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Sociodemographic and Clinical Profile of Children with Poor School Readiness

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ABSTRACT

Objective: School readiness refers to the physical, emotional, social, and cognitive competencies that enable children to succeed in primary education. While chronological age is the primary criterion, it alone is insufficient, as developmental pace, psychiatric conditions, and socio-environmental factors also play a critical role. Our aim was to identify the sociodemographic and clinical characteristics of these cases, to raise awareness in this area, and to contribute to the development of preschool intervention strategies for children who do not attain sufficient school readiness.

Methods: This study retrospectively evaluated children who presented to the Child and Adolescent Psychiatry outpatient clinic of Atatürk University Research Hospital between 2019 and 2024 for school readiness assessment and were found to have insufficient readiness. Sociodemographic characteristics, psychiatric and medical diagnoses, developmental histories, and results of The Denver II Developmental Screening Test (DDST-II) and The Metropolitan School Readiness Test were obtained from clinical records. Data were analyzed using SPSS 25.0, with descriptive statistics reported as frequencies, percentages, means, and standard deviations.

Results: Sixty children were included (21.7% female, mean age 74.9 months). The most common psychiatric diagnoses were intellectual disability (28.3%), speech and language disorder (15%), and Attention Deficit Hyperactivity Disorder (6.7%), while 23.3% had multiple diagnoses. 33.3% of the cases scored below 65 points on The Metropolitan School Readiness Test and thus did not achieve school readiness; 13.4% scored 65 points or above and were found to be at an average or a high normal level. In addition, 16.7% could not respond to the test, and 36.7% were not administered the test. The DDST-II revealed that 88.2% of tested children had developmental delays compared to peers.

Conclusion: Children's school readiness is shaped by multiple factors and requires a multidimensional approach. Early diagnosis and intervention, expanded preschool education, enriched home learning, and increased parental awareness are essential to support readiness.

Keywords: School readiness, child and adolescent psychiatry, the metropolitan school readiness test, the denver II developmental screening test

INTRODUCTION

School readiness refers to a child's attainment of age-appropriate physical and emotional well-being, along with the development of adequate social, communicative, and cognitive skills necessary for success at school (1). School readiness is considered synonymous with being prepared for school. Although age is the primary criterion when evaluating a child's readiness for school, reaching a certain chronological age alone is not always sufficient for school readiness. Children of the same age may differ in their developmental pace, cognitive levels, and socio-economic and cultural opportunities, which in turn affect their ability to meet the expectations of primary school. The factors influencing children's school readiness can be grouped into two categories: individual and familial/environmental. Individual factors include physical, cognitive, and emotional development, while familial/environmental factors encompass the child's sociocultural environment and preschool education (2). Among individual factors, psychiatric disorders are frequently observed. These diagnoses may include Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), Intellectual Disability

(ID), communication disorders, and other neurodevelopmental disorders (1,3). When evaluating a child's school readiness, a comprehensive assessment that incorporates both individual and environmental factors should be conducted. Any deficiency in these factors will hinder the child's attainment of school readiness.

In our country, children's school readiness is not routinely assessed before starting primary school. At the time of enrollment, the child's age in months is taken into account. Article 11 of the Regulation on Preschool Education and Primary Education Institutions of the Ministry of National Education specifies the age and conditions for entry into primary school. This article was amended, and the changes were published in the Official Gazette dated 10/07/2019 and numbered 30827. According to this article:

a) Children who have completed 69 months of age by the end of September of the enrollment year are registered in the first grade of primary school. In addition, children who are 66, 67, or 68 months old may also be enrolled in the first grade of primary school upon the written request of their parents.

b) School administrations, upon a written request from parents, may direct children who are 69, 70, or 71 months old and eligible for enrollment to preschool education or defer their enrollment for one year. Primary school enrollment procedures are carried out in accordance with these provisions. With the amendment made to subparagraph (b) of the relevant article on July 10, 2019, the requirement for a medical report was abolished (4). The amendments made to Article 11 of the relevant regulation are summarized in table 1, which can be accessed in the supplementary materials.

Article 34, Paragraph 5 of the Regulation on Special Education Services stipulates that, among children with special educational needs, those who are 66, 67, or 68 months old as of the end of September in the year of enrollment may, upon the written request of their parents, continue preschool education for one more year. In addition, students who have completed 68 months but have not yet reached 79 months of age by the end of September, and who document with a "Single Physician Medical Report" that they are not ready to start primary school, shall be allowed to continue preschool education for one more year, in line with the decision of the Special Education Evaluation Board (5).

Research has demonstrated a strong association between children's readiness for school and their subsequent academic and social success. There is a growing body of evidence indicating that children who make a positive start to school adapt better and achieve greater success both academically and socially, demonstrating greater willingness to engage in learning, exhibiting better relationships with peers and teachers, and showing more favorable mental and physical health outcomes in adulthood (6,7). Conversely, children who start primary school without having achieved adequate school readiness tend to experience a range of academic and social difficulties, including lower academic performance, increased risk of school dropout, and higher levels of antisocial behaviors (7). Therefore, the decision regarding school entry is a critical one that may have significant consequences for the individual's future (8). Despite the importance of school readiness for an individual's life, awareness on this issue has not been adequately developed in our country. The knowledge and awareness levels of families, teachers, and educational institutions should be enhanced.

Therefore, there is a need for research investigating the underlying reasons why some children fail to achieve adequate school readiness. In this study, we retrospectively examined cases who, despite having reached the legal age for primary school enrollment according to the relevant regulation, were deemed (based on clinical evaluation and psychometric testing) to require an additional year of preschool education, for which a "Single Physician Medical Report" was issued. In this study our aim was to identify the sociodemographic and clinical characteristics of these cases, to raise awareness in this area, and to contribute to the development of preschool intervention strategies for children who do not attain sufficient school readiness.

METHODS

Cases who presented to the Child and Adolescent Psychiatry outpatient clinic of Atatürk University Research Hospital between 2019 and 2024 for school readiness assessment and were determined to have not achieved adequate readiness were evaluated. Sociodemographic data, psychiatric and medical diagnoses, developmental histories, as well as results of The Denver II Developmental Screening Test (DDST-II) and The Metropolitan School Readiness Test were obtained retrospectively from outpatient clinic files.

The Metropolitan School Readiness Test is a developmental test used to assess whether children are prepared to start primary school. It consists of six sub-dimensions (word comprehension, sentence comprehension, general knowledge, matching, numbers

and copying) comprising a total of 100 items. Scores are classified as follows: 90–100 = superior, 80–89 = high normal, 65–79 = average, 40–64 = low normal, and 0–39 = poor risk.

The Metropolitan School Readiness Test developed by Hildreth, Griffiths, and McGauvran in 1965 (9). The test was later adapted into Turkish by educator Ayla Oktay in 1980 (10).

DDST first published in 1967, was revised by Frankenburg et al. in 1990 to form the DDST-II. The DDST-II evaluates developmental domains across four categories: personal-social, fine motor-adaptive, language, and gross motor. The test consists of 137 items and is administered by a trained examiner (11).

For data analysis, the SPSS for Windows version 25.0 software package was used. Descriptive statistics were presented as frequencies and percentages for categorical variables, and as means and standard deviations for continuous variables.

RESULTS

In this section, missing data were excluded and valid percentages were reported where applicable; for clarity, percentages based on the total sample (n= 60) are also provided in parentheses.

A total of 64 cases were included in the study; however, 4 cases were excluded due to incomplete data, and all analyses were conducted on 60 children. Of the children, 21.7% (n=13) were female and 78.3% (n=47) were male. The mean age of the children was 74.9 ± 3.9 months. Preschool education had been received by 51.7% (n=31) of the children. Regarding birth history, 37.9% (n=22) were preterm, 60.3% (n=35) were full-term, 1.7% (n=1) were post-term (Data were missing for 2 children (3.3%). Among the 60 children, 36.7% (n = 22) were born preterm, 58.3% (n = 35) at term, and 1.7% (n = 1) post-term). Cesarean delivery was reported in 60.7% (n=34) of the children (Delivery mode information was unavailable for 4 children (6.7%). Of the 60 cases, 36.7% (n = 22) were delivered via spontaneous vaginal birth and 56.7% (n = 34) via cesarean section). The majority of the children (96.4%, n=54) did not experience any problems at birth (Birth complication records were missing for 4 cases (n = 6.7). In 90% of the 60 cases (n = 54), no complications were reported, whereas 3.3% (n = 56) experienced a birth-related problem).

Among the cases with postnatal complications, 3.6% (n=2) had jaundice, 1.8% (n=1) had cyanosis, 12.5% (n=7) required incubator care, 1.8% (n=1) had low birth weight, 1.8% (n=1) had respiratory failure, and 21.4% (n=12) experienced more than one problem (Information regarding the presence or absence of postnatal complications was not available in the medical records of 4 cases (6.7%). Among the cases, 3.3% (n = 2) had jaundice, 1.7% (n = 1) had cyanosis, 11.7% (n = 7) required incubator care, 1.7% (n = 1) had low birth weight, 1.7% (n = 1) had respiratory failure, and 20.0% (n = 12) experienced more than one problem).

The mean age of mothers was 35.6 ± 6.0 years, while the mean age of fathers was 39.8 ± 5.8 years. The average years of education were 8.5 ± 4.1 years for mothers and 10.7 ± 3.8 years for fathers.

No psychiatric diagnosis was present in 20% (n=12) of the children. Among the children, 6.7% (n=4) had ADHD, 28.3% (n=17) had ID, 3.3% (n=2) had ASD, 15% (n=9) had Speech and Language Disorder, 1.7% (n=1) had Selective Mutism (SM), 1.7% (n=1) had Separation Anxiety Disorder, and 23.3% (n=14) had more than one psychiatric diagnosis (Table 2).

Table 2. Psychiatric Diagnosis Rates of the Cases

Psychiatric Diagnosis	**n**	**%**
None	12	20
ADHD	4	6.7
ID	17	28.3
ASD	2	3.3
Speech and Language Disorder	9	15
SM	1	1.7
Separation Anxiety Disorder	1	1.7
Multiple Diagnoses	14	23.3
Total	60	100

Abbreviations: ADHD, Attention Deficit Hyperactivity Disorder; ID, Intellectual Disability; ASD, Autism Spectrum Disorder; SM, Selective Mutism.

Among the children, 32.8% (n=19) had a medical diagnosis. The medical conditions of the children included Neurofibromatosis type 1, homozygous MTHFR A1298C mutation and history of cerebrovascular event, West syndrome, epilepsy, acute lymphoblastic leukemia, cerebral palsy, Down syndrome, hearing loss, visual impairment, Joubert syndrome, hydronephrosis, and facial paralysis.

The Metropolitan School Readiness Test was administered to 63.3% (n = 38) of the children. The test could not be administered to 22 children due to cognitive impairments. In addition, 16.7% (n = 10) of the children were unable to sustain their attention during

the assessment and therefore did not respond to it. Of the assessed children, 6.7% (n = 4) were at a high-normal level, 6.7% (n = 4) at an average level, 15% (n = 9) at a low-normal level, and 18.3% (n = 11) at a poor risk level of readiness. The Metropolitan School Readiness Test scores for the cases in our study are summarized in Table 3.

Table 3. Results of The Metropolitan School Readiness Test

Metropolitan School Readiness Test Results	n	%
High-Normal	4	6.7
Average	4	6.7
Low-Normal	9	15
Poor risk	11	18.3
No Response to Test	10	16.7
Test Not Administered	22	36.7
Total	60	100

DDST-II was administered to 56.7% (n=34) of the children. Among them, 11.8% (n=4) were found to have development at the level of their peers, while 88.2% (n=30) were determined to have development below the level of their peers.

DISCUSSION

In this study, the sociodemographic characteristics and psychiatric diagnoses of children who were determined, through clinical interviews and psychometric evaluations, not to have attained school readiness were examined. First, when looking at the gender distribution, it was found that the majority of the cases who had not attained school readiness were boys (78.3% male, 21.7% female). While some studies in the literature suggest that male gender is associated with lower levels of school readiness (7), other evidence indicates that gender does not exert a significant influence on school readiness (2). The predominance of males in our study, however, may be related to the fact that the sample was clinically based and that neurodevelopmental disorders occur more frequently in boys.

When the educational level of parents was evaluated, the mean duration of maternal education was found to be 8.5 ± 4.1 years, while that of paternal education was 10.7 ± 3.8 years. Previous studies emphasize that especially low maternal educational level may negatively affect children's school readiness (12). In our study, the relatively low educational level of mothers indicates that it could be considered as one of the factors influencing school readiness.

From the perspective of preschool education, it was determined in our study that 54.4% of the children had received preschool education. In the literature, there is strong evidence that preschool education makes positive contributions to children's school readiness and language skills (13–15). However, the presence of children in our sample who, despite having received preschool education, had not attained an adequate level of school readiness indicates that this relationship may not be one-way and definitive. This suggests that preschool education is an important factor in supporting children's school readiness, but its impact should be evaluated in interaction with individual, environmental, and developmental factors.

In our study, at least one psychiatric diagnosis was identified in 80% of the cases, with the most common diagnosis being ID at 28.3%. In a previous study evaluating school readiness, 13% of children were found to have an Axis I psychiatric disorder or cognitive delay, with the most common diagnosis again being ID at 4.5% (16). The fact that ID was the most frequent diagnosis in our study is consistent with this finding. ID is one of the most significant disorders directly affecting school readiness. Limitations in cognitive capacity cause notable difficulties not only in language, attention, memory, and problem-solving skills but also in self-care, social communication, and independence. Therefore, ID adversely affects not only academic performance but also the socioemotional demands of school, thereby reducing children's level of readiness for school (1,17). Our study included only children who were determined not to have achieved school readiness, whereas the aforementioned study evaluated all applicants, including those who were ready for school. Therefore, the higher rate of ID observed in our sample is an expected finding.

In our study, 6.7% of the cases were diagnosed with ADHD. In a study examining the relationship between school readiness and mental health problems, it was reported that children who started primary school one year earlier had more frequent attention problems and significantly higher Strengths and Difficulties Questionnaire (SDQ) hyperactivity/inattention scores (18). These findings indicate that attention problems play a decisive role in school readiness. The results obtained in our study are also consistent with the literature in demonstrating that ADHD constitutes a risk factor for school readiness. ADHD is one of the most common neurodevelopmental disorders in childhood, and due to difficulties in sustaining attention, problems with impulse control, and challenges in behavioral regulation, it directly affects academic adjustment. These problems, which begin in the preschool

period, become more apparent in the structured learning environment of primary school, leading to difficulties in complying with classroom rules, completing tasks, and establishing teacher–peer relationships. Therefore, ADHD disrupts school readiness not only by affecting academic performance but also by impairing children's social functioning and self-regulation skills (19,20).

In our study, 3.3% of the cases were diagnosed with ASD. In the literature, it has been reported that children with ASD experience difficulties in adapting to school due to limitations in social communication, challenges in self-regulation, and behavioral rigidity; and that this situation negatively affects their participation in classroom activities, teacher–student relationships, and peer interactions. The findings obtained in our study are consistent with the literature in demonstrating that ASD is a factor negatively affecting school readiness. ASD directly influences not only the cognitive domain but also social-emotional development. In particular, deficiencies in self-regulation skills limit children's participation in classroom activities and interactions with peers, thereby reducing their level of school readiness. Research has shown that early diagnosis and intervention programs for children with ASD have positive effects on cognitive and social-emotional development. These interventions also contribute significantly to school adjustment (1). Overall, it is observed that neurodevelopmental disorders such as ID, ADHD and ASD negatively affect school readiness in cognitive, behavioral, and socio-emotional dimensions. Therefore, recognizing these children at an early stage, before school entry, and directing them to appropriate intervention programs is critically important for supporting their school adjustment and academic achievement. We anticipate that enhancing the knowledge and awareness of family physicians, who monitor children from birth onward, will position them as key stakeholders in this process.

Randomized controlled trials (RCTs) have demonstrated that parenting programs implemented during the preschool and early primary school years are effective in promoting children's school readiness (21). Schools also play a key role in establishing strong partnerships with families at the point of school entry and in supporting each child's readiness for school. Furthermore, early interventions provided to children at risk for inadequate school readiness are considered to be more effective when they are sustained into the early years of schooling (7). We anticipate that the findings of our study will increase the awareness of teachers and school health professionals regarding school readiness, which may facilitate the early identification and referral of children who have already started primary school but experience academic or social difficulties and may not have fully achieved school readiness, thereby enabling timely access to appropriate intervention programs (21).

In the Metropolitan School Readiness Test, a score of 65 or above is accepted as the threshold indicating that the child has achieved school readiness. In our study, 33.3% of the cases scored below 65 points on The Metropolitan School Readiness Test and thus did not achieve school readiness, 13.4% scored 65 points or above and were found to be at an average or a high-normal level, and 16.7% could not respond to the test, 36.7% were not administered the test. The Metropolitan School Readiness Test evaluates not only cognitive capacity but also a wide range of skills required for primary school readiness, such as attention, number concepts, language development, conceptual knowledge, visual perception, memory, and hand–eye coordination. In this respect, the test is a valid and reliable instrument that, in addition to clinical evaluation, allows for the objective measurement of school readiness (10,22). However, even those children whose The Metropolitan School Readiness Test scores were within the normal range were deemed unready for school in clinical evaluation. This finding indicates that school readiness cannot be assessed using a single measurement tool, and that employing both developmental assessments and school readiness tests together provides more reliable results. Moreover, the fact that 16.7% of the cases could not respond to the test underscores the need for alternative assessment instruments.

Indeed, DDST-II was administered to 56.7% (n=34) of the children; of these, only 11.8% (n=4) were found to have age-appropriate development, while 88.2% (n=30) showed developmental delay compared to their peers. This result demonstrates that developmental deficiencies are a determining factor in school readiness. Similarly, the literature has reported that being older in age, having received preschool education, and being monolingual are significant predictors of achieving a The Metropolitan School Readiness Test Total Maturity Score of 65 or above (2).

Therefore, both individual developmental characteristics and environmental factors play a crucial role in school readiness. In conclusion, assessments of school readiness should not rely on a single instrument; rather, they should be approached through a multidimensional framework encompassing cognitive, developmental, socio-emotional, and environmental domains.

Limitations of the Study

This study has several limitations. First, the sample consisted only of children who were referred to the clinic and were identified as not having achieved school readiness; therefore, the findings cannot be generalized to the broader population. Second, due to the cross-sectional design, the ability of the findings to establish causal relationships is limited. Third, the sample size may have been insufficient for more detailed analyses in evaluating the relationship between sociodemographic variables and school readiness. Finally, the absence of parental and teacher perspectives restricted the development of a more comprehensive understanding of the children's functional levels.

CONCLUSION

Our research indicates that multiple factors influence children's school readiness. Therefore, school readiness should be addressed in a multidimensional manner. To ensure adequate school readiness, early diagnosis and intervention of existing psychiatric and medical conditions, expansion of preschool education programs, enhancement of home learning opportunities, and parental training and awareness are of great importance.

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