

ORIGINAL ARTICLE

Disparities in Psychiatric Background and Service Utilization: A Comparative Study of Rural and Urban Health Board Applicants in Child and Adolescent Psychiatry

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Abstract

Background: Regional disparities between rural and urban environments significantly impact access to pediatric mental health services. While environmental factors influence childhood psychological well-being, the gap in service utilization and clinical characteristics between these two settings remains under-researched.

Methods: This study compared clinical and demographic profiles of pediatric patients across rural and urban sites (n = 203). Statistical analyses, including Chi-square and t-tests, were utilized to identify significant differences in psychiatric history, medication use, and diagnostic distributions.

Results: Analysis revealed no significant differences in sex distribution (p=.218) or mean age between rural (M=106.40 months) and urban (M=113.98 months) groups (p =.292). However, profound disparities were observed in healthcare utilization: urban patients were significantly more likely to have had prior psychiatric consultations (87.5% vs. 16.8%, p<.001) and were prescribed psychiatric medications at a substantially higher rate (50.0% vs. 12.1%, p<.001). Furthermore, significant differences emerged in presenting complaints (p<.001), clinical diagnoses (p<.001), and special needs (p<.001).

Conclusion: The findings underscore a critical gap in psychiatric care accessibility, with rural populations showing markedly lower rates of prior consultation and pharmacological intervention. These results suggest that rural patients may only access specialized care at later or more acute stages of illness. To achieve health equity, it is essential to incentivize rural medical assignments, modernize infrastructure, and integrate mental health literacy into school curricula and primary care training.

Keywords: Child psychiatry, Rural Health Services, Urban Health Services, Healthcare Delivery, Health Equity.

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INTRODUCTION

Psychological development is a lifelong process extending from birth to old age, encompassing advancements in intelligence, learning comprehension, and personality traits (1). According to Erikson (1963), this process is significantly shaped by social and cultural factors, with childhood and adolescence serving as critical periods for developmental progress (2). However, the emergence of mental disorders during early life can impede the achievement of age-appropriate developmental milestones (3). Autism spectrum disorders (ASD), attention deficit hyperactivity disorder (ADHD), learning disability and speech disorders are common disorders in children and adolescents (4). These disorders can cause academic failure, difficulties in peer relationships, challenges in social adaptations, shyness and experiences of rejection leading to comorbid psychiatric disorders such as depression and anxiety (5-7)

Psychiatric disorders occur across both rural and urban landscapes; however, access to mental health services remains inequitable. A primary distinction between these environments lies in the availability and accessibility of specialized mental health care (8). In rural areas, obtaining psychiatric support is particularly challenging due to the geographical distance of healthcare facilities, a shortage of child psychiatrists, the high cost of care, and limited access to telemedicine services. Furthermore, social stigma often acts as a significant barrier. Collectively, these obstacles impede early diagnosis and prevent patients from receiving timely, evidence-based treatments.

Cultural perceptions and the phenomenon of social stigma play a pivotal role in shaping help-seeking behaviors across different geographical regions. In rural communities, where social networks are more tightly knit and traditional belief systems often prevail, mental health issues may be misinterpreted as purely behavioral or spiritual concerns. This visibility in smaller settlements often leads to increased self-stigma and a fear of being labeled within the community, which can result in a significant delay in seeking professional psychiatric intervention. Conversely, urban environments typically offer greater anonymity and higher levels of mental health literacy, potentially facilitating earlier clinical presentations. However, the urban setting also introduces distinct stressors, such as intense academic competition and social isolation, which may alter the symptomatic

profile of children and adolescents. Understanding these regional nuances is essential for developing tailored mental health policies that address the specific barriers inherent to diverse socio-geographical landscapes.

Medical board reports constitute a formal system for documenting the special health and educational needs of patients through multidisciplinary clinical evaluations. Within this framework, the assessment of children and adolescents by child and adolescent psychiatrists provides critical data regarding the prevalence of psychiatric diagnoses, history of prior psychiatric contact, and the utilization of psychotropic medications. These indicators serve as a proxy for measuring the extent to which these individuals utilize mental health services. Consequently, this study compares the medical board applications of children and adolescents residing in rural versus urban areas of Türkiye. By analyzing these demographics, the study aims to elucidate the disparities in mental health service utilization and discuss the underlying factors influencing clinical presentations in different geographical settings.

MATERIALS AND METHODS

This study was conducted as a retrospective cross-sectional analysis of medical records from two child and adolescent psychiatry outpatient clinics. The study population consisted of children and adolescents aged between 0-18 years who applied to the medical board for "special needs" evaluation.

To investigate regional and infrastructural disparities, the participants were divided into two distinct groups: 1) Urban Group: Patients who applied to a University Hospital located in the national capital, representing a high-density metropolitan area with advanced tertiary healthcare access. 2) Rural Group: Patients who applied to a State Hospital located in the Southeastern Anatolia region, representing non-metropolitan population with relatively limited access to specialized pediatric mental health services.

For each participant, the following variables were recorded: 1) Demographic Characteristics: Age, gender 2) Clinical Data: Reasons of admission, history of prior psychiatric evaluations, current or past use of psychotropic medications, presence of a psychiatric diagnosis according to DSM-5 (Diagnostic and Statistical Manual

of Mental Disorders, 5th Edition) criteria and special need requirement.

Reasons of admission were categorized as academic difficulties, cognitive concerns, speech difficulties, other medical complaints, motor skill concerns, behavioral problems, and autism spectrum disorder symptoms. The category "other medical complaints" included the forensic admissions or symptoms of non-psychiatric diseases. Presence of a psychiatric diagnosis was grouped as no active psychopathology, borderline intellectual functioning, intellectual disability, specific learning disorder, speech disorders, autism spectrum disorder, and follow up. The category "follow up" included the patients who needs a longer observation or tests that cannot be finalized during the medical board's limited time.

Statistical Analysis

Data analysis was performed using SPSS (Statistical Package for the Social Sciences) v.31.0. Categorical variables (diagnosis types, medication use, previous admission history, special needs) were compared between the urban and rural groups using the Chi-square test; however, Fisher's exact test was utilized when the expected cell counts were less than five. Continuous variables were evaluated using the Independent Samples t-test or Mann-Whitney U test depending on the normality of distribution. A significance level of $p < 0.05$ was adopted for all analyses.

RESULTS

A total of 203 children and adolescents were included in the study, of whom 107 (52.7%) were evaluated at the rural site and 96 (47.3%) at the urban area. The majority were male ($n = 117$, 57.6%). Prior psychiatric consultation was reported for 102 participants (50.2%), and 61 (30.0%) were using psychotropic medication at the time of evaluation. The most common presenting complaints were medical concerns (29.6%), academic difficulties (21.7%), and cognitive concerns (19.7%). The most frequent clinical diagnoses were mild intellectual disability (24.9%), specific learning disorder (19.9%), and no active psychopathology (13.4%), while 13.9% were under follow-up without a definitive diagnosis. Regarding special education needs, 47.8% required special need (unspecified level) and 25.4% had no required special

need. Detailed frequencies are presented in Table 1.

Comparisons between the two sites revealed several significant differences (Table 2). The groups did not differ in sex distribution, $\chi^2 = 1.52$, $p = .218$. However, prior psychiatric consultation was markedly more common among urban patients (87.5%) than rural patients (16.8%), $\chi^2 = 101.11$, $p < .001$, and psychiatric medication use was also substantially higher in the urban group (50.0% vs. 12.1%), $\chi^2 = 34.49$, $p < .001$. The distribution of presenting complaints differed significantly between sites, $\chi^2 = 35.79$, $p < .001$, as did clinical diagnoses, $\chi^2 = 55.45$, $p < .001$, and special needs, $\chi^2 = 58.90$, $p < .001$.

Patient age did not differ significantly between the two sites (Table 3). Rural patients ($M = 106.40$ months, $SD = 53.10$) and urban patients ($M = 113.98$ months, $SD = 48.66$) were of comparable age, $t = -1.06$, $p = .292$.

DISCUSSION

This study sought to compare the previous psychiatric contacts, reasons of admission to the health board, psychotropic medication use, diagnoses and required special needs of children and adolescents who applied to the medical health boards for disability in rural and urban areas. According to the results; there are significant differences in reasons of admission to the health board, previous psychiatric contacts, psychotropic medication use, diagnoses, and required special needs ($p < .001$).

Access to mental health care services can be challenging for rural populations. Due to issues such as distance, weather, transportation, and time, which can complicate receiving care in a timely manner (9).

Shortage of child psychiatrists in rural areas contributes to limitations in meeting the needs of children and this can partly explain lower treatment uptake especially among children with serious mental health issues (10, 11). This deficiency can be related with rural children not receiving a psychiatric diagnosis during their first examination.

Effective treatment uptake can be difficult for reasons such as stigma-related beliefs about the perceived importance, necessity, and suitability of treatment in rural areas (12-14). This attitude is expected to lead to decreased willingness to seek mental health care (15). These factors can be related with difference of psychiatry admission and psychotropic medication use between two groups.

Table 1. Demographic and clinical characteristics of the sample (N = 203)

Variable / Category	n	%
Site		
Rural	107	52.7
Urban	96	47.3
Sex		
Male	117	57.6
Female	86	42.4
Prior psychiatric consultation		
Yes	102	50.2
No	101	49.8
Psychotropic medication use		
Yes	61	30.0
No	142	70.0
Presenting complaint		
Academic	44	21.7
Cognitive	40	19.7
Speech	24	11.8
Medical	60	29.6
Other	14	6.9
Motor	2	1.0
Behavioral	9	4.4
ASD-related	10	4.9
Clinical diagnosis (n = 201)*		
No active psychopathology	27	13.4
Borderline intellectual functioning	12	5.9

Mild intellectual disability	50	24.9
Moderate intellectual disability	13	6.4
Severe intellectual disability	2	1.0
Autism spectrum disorder	15	7.4
Language disorder	12	5.9
Other	2	1.0
Under follow-up (no diagnosis yet)	28	13.9
Specific learning disorder	40	19.9
Special needs (SN) level (n = 201)*		
None	51	25.4
SN, unspecified	96	47.8
Mild SN	17	8.4
Moderate SN	5	2.5
Severe SN	8	4.0
Very severe SN	3	1.5
Marked SN	1	0.5
Severe Disabled	20	9.9
Note. For clinical diagnosis and special needs level, N = 201 (2 missing value).		

Telehealth service use is important and helpful for accessing healthcare services without physical attendance. It can be advantage for the people who live in rural for reasons such as previously discussed, but some of the disadvantages such as older age, lower income, lack of broadband internet access and lower formal education levels are associated with lower telehealth service use (16-18).

Mental health literacy includes the ability to recognize mental illness, knowledge and beliefs about risk factors and causes, knowledge about self-help interventions, knowledge and beliefs about available professional help, attitudes that facilitate recognition and appropri-

Table 2. Comparison of Categorical Variables Between Rural and Urban Sites

Variable	Rural (n = 107) n (%)	Urban (n = 96) n (%)	χ^2	P
			1.52	.218
Sex	66 (61.7)	51 (53.1)		
Male	41 (38.3)	45 (46.9)		
Female			101.11	< .001
Prior psychiatric consultation	18 (16.8)	84 (87.5)		
Yes	89 (83.2)	12 (12.5)		
No			34.49	< .001
Psychotropic medication use	13 (12.1)	48 (50.0)		
Yes	94 (87.9)	48 (50.0)		
No			35.79	< .001
Presenting complaint ^a	28 (26.2)	16 (16.6)		
Academic	29 (27.1)	11 (11.4)		
Cognitive	8 (7.5)	16 (16.6)		
Speech	36 (33.6)	24 (25.0)		
Medical	0 (0.0)	14 (14.5)		
Other	1 (0.9)	1 (1.0)		
Motor	1 (0.9)	8 (8.3)		
Behavioral	4 (3.7)	6 (6.25)		
ASD-related	Rural (n = 106)	Urban (n = 95)	55.45	< .001
Clinical diagnosis ^b	n (%) [*]	n (%) [*]		
No active psychopathology	26 (24.5)	1 (1.0)		
Borderline intellectual functioning	12 (11.3)	0 (0.0)		
Mild intellectual disability	19 (17.9)	31 (32.6)		
Moderate intellectual disability	12 (11.3)	1 (1.0)		
Severe intellectual disability	1 (0.9)	1 (1.0)		
Autism spectrum disorder	5 (4.7)	10 (10.5)		

Table 2. Comparison of Categorical Variables Between Rural and Urban Sites

Language disorder	6 (5.6)	6 (6.3)		
Other	0 (0.0)	2 (2.1)		
Under follow-up	12 (11.3)	16 (16.8)		
Specific learning disorder	13 (12.2)	27 (28.4)	58.90	< .001
Special needs (SN) level ^c				
None	37 (34.9)	14 (14.7)		
SN, unspecified	30 (28.3)	66 (69.4)		
Mild SN	17 (16.0)	0 (0.0)		
Moderate SN	5 (4.7)	0 (0.0)		
Severe SN	8 (7.5)	0 (0.0)		
Very severe SN	2 (1.9)	1 (1.0)		
Marked SN	1 (0.9)	0 (0.0)		
Severe Disabled	6 (5.6)	14 (14.7)		
Note. Percentages represent column (site) percentages within each category. a 31.3% of cells had expected count < 5 (minimum = 0.95). b 20.0% of cells had expected count < 5 (minimum = 0.94). c 55.6% of cells had expected count < 5 (minimum = 0.47), *: For clinical diagnosis and special needs level, N = 201 (2 missing value).				

Table 3. Comparison of age between Rural and Urban

Variable	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Age (months)	Rural	107	106.40	53.10	-1.06	.292
	Urban	96	113.98	48.66		
Note. M = mean; SD = standard deviation; CI = confidence interval.						

ate help-seeking, and knowledge about how to seek appropriate mental health information (19, 20). It is essential for parents and caregivers to recognize psychiatric disorders for early diagnosis and intervention (21, 22). Our findings show that rates of psychotropic medication use and application of child psychiatry outpatient clinic are less common in rural than urban. This difference may be explained by lack of mental health literacy of parents and caregivers in rural areas.

Non-psychiatric disorders were the most applying reason in both groups (in rural 33.6% in urban 25%). It was followed by the reasons about cognition in the rural areas and speech or academic problems in the urban areas.

In our study, although most of the children in urban area applied to the child psychiatry outpatient clinic before applying the health board of disability, the rate was only 16.8% in rural. This can be associated with differences in school-based contact. Schools and health facilities have important role to support families and children to get mental health services with an advantage of their central positioning (23, 24). Teachers have significant role in noticing and early intervention of psychiatric disorders that occur at school environment (25, 26). There is an education gap between urban and rural areas in consequence of some of the factors such as teacher shortages, lack of the necessary buildings, problems in infrastructure such as roads, electricity (27).

Many mental disorders emerge during childhood and adolescence, making early diagnosis and intervention essential during these periods (28, 29). As a result of challenges in accessing health services, delayed treatment and worse consequences may occur (30). Poverty is a situation that limits access to basic needs including health care (31). In our study, lower rates of access to psychiatry services and treatment suggest that poverty may play a role in this situation. Another study conducted in 2006 mentioned that the prevalence of mental disorders among children and adolescents in South Africa was 17% (32). However, only 1 in 10 children with a diagnosable and treatable mental disorder is able to access treatment (33).

Childhood mental health is significantly influenced by environmental factors, often leading to long-term consequences that diminish the overall quality of life. The disparity between rural and urban environments frequent-

ly results in mental health imbalances across different populations. In rural areas specifically, access to mental health care is constrained by a confluence of challenges, including financial barriers, social stigmatization, and a shortage of healthcare services and specialists. These issues are further exacerbated by educational inequities, unreliable internet connectivity, transportation hurdles, and adverse weather conditions.

The primary strength of this study lies in its direct comparison of rural and urban health board applicants, providing empirical evidence for the profound disparities in mental health service utilization, specifically in prior consultations and pharmacological interventions. However, it is important to acknowledge that the retrospective design and the inclusion of only two centers may limit the generalizability of these findings to the broader population. Future multi-center prospective studies are needed to validate these regional nuances on a national scale.

Investments in rural areas are of paramount importance. To bridge the gap between rural and urban sectors and ensure health equity, a multifaceted approach is required. First, healthcare professionals, particularly physicians, should be incentivized to accept assignments in rural regions. This must be supported by structural improvements: resolving infrastructure deficits, implementing contingency plans for extreme weather, and expanding the number of hospitals and family health centers. These facilities must also be modernized with advanced medical equipment to provide comprehensive care. Furthermore, digital infrastructure is a critical component of modern equity; internet service providers must address connectivity issues to facilitate tele-health and educational resources. In terms of mental health, raising public awareness and reducing the stigma surrounding psychiatric disorders is essential. Given the scarcity of specialists, school teachers and non-psychiatric healthcare staff should receive specialized training to provide initial interventions for children and adolescents. There may be a critical need to develop and implement national diagnostic instruments to facilitate early detection and risk identification (34). Finally, the educational curriculum should be restructured to prioritize mental health literacy for both students and parents. Implementing these strategic solutions is vital to reducing regional disparities and fostering social equality.

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Abbreviations List

ASD: Autism spectrum disorders
ADHD: Attention deficit hyperactivity disorder
DSM-5: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition
SPSS: Statistical Package for the Social Sciences.

Ethics Approval and Consent to Participate

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Gazi University. (23.10.2025,E-77082166-604.01-1365903).

Consent for Publication

Not applicable, as this retrospective study does not contain any identifiable personal data.

Availability of Data and Materials

The data of this study are available from the corresponding author upon reasonable request.: None.

Conflicting Interests

The authors declare that they have no conflict of interest.

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