

Exploring educators' preparedness and program implementation in adapted physical education classes for individuals with autism spectrum disorder

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Abstract:

This research aims to investigate current Adapted Physical Education (APE) lessons for individuals with Autism Spectrum Disorder (ASD) from the perspective of educators, with a focus on their readiness to teach, program delivery, and effectiveness. This study employs a qualitative research method to capture the experiences and perspectives of APE educators regarding the challenges they face. The study sample comprises 27 APE educators providing lessons for individuals with ASD in two private institutions in Istanbul and Ankara. Criterion sampling, a purposive selection method, guided the participant selection process. Additionally, emerging themes from face-to-face interviews were thoroughly examined. The results indicated that educators required additional training for APE lessons, relying on their existing knowledge and experience. Despite this, they acknowledged witnessing positive impacts on individuals with ASD and their families. These findings underscore the importance of additional training and professional development opportunities for APE educators to enhance their ability to effectively support individuals with ASD.

Keywords: special education, physical activity, children, education

Introduction

"Autism spectrum disorders (ASD) are a diverse group of conditions. However, they are often characterized by difficulty with social interaction and communication (World Health Organization [WHO], 2022). ASD is a neurodevelopmental disorder of neurobiological origin. It manifests itself with speech, motor movement or use and affects communication and social interaction development with repetitive and restricted behaviours, activities, and interests (American Psychiatric Association [APA], 2013). Social communication deficits can include impairments in joint attention and social communication and difficulties using verbal and nonverbal communication for social interaction. They also show little flexibility in changing routines and hypersensitivity and hypersensitivity to sensory information (Lee et al., 2023).

It is known that many individuals with ASD avoid social contact, prefer social isolation, and cannot so establish and maintain age-appropriate relationships (Cola et al., 2022). These social disorders, if unaddressed, can lead to emotional sensitivity, disappointment, depression or even extreme stress (Ghanouni et al., 2019). In addition, recent research suggests that individuals with ASD often exhibit attention deficit and hyperactive disorder symptoms, hypersensitive or insensitive to certain sensory stimuli, excessive selectivity and intense attachment, fine and gross motor development deficiencies, and object control skills (Schurink et al., 2012; Cook et al., 2013; Whyatt & Craig, 2013; Libertus et al., 2014; Matheis & Estabillo, 2018; Hollingdale et al., 2020; Jachyra et al., 2021). Frequently, individuals with ASD may be prone to delays in basic motor skills, limited motor functions, inconsistency in muscle development, and deficiencies in mobility (Miller et al., 2021; Hortal-Quesada & Sanchis-Sanchis, 2022).

Sensory functioning, muscle weakness and motor planning problems are generally cited as the cause of these disabilities identified in individuals with ASD. There are several commonly identified motor disabilities in individuals with ASD: decreased muscle tension, toe walking, perception and balance difficulties, difficulties in gross and fine motor skills, inability to perform specific movements correctly, hand-eye coordination and general coordination deficiency (Staples & Reid 2010; Fournier et al., 2010; Memari et al., 2013; Ohrberg, 2013; Pan, 2014; Srinivasan et al., 2014; Harris 2017; Licari et al., 2020; Gordon & Pennington, 2022). Deficiencies in these motor skills inevitably impair functional activities such as social interaction and communication (Bhat et al., 2011). For example, MacDonald et al. (2013) found that poor object control in school-age children commonly correlates with a lack of social skills.

The abilities and needs of individuals with ASD vary and may change over time. While some individuals with ASD can live independently, others have severe disabilities and need lifelong care and support (WHO, 2022). Therefore, there is an excellent need for applications to eliminate such negativities experienced due to the developmental characteristics of individuals with ASD. In this direction, studies are carried out by various

organizations in the United States of America (USA) to compile scientifically based practices that support the development of individuals with ASD (The US National Autism Center [NAC], 2009; Dunn & Leitschuh, 2014). One of these organizations, the US National Autism Center (NAC) (2009), presents scientifically based criteria for practices used by families, teachers and experts who provide services to individuals under the age of 22 with ASD should meet. They have also initiated the National Standards Project to determine the level of support for these applications offered to individuals with ASD. Though collecting data and officially reporting the positive impact is challenging, implementing scientifically-based exercise programs by the NAC and NPNC seems promising (NAC, 2009).

Adapted physical education (APE) is a sub-discipline that emphasizes physical education for individuals with special needs. This term generally refers to school-based programs for students aged 3 to 21. A more global term adapted to physical activity (APA) refers to lifelong programs, including after-school sports and recreation. Various definitions of APE have been suggested over the past 20 years. However, the definition made by Dunn and Leitschuh (2014) seems most appropriate; APE programs have the same goals as the regular physical education program but with adjustments in regular presentations and lessons to meet the needs and abilities of exceptional students. Gárdos and Mónus (1991) describe adaptive physical education as a scientific field capable of improving and even preventing the observable side effects of the disability using physical education methods. Finally, Sherill and Hutzler (2008) define APA as coaching, training or empowering activities performed by professionals to achieve the physical activity goal of all individuals with limitations based on movement and social community.

APE is a rich field in which all aspects can influence exercise. Individuals with special needs should be encouraged to achieve the most significant possible independence and self-actualization to lead a whole social life (Nuñez et al., 2018; Mullor et al., 2020). As soon as we exclude or reduce individuals' active participation in physical education and sports sessions, they are deprived of the opportunity for socialization and the educational resources they are entitled to (Nuñez et al., 2018).

This research aims to investigate educators' readiness to teach APE programs, the programs delivered, and the effectiveness of these programs when working with individuals with ASD from the perspective of the educators.

Materials and Methods

Research Model

The current study employed the phenomenology design, a qualitative research method, to describe the perspectives and experiences of educators who conducted APE regarding their challenges. Phenomenology studies enable individuals to convey their experiences and describe a lived phenomenon from their unique perspective (Patton, 2014; Yıldırım & Şimşek, 2016).

Approval was obtained from the Scientific Research and Publication Ethics Committee of Istanbul Aydın University, Social and Human Sciences, before commencing the research. The educators were informed about the study and its purpose during the data collection phase.

Study Group The study group of the research consists of 27 educators (19 women, 8 men) who work in 2 private education institutions operating in Üsküdar district in Istanbul and Yenimahalle district in Ankara and currently give APE lessons to individuals with ASD. Sample selection was made with "criterion sampling", one of the purposive sampling methods. The researcher can create the criteria or use a predetermined list (Miles & Huberman, 1994). One of the institutions where the participants work is in Ankara, the capital of Turkey, and the other is in the province of Istanbul, whose population exceeds 15 million. Therefore, while selecting the institutions selected from these two cities, it was taken as a criterion that the institutions include APE courses for individuals with ASD. In the study, the names of the participants were not disclosed; they were coded and kept confidential by the researchers. Therefore, while quoting the participants' views, a coding system such as "P1, P2, P3", which expresses that they are participants, was preferred.

The age distribution of educators varies between 23 to 36 years, and most started their careers working with individuals with special needs. Only a small number of them started teaching in other fields and later transferred to work with individuals with special needs. Only three educators had opted to train with special needs individuals due to family members having ASD. In addition, it is seen that only 3 of the educators have a person with special needs in their families.

Table 1. Department of Educators graduated

Department	Frequency	Per cent
Physical Education and Sports Teaching	5	18,5
Primary School Teaching	4	14,8
Special Education Teaching	7	25,9
Coaching Training	3	11,1
Child Development and Education	4	14,8
Preschool Teaching	2	7,4
Sports Management	1	3,7
Physical Therapy and Reh.	1	3,7
Total	27	100,0

Upon examination of Table 1, it was observed that 25.9% of educators were engaged in unique education teaching, while 18.5% were involved in physical education and sports teaching. Furthermore, 14.8% of the educators were focused on primary school teaching and an equivalent percentage were dedicated to child development and education. It was also noted that three trainers with coaching degrees were needed to gain pedagogical education. Only two participated in sports and physical activity for individuals with special needs. These findings suggest a need for further education and training for coaches lacking a pedagogical background, especially in special needs populations.

Data Collection Tool

A personal information form and a semi-structured interview form were used to collect data. The demographic information of the educators (gender, age, educational status, Etc.) was obtained with the personal information form. The opinions of educators delivering the APE lessons to students diagnosed with ASD were collected using a semi-structured interview form. A qualitative interview is one of the data collection tools used to determine individuals' experiences, knowledge, attitudes, and feelings through open-ended questions (Miles & Huberman, 1994). In order to design practical interview questions that would uncover educators' perceptions regarding APE, a thorough review of the relevant literature was conducted. Draft questions were formulated based on this literature review to elicit comprehensive responses from participants. To enhance the content validity of these draft questions, three Associate Professors who specialize in APE and qualitative studies were invited to review them. After receiving valuable feedback, the interview questions were finalized and administered face-to-face to the educators. Each interview spanned 30 to 45 minutes, with audio recordings to ensure precise capture of the gathered data.

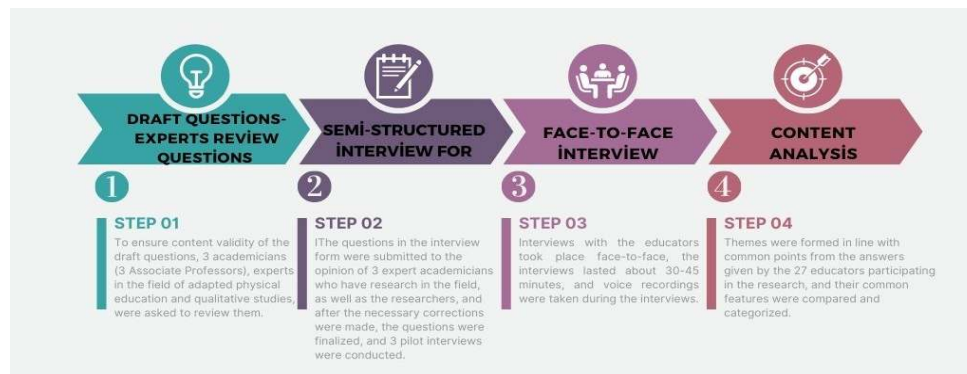


Figure 1. This figure depicts the step-by-step research process followed in the study. First, a set of draft questions were developed based on expert opinions. Next, a semi-structured interview form was created to guide the data collection process. Subsequently, face-to-face interviews were conducted with the study participants using the interview form. Finally, the collected data were subjected to content analysis, involving a series of rigorous analytical stages.

Data Analysis

The audio recordings of the interviews were translated into plain text without making any changes and then analyzed using a content analysis technique. The primary purpose of content analysis is to reach concepts and make connections that can explain the collected data (Lytle et al., 2010). Themes were formed in line with common points from the answers given by the 27 educators participating in the research, and their standard features were compared and categorized.

Validity and Reliability

In qualitative research, reporting the collected data in detail and explaining how the results are reached are essential criteria for validity (Yıldırım & Şimşek, 2016). In order to maintain the validity and reliability of the present research, two fundamental procedures were implemented. Firstly, a detailed description of the data analysis process was provided. Secondly, all the data collected during the study was presented comprehensively, both in quantitative and qualitative forms, in the findings section.

These measures were taken to ensure the research's trustworthiness and rigour and allow for transparency and reproducibility of the results. The questions in the interview form were submitted for review by three expert academicians who have research in the field. After the necessary corrections were made, the questions were finalized, and three pilot interviews were conducted. The reliability of the research was calculated using the formula of Miles and Huberman (1994) ($\text{Trust} = \text{consensus} / (\text{consensus} + \text{disagreement})$) by determining the number of times a consensus was reached and the number of disagreements. The result of the reliability calculation for the research is 96%. According to Miles and Huberman (1994), a study is considered reliable if there is a 90% or more consensus among the researchers and experts in qualitative research. In this case, this study is reliable.

Results

Table 2. Age groups that educators primarily work

Age	Frequency	Per cent
3-7 Years	12	44,4
8-12 Years	11	40,7
12-15 Years	4	14,8
Total	27	100,0

According to current research, individuals with ASD are most commonly served by educators during the 3-7 and 8-12 age ranges, with a significant decline in the number of individuals receiving services once they reach the 12-15 age range. It can be said that the symptoms of ASD are seen more clearly at preschool and primary school age. The social and academic difference between these children and their peers is more of a factor as children are expected to reach certain developmental milestones. Educators stated that the lessons had positive gains for individuals with ASD. It was concluded that there should be special education programmes to train educators to support individuals with special needs and deliver APE. Educators from different branches tend to work in special education, which shows a need for specially trained APE educators.

Table 3. Educators' opinions on whether ASD individuals acquire needed skills

	Frequency	Per cent
Yes	21	77,8
Partially	6	22,2
Total	27	100,0

The data presented in Table 3 indicates that a significant majority of the educators who participated in the study, precisely 77.8%, held the belief that individuals with ASD acquire desirable skills as a result of their educational interventions, whereas 22.2% of the educators reported that a certain level of skill acquisition was attained. Notably, none of the interviewed educators expressed the belief that students with ASD left their classes without any acquired skills. These findings suggest a generally positive attitude among educators regarding the potential for individuals with ASD to benefit from educational interventions.

Table 4. How many hours a week does an individual with ASD attend classes

	Frequency	Per cent
1-10 Hours	14	51,9
11-20 Hours	9	33,3
21+ Hours	4	14,8
Total	27	100,0

Table 4 displays the distribution of students based on their weekly attendance in hours. The results indicate that most students, comprising 51.9%, attend classes for 1-10 hours per week, while 33.3% attend classes for 11-20 hours per week. The remaining 14.8% of students attend classes for more than 21 hours per week. These findings provide insight into the frequency of attendance among the student population and may inform program scheduling and resource allocation decisions.

Table 5. The years of experience, teaching methods, areas of specialization, and most dealt challenges for educators participating in the research

Teaching Year (Working Years with Individuals with ASD)	Graduated Department	Methods and Techniques	Types of Skills Working Intensively	The Challenges They Face
5 (5)	Physical Education and Sports Teaching	Modelling, Telling, Sensory Integration	Gross Motor, Social Skills	Behaviour Problem
6 (6)	Primary School Teaching	Audio And Visual Methods	Fine Motor, Gross Motor, Social Skills,	Behaviour Problem
5 (5)	Physical Education and Sports Teaching	Social Communication, Audio and Visual Methods	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Behaviour Problem
3 (3)	Child Development and Education	Music, Physical Education and Sports, Painting	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Behaviour Problem
8 (7)	Coaching Training	Sensory Integration	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Behaviour Problem
3 (3)	Coaching Training	Drama	Fine Motor, Gross Motor, Balance, Cognitive Skill	Lack of Communication
2 (1)	Special Education	Speech Therapy	Cognitive Skill, Social	Behaviour Problem,

	Teaching		Skill	Lack of Communication
12 (10)	Special Education Teaching	Behaviour Management	Balance	Lack of Communication
10 (10)	Special Education Teaching	Behaviour Management	Gross Motor	Behaviour Problem
9 (6)	Special Education Teaching	Behaviour Management	Fine Motor, Gross Motor, and Social Skills	Behaviour Problem
9 (9)	Special Education Teaching	Music	Fine Motor, Gross Motor	Behaviour Problem
5 (5)	Special Education Teaching	Social Communication	Gross Motor, Balance	Behaviour Problem
4 (4)	Child Development and Education	Music, Painting, Physical Education and Sports	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Behaviour Problem
1 (1)	Sports Management	Educational Games	Fine Motor, Gross Motor, Social Skill Balance	Behaviour Problem
6 (6)	Child Development and Education	Physical Education and Sports	Fine Motor, Gross Motor, and Cognitive Skills	Behaviour Problem
6 (6)	Physical Therapy and Rehabilitation	Physical Education and Sports	Fine Motor, Balance, and Cognitive Skills	Lack of Communication
2 (2)	Coaching Training	Educational Games	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Excessive Interference by The Family
3 (3)	Primary School Teaching	Behaviour Management	Fine Motor, Gross Motor, Balance, Cognitive Skill	Behaviour Problem, Excessive Attachment to Family
7 (7)	Physical Education and Sports Teaching	Visual Methods, Educational Games	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Behaviour Problem, Excessive Attachment to Family
7 (7)	Physical Education and Sports Teaching	Drama, Educational Games	Fine Motor, Balance, Cognitive Skills, Social Skills	Behaviour Problem
2 (2)	Physical Education and Sports Teaching	Drama, Educational Games	Gross Motor, Cognitive Skill, and Social Skills	Behaviour Problem
3 (1)	Preschool Teaching	Drama	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Behaviour Problem, Lack of Communication
3 (3)	Child Development and Education	Social Communication	Fine Motor, Gross Motor, and Social Skills	Unwillingness
3 (1)	Preschool Teaching	Drama, Educational Games	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Lack of Communication
9 (9)	Primary School Teaching	Cooperative Learning	Fine Motor, Gross Motor, Cognitive Skill, Social Skill, Balance	Behaviour Problem
2 (2)	Primary School Teaching	Drama, Social Communication	Cognitive Skill, Social Skill	Lack of Communication
6 (6)	Special Education Teaching	Modelling, Telling, Sensory Integration	Gross Motor, Cognitive Skill, and Social Skills	Lack of Communication, Behaviour Problem

Upon examination of Table 5, it becomes apparent that the challenges faced by educators when delivering classes to learners with ASD vary significantly, which in turn affects their approach to teaching. These differences are likely partly due to the departments from which the educators graduated. A connection can be made between the educators' graduate programs, primarily in early years and primary education, which often focus on behaviour management and educational games. Despite their general or sports education backgrounds, many participants began their careers working directly with individuals with special needs.

Educators reported that individuals with ASD often exhibit behavioural problems in the classroom, and the intensity of these behaviours can escalate quickly, making it challenging to regain calm. When individuals with ASD struggle with the skills being taught, they may feel frustrated and become uncommunicative. However, educators' comments suggest that these learners respond positively and become more social and self-confident when they see what they can achieve in their lessons and find opportunities to have these experiences.

The educators' work aligns with their interests and experiences, typically focusing on general physical education and sports programs that include fine and gross motor skills, with special attention given to balance, a particular challenge for individuals with ASD. Cognitive and social skills are also emphasized. The types of skills educators focus on are based on their personal opinions, and they often encounter behavioural problems in learners with ASD. These behavioural problems manifest as nervous episodes that can lead to self-harm or harm to their environment. In addition to behavioural challenges, communication breakdowns, one of the primary deficiencies, and difficulties in expressing themselves are triggers for behavioural problems. Educators feel that the often-wilful nature of individuals with ASD and issues with expressing themselves and adapting to routine changes negatively impact their social abilities.

In conclusion, educators working with learners with ASD face various challenges that can vary significantly. The educators' background and experiences, as well as the learners' individual needs, play a crucial role in determining their approach to teaching. Understanding the difficulties faced by learners with ASD and the challenges educators encounter can provide valuable insights into how to support this population better. By emphasizing skills essential for their development, educators can help learners with ASD overcome challenges and thrive academically and socially.

Table 6. Importance of APE for educators

Significance of physical education
P1. It is the most productive tool for skills and teachings about life
P2. Learning more efficiently
P3. They are learning while having fun
P4. They learn and have fun at the same time
P5. Thanks to these activities, they gain many important skills and developments and help with individualization.
P6. They gain many skills and development through these activities.
P7. Supplementary factor
P8. The gains they acquire will be the basis of their attitudes and behaviours in the future.
P9. It is important in children's gross motor and fine motor development.
P10. It has a positive effect on development
P11. Plays a role in the completion of development
P12. Plays an important role in socialization
P13. A major factor in the education of individuals with ASD
P14. It is indispensable because everyone learns and has much fun and is happy.
P15. An appropriate teaching method for individuals with ASD
P16. It is proud to prepare individuals with special needs for the future and to prepare them for life.
P17. Supportive and therapeutic
P18. Both entertainment and education
P19. Therapeutic and supportive
P20. More efficient for students with special needs
P21. As they gain experience, their approach to people becomes even more positive, and I feel very proud of this.
P22. They gain skills, become motivated, become happy, develop, make friends, and benefit their future life.
P23. Learning in a different and fun way
P24. Preparing for the future with experiences and fun
P25. Playful activities are productive
P26. Supplementary factor
P27. The missing piece in the puzzle

Table 6 presents the findings of this study, indicating that educators consider APE lessons to be a crucial and supplementary aspect of the individualized education process for individuals with ASD. The APE lessons

provided individuals with ASD the chance to acquire novel skills and engage in enjoyable experiences. In addition, the educators underscored the therapeutic and supportive aspects of these lessons.

These results highlight the significance of incorporating APE into the education curriculum for individuals with ASD. The findings suggest that APE lessons could play a vital role in promoting the physical, cognitive, and socio-emotional development of individuals with ASD, thereby enhancing their overall well-being. Furthermore, the educators' emphasis on APE's therapeutic and supportive nature underscores its potential as a practical intervention for individuals with ASD, particularly in addressing their unique needs and challenges.

Overall, the results of this study offer valuable insights into the potential benefits of APE for individuals with ASD and support the importance of integrating it into the education process. Future research should further explore the effectiveness of APE in promoting the holistic development and well-being of individuals with ASD.

Table 7. Some examples of the attitude of individuals with ASD and their families from the perspective of educators

The approach of individuals with ASD in APE lessons:	The approach of families of individuals with ASD in APE lessons:
<i>P1; They are enthusiastic about games and interests but quickly get bored. After they start having fun in the lessons and experience the feeling of success, they come to the lessons very eagerly.</i>	<i>P3; "Families are pleased because their children have fun and learn."</i>
<i>P2; "Sometimes he seems very reluctant, but overall, they are good, and the lessons are very productive."</i>	<i>P4; "Families are happy with the development of their children."</i>
<i>P3; "They learn while doing; it makes them very happy to have the opportunity to try in the lessons and to see that they can succeed."</i>	<i>P5; "They have a grateful and positive perspective."</i>
<i>P5; "Although they are generally happy and excited in the lessons, they can sometimes be reluctant due to some situations they experience during the day."</i>	<i>P16; "They have a very positive and supportive attitude towards the courses."</i>
<i>P7; "Although they sometimes show behavioural problems in participating in the lesson, these behaviour problems start to fade over time, and they start having fun in the lessons."</i>	<i>P17; "They are willing and interested; they follow each lesson carefully and support us."</i>
<i>P13; "Sometimes there are moments when they do not want anything, but mostly they enjoy it a lot."</i>	<i>P19; "They carefully follow each lesson and the education process of their children."</i>
<i>P14; "Even though they are willing, they start to get bored when they cannot succeed, they try to disrupt the activity, but this boredom leaves itself to excitement and peace over time."</i>	<i>P22; "Supporting and motivating, they are grateful."</i>
<i>P16; "They are curious and excited because they want to learn and practice as soon as possible."</i>	<i>P23; "They are eager, excited and happy for their children."</i>
<i>P23; "Seeing what they can achieve during the lessons makes them enjoy the lesson and increases their participation."</i>	<i>P27; "As they see the happiness in their children, their attitudes towards lessons become more enthusiastic."</i>
<i>K25; "Although they are very reluctant at times, they become more productive in the following lessons."</i>	
<i>P27; "The number of people who show a negative approach is very few; they are happy when they succeed."</i>	

Table 7 presents the educators' comments on the adaptive physical education lessons provided to individuals with ASD. Despite frequent behavioural problems, the educators noted that the individuals with ASD demonstrated positivity and enthusiasm during the lessons, often expressing happiness and excitement. Although resistance to activities was observed in the initial lessons, the individuals gradually enjoyed themselves and exhibited a positive attitude towards the lessons as they progressed.

The families of the individuals with ASD also provided positive feedback on the APE lessons, describing them as supportive and motivating. In addition, the educators observed a willingness from the families to participate in the lessons. They reported that the individuals with ASD appeared to enjoy the lessons, which also brought happiness to their families.

The educators emphasized that adaptive physical education should be included under the umbrella of special education, as it can contribute positively to the physical, mental, cognitive, and sensory development of individuals with ASD. The educators further highlighted that the lessons play an essential role in the social adaptation process for individuals with ASD, allowing them to learn new skills and apply them in their daily lives outside the classroom.

In summary, the educators reported that the individuals with ASD enjoyed the APE lessons and were eager to learn new skills, which their families confirmed. Overall, the findings suggest that adaptive physical education has the potential to positively impact the physical, mental, and social well-being of individuals with ASD, and it should be considered an integral part of their special education programs.

Discussion

The present study explores the viewpoints of educators who provide APE programs to individuals diagnosed with ASD regarding their level of preparedness for teaching, the quality and nature of education delivered, and their comprehension of student and family responses to the programs. It has been established through research and practical experience that individuals with ASD may experience significant deficits in physical fitness and motor skills. However, appropriate APE programs have been shown to facilitate the development of physical fitness and motor skills while promoting health maintenance, thereby enabling lifelong learning and participation in recreational and social programs.

Finding a suitable teaching position in Turkey is challenging; it can then be said that working educators chose this job even though they did not have knowledge and experience with ASD or their educational requirements. Adapted physical educators should represent a select group from specialized physical education and educator preparation programs. However, there has yet to be an APE department within universities in Turkey. These educators also have content knowledge about assessment, individualized educational planning, effective teaching, and evaluation of teaching effectiveness via student achievement (Lytle et al., 2010). When the departments from which the educators graduated are examined, no educator whose field of expertise is adapted or connected to APE. As it is known, pedagogical knowledge and the ability to teach effectively to increase student achievement are essential qualities for any educator. In addition, a desirable "APE instructor" should demonstrate effective teaching behaviours about other work-related professional skills, namely collaborative teaching, interdisciplinary counselling teaching, and behaviour management (Lytle & Todd, 2009; Gómez-Marí et al., 2021).

Educators who work with children with ASD require a combination of general and special education skills and qualifications. However, in Turkey, no undergraduate or graduate programs are specifically designed to train educators or specialists to work with students with special educational needs, particularly with ASD. Consequently, there is a lack of recognition of the importance of providing trainee educators with the necessary skills to support students with ASD. To address this gap, training centres have emerged to supplement the shortage of qualified personnel by collaborating with educators from other fields in the education process. Mainly, physical education and exceptional education graduates are recruited to this field. However, since APE teaching is multidisciplinary, we cannot say that educators adequately educate individuals with ASD.

Observations indicate that educators employ diverse approaches and methodologies, which can be attributed to the variances in their respective fields of study. Considering the gaps in formal training for work with ASD, it is normal for the methods applied to differ. However, it should not be forgotten that the education process of individuals with ASD is unique and specific needs should be met. For this reason, it would be more appropriate for the educators who provide these lessons to have a working knowledge of up-to-date unique education methods and techniques and to follow a standard curriculum. Participation in such programs, prepared in line with individuals' needs and developmental characteristics, significantly contributes to the multi-faceted development of individuals with ASD (Celiberti et al., 1997; Rosenthal-Malek & Mitchell, 1997; Yilmaz et al., 2004; Lang et al., 2010; Oriel et al., 2011; Sowa & Meulenbroek, 2012; Movahedi et al., 2013; Srinivasan et al., 2014; Ferreira et al., 2019; Gómez-Marí et al., 2021).

Recent studies have reported the presence of a variety of motor disorders, including clumsiness, abnormalities in motor coordination, postural instability, and impaired gross and fine motor movements, in an increasing number of individuals with ASD (Bhat, 2021). When the general characteristics of individuals with ASD are examined, the result is directly proportional to the deficiencies. Children with ASD have gross motor disorders that affect complex coordination skills. There is a tendency towards lower socialization skills among ASD individuals with gross motor disorder (Pusponegoro et al., 2016). Fine and gross motor skills are strongly connected to adaptive behaviour skills in children with ASD (MacDonald et al., 2013). Social communication and social adaptation problems experienced by individuals with ASD are mainly due to their struggles expressing themselves. The challenges faced in other skill sets cause an escalation of social communication problems. The decrease in the self-confidence of individuals with ASD due to a lack of competency in fine and gross motor skills often causes them to isolate themselves from society and limit their already restricted social communication. Children with gross motor skills and balance problems are more likely to fall in during daily activities and may have problems developing their social skills (Stins et al., 2015). Therefore, educators are commonly seen to focus on work with balance. Many children with ASD tend to move on their toes, which

reduces their balance and stamina, making them more likely to fall, become tired, and less likely to participate in social activities. These motor symptoms can affect the child's ability to perform activities needed in an entire daily life, such as playing with friends, participating in sports or hobbies, and even just walking.

It has been shown that when individuals with ASD exercise, it has benefits such as improved balance, muscle strength, and cardiovascular fitness, ultimately, a better quality of life; it also has psychosocial benefits (Heller et al., 2011; Kapsal et al., 2019; Yarımkaça & Esentürk, 2022). As a result of participating in physical activity for 30 minutes, positive effects such as a decrease in aggressive behaviours, a decrease in the risk of depression and prevention of weight gain were observed in individuals with ASD (Dodd & Shields, (2005). Individuals with special needs often need help participating in regular exercise, physical activity, or sports without any concessions being made by educators. In this direction, some adaptations should be made in programs for individuals with special needs in order for them to participate in physical education and benefit from these educational activities (Block, 2016; Jachyra et al., 2021; Orhan et al., 2023).

APA training programs have the same goals as regular training programs. However, they are programs adapted to meet the abilities and needs of students with special needs (Dishman et al., 2021; Orhan et al., 2023). Therefore, when the opinions of the educators about the lessons are examined, they emphasize that APE lessons are essential for special education.

In the literature, it is stated that regular physical exercise protects against the onset of depression, feelings of anxiety and distress and has a preventative effect on the onset and symptoms of cognitive decline (Dishman et al., 2021). In addition, educators stated that they positively affect the physical and mental health of individuals with ASD and that lessons are essential in the unique education process.

Defining problem behaviours is difficult, though Emerson's (2001) explanation of these behaviours is pretty comprehensive. According to his definition, problem behaviours do not comply with cultural norms regarding intensity, frequency, and duration, are dangerous for individuals and those around them, and seriously prevent them from reaching social spaces. Studies conducted with individuals with ASD have repeatedly found a relationship between inactivity and these commonly identified problem behaviours (Pan et al., 2017; Orhan, 2020). Lundqvist (2013) described the term "problem behaviour" as stereotypical behaviour, abnormal behaviour such as self-harming, aggressive or destructive behaviour and hyperactivity, and disordered behaviour. In addition to these problem behaviours potentially harming the ASD individual, they can also pose a risk to carers and educators responsible for them (Wing, 1997; Lloyd & Kennedy, 2014).

In the definition of ASD, self-stimulating and repetitive behaviours are included as a diagnostic criterion, as well as inadequacies in social and communicative skills. It was identified from the educator interviews that the behaviour problems they deal with are mainly due to the ASD individuals' inability to express themselves clearly. They manifest themselves as reluctance and anxiety caused by the inability to tolerate failure in their activities. Although aggressive and self-harming behaviours are not diagnostic criteria for ASD, they can be commonly observed in individuals with ASD (Lloyd & Kennedy, 2014).

Children with ASD often have frequent tantrums that may last longer and be more severe than is typical, but these tantrums decrease with age. These tantrums may occur after a request is turned down, the occurrence of an unwanted or unexpected situation in the environment or the disruption of a routine. Temper tantrums may also occur for no reason or due to seemingly insignificant events (Wing, 1997; Lloyd & Kennedy, 2014).

Conclusions

To conclude, it has been seen those educators working with ASD individuals, in general, do not have sufficient knowledge, pedagogical education specific to special needs, or the skill sets to deliver consistent or adequate APE courses. It was found that educators give classes based on their knowledge and experience, even though most of them have worked with special needs programmes from the onset of their careers. In addition, educators are faced with frequent and often intense behavioural problems during the lessons, and they have not been trained to deal with this in a way that is safe physically and mentally for themselves or the ASD individuals. The difficulties faced by individuals with ASD in academic life and the need for school support appear to be most prominent in the early years and primary education phase. Notwithstanding, educators have reported that individuals diagnosed with ASD have responded positively to the APE lessons and have acquired new skills. These educators have also expressed their belief that the learning of sports skills has had a beneficial impact on individuals with ASD. Moreover, the families of these individuals have also found the lessons to be advantageous, inspiring, and accommodating, as per the assessments of the educators. It should be noted that although the educators did not receive formal training for the APE lessons, they could still deliver them effectively.

In Türkiye, as untrained educators have been found to have a positive influence on the lives of ASD individuals, it is clear that trained educators following consistent programmes could have an even more significant impact. Therefore, undergraduate and graduate programs should be opened to meet the needs of educators or specialists in educating individuals with ASD and to expand APA courses in educational institutions. In this way, more individuals with ASD can benefit from the right educational opportunities.

Institutional Review Board Statement: All subjects gave informed consent for inclusion before participating in the study. The Declaration of Helsinki conducted the study, and the protocol was approved by the Ethics Committee of Istanbul Aydin University no. 2022/5 from 24.03.2022

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study to publish this paper.

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