Fifth, the original report does not document ethics approval details, response rates, missing responses, or the instrument's complete administration protocol. Sixth, the original raw data were not provided for subgroup comparisons or independent quality checks.

A larger multisite study could pre-register hypotheses, establish an explicit eligible-school frame, stratify by ASD service and teaching level, assess content validity systematically, and test the questionnaire structure with sufficiently powered factor analysis. Researchers should include objectively recorded meeting attendance, IEP goal quality, teacher contributions, and, ultimately, meaningful student participation measures. Qualitative interviews with parents and students with ASD were appropriate, special educators, administrators, and PE teachers could distinguish formal inclusion from routine collaborative practice. Those additions would

move the field beyond self-reported perceptions toward clearer evidence of mechanisms and outcomes.

Conclusion

PE teachers in this exploratory Jeddah sample rated their professional role highly and reported generally favorable preparation and collaboration perceptions. The comparatively lower ratings for meeting invitations and IEP goal formulation identify potentially important gaps between perceived value and formal participation. Because a third of the respondents did not currently work in schools serving students with ASD, the findings do not demonstrate uniform current involvement in ASD-specific IEP activities. The strongest practical implication is to link PE teacher preparation with documented opportunities to participate in assessment, goal writing, implementation, and review. Representative data and observational measures are needed before broader effectiveness, or policy claims can be made.

Recommendations

Following recommendations are made based on research findings:

1. Schools should routinely invite relevant PE teachers to individualized planning meetings and establish a documented route for PE assessment findings, adaptation proposals, and progress updates.
2. Pre-service and continuing professional development should emphasize ASD-responsive communication, sensory and behavioral supports, individualized motor assessment, measurable goal writing, adaptation of rules and equipment, and data-based review of participation.
3. Education administrators should clarify PE teachers' roles in school IEP procedures, provide shared planning templates, and create feasible coordination time across PE, special education, classroom teaching, and families.
4. Future evaluations should assess how often teachers attend meetings and how PE-related

targets appear in written plans, not only whether teachers believe their contributions are valued.

5. Further research should recruit larger, diverse samples across Saudi regions and distinguish teachers with current ASD enrollment from teachers reporting only prior experience or general perceptions.

Declarations

Ethical Considerations: Informed consent was obtained from all participants, and confidentiality, anonymity, voluntary

participation, and the right to withdraw were ensured.

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Author Contributions: The author was solely responsible for the conceptualization, study design, data collection, analysis, interpretation, and preparation of the manuscript.

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