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# Challenges in Accessibility of Public Specialized Mental Health Services for Children and Adolescents in Mexico

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**Abstract:** Specialized mental health services (SMHS) should be accessible to all populations. This study investigated the accessibility of public SMHS for children and adolescent patients, as well as their caregivers, in Mexico. A cross-sectional survey was conducted with 400 patient–caregiver dyads receiving care at two primary SMHS facilities. The survey included indicators within four dimensions of accessibility: (1) organizational entry into SMHS; (2) organizational processes within SMHS; (3) ecological factors; (4) financial aspects. Additionally, six outcome variables were explored, including perceived health conditions and quality of care indicators. A principal component analysis (PCA) was utilized to construct four accessibility indices. Subsequently, multiple linear regression models were applied to examine the relationship between these accessibility indices and the outcome variables. Several indicators yielded notable results. The average emergency ward waiting time was 74.3 min (SD = 95.99), the post-hospitalization wait time was 1.28 weeks (SD = 1.85), and the average medical costs amounted to 962.6 Mexican pesos (SD = 2555.1). Several of the tested relationships between accessibility indices and outcome variables were statistically significant; organizational processes within SMHS and financial indices had a higher number of these significant relationships. These findings highlight the significant challenges in improving accessibility to public SMHS for children and adolescents in Mexico.

**Keywords:** mental health; accessibility; out-of-pocket expenditures; disability; waiting times

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## 1. Introduction

Globally, mental and neuropsychological disorders account for an estimated 14% of the total disease burden, with 80% of affected individuals residing in low-to-middle-income countries (LMIC) where access to mental health services is severely limited [1]. Specifically, among children and adolescents aged 5 to 19, mental health conditions are currently the leading cause of years lived with disability (YLDs) [2].

Mental and developmental disorders in children and adolescents affect their ability to function at home, in school, and within society, significantly impacting their overall quality of life [3]. Despite the urgent need for intervention, many young individuals remain underserved, perpetuating a cycle of health inequity that can contribute to the chronicity of their conditions.

Access to mental healthcare is a fundamental right, yet children and adolescents with mental disorders face significant barriers to receiving the specialized care they need [4]. In low-to-middle-income countries (LMIC), up to 90% of those requiring specialized care are unable to access it, highlighting the need for effective strategies to improve mental healthcare delivery.

Accessibility to mental health services is influenced by various factors, including socioeconomic status, geographic location, and cultural or social factors. These barriers significantly limit access to mental health services. In many cases, families do not seek help due to the stigma associated with mental disorders or a lack of awareness about available services. This is particularly pronounced in ethnic minority communities, where the perception and experience of mental illness may differ significantly from the majority culture, leading to even greater barriers to care [5]. Additionally, the lack of resources and inadequate training for professionals to address these cultural contexts further exacerbates the problem [6].

The structure of health systems also plays a key role in this issue. For example, in the United Kingdom, mental health services for children and adolescents have been described as fragmented, variable, and difficult to access, highlighting the need for more cohesive and accessible care models [7]. This issue is further compounded by the insufficient training of health professionals and educators, which contributes to the underdiagnosis and delayed treatment of mental health problems [8]. Promoting integrated care between primary care providers and psychiatric services has been recognized as an approach to address accessibility issues [9].

In Mexico, one of the greatest challenges in providing mental healthcare for children and adolescents is the fragmentation of the health system. There is a subsystem for individuals with formal employment (social security institutions), another for those without formal employment, and a private system for those who can afford it. Additionally, the lack of integrated care models exacerbates the problem.

In Mexico City, children and adolescents with mental health issues are identified through primary healthcare services, schools, and family referrals. The mental healthcare system includes primary care (offering limited mental health services), secondary care (ambulatory psychiatric units in general hospitals), and tertiary care (specialized psychiatric units in general hospitals). These hospitals handle severe cases referred from lower levels, providing short-term stabilization or long-term outpatient follow-up.

It has been estimated that 80% of individuals with mental disorders do not receive adequate treatment, with psychiatric hospitals playing a crucial role in service delivery, providing more than 50% of the care. In 2023, specialized psychiatric hospitals in Mexico reported 267,834 psychiatric consultations, with 79,378 involving minors. Of these, 48,596 took place in Mexico City, the site of our study [10].

Research on the accessibility of public specialized mental health services (SMHS) for children and adolescents in Mexico is scarce. Previous studies have focused on the time spent seeking first-contact healthcare after the initial perception of symptoms and on obtaining specialized psychiatric care, identifying various inequalities [11]. However, as Frenk outlines, access to health services is a multidimensional concept, encompassing ecological, financial, and organizational factors [12]. These dimensions should be examined comprehensively to identify potential barriers that may impede the effective utilization of healthcare services.

This study aims to analyze key dimensions of accessibility to SMHS for children and adolescents in Mexico. Specifically, we examine (1) the extent to which ecological, financial, and organizational barriers affect access to SMHS; (2) the relationship between these barriers and perceived health conditions; (3) how accessibility influences the quality of care received.

## 2. Materials and Methods

### *2.1. Design*

The study employed a cross-sectional design with retrospective data collection, gathering information on access to SMHS. The study was conducted from 2018 to 2020.

### *2.2. Setting*

The study was conducted at two of Mexico's most prominent psychiatric hospitals specializing in child and adolescent mental healthcare, both located in Mexico City. The first site, the National Institute of Psychiatry Dr Ramón de la Fuente Muñiz (INPRFM), is a leading center for mental health research, known for its expert clinical researchers who contribute to developing clinical practice guidelines for detecting, diagnosing, and treating mental disorders. The second site, the Children's Psychiatric Hospital Dr. Juan N. Navarro (HPIJNN), is the largest psychiatric hospital for children in Mexico. These institutions, part of the Ministry of Health, provide outpatient and inpatient services to low-income populations without social security, as well as contracted services for adolescents with social security who require hospitalization.

### *2.3. Study Participants*

The study sample consisted of 400 dyads, selected from children and adolescents (ages 5–18) receiving mental healthcare services at either the INPRFM or the HPIJNN. The participants were chosen using a simple random sampling technique in outpatient clinics and included both sexes, any diagnosis, and participants who agreed to participate in the study. Hospital outpatient statistics from the previous year were used to determine the sample size. A probabilistic sample calculation was performed for a finite population, considering a confidence level of 95%, an estimated prevalence of 15%, and a maximum estimation error of 3%, leading to an initial sample size of 312. The final sample size was adjusted to 347 to account for potential losses.

Potential participants and their primary caregivers were fully informed about the study and invited to participate. Interviews were conducted with the child or adolescent and their primary caregiver, although the primary caregiver typically responded, particularly for younger children. Of those invited, 400 patients and their caregivers agreed to participate. Although three patients were over 18 years old, they were retained in the sample as their inclusion did not affect the analysis of the access variables. Written informed consent was obtained from all participants, witnessed, and formally recorded. The recruitment was conducted over one year and focused on outpatient services, ensuring that families were randomly invited to participate based on systematic selection from treatment files rather than convenience sampling in waiting areas.

### *2.4. Description of Variables*

The questionnaire included items to explore the following variables:

(a) Sociodemographic variables: Age, gender, education level, years of schooling completed, marital status, occupation, health insurance affiliation, whether the individual contributes to family income, living arrangements, and number of family members.

(b) Accessibility variables: Guided by Frenk's theoretical framework [12] (Appendix A), and the Patient-Centered Access Model [13], a set of indicators of access and accessibility were evaluated in this study through the respective items, exploring the participants' previous experiences. These indicators were classified into four accessibility dimensions: (1) organizational dimension (entry to SMHS); (2) organizational dimension (within SMHS); (3) ecological dimension; (4) financial dimension. Table S1 (Supplementary Materials) provides the conceptual definitions of these accessibility dimensions. The complete list of indicators included is shown in Table 1.

**Table 1.** Indicators classified in the four accessibility dimensions.

| **Accessibility Dimension** | **Indicators Included** [a] |
|---|---|
| Organizational (entry to SMHS) [b] | • Problems getting medical care (no, yes) *<br>• Problems with medical appointments (no, yes) *<br>• Waiting time in emergency services room (minutes) *<br>• Waiting time in external consult room (minutes) *<br>• Waiting time to EC after hospitalization (weeks) *<br>• Time receiving care at SMHS (months) * |
| Organizational (within SMHS) | • Receives medication in SMHS (no, yes)<br>• Receives additional therapies in SMHS (no, yes)<br>• Number of EC received<br>• Number of hospitalizations |
| Ecological | • Time spent to transport (minutes) *<br>• Problems with transport (no, yes) *<br>• Problems—scarce transport (no, yes) *<br>• Problems—expensive transport (no, yes) *<br>• Problems—time spent to transport (no, yes) * |
| Financial | • Health services affiliation of patient (no, yes)<br>• Health services affiliation of caregiver (no, yes)<br>• Caregiver schooling (years)<br>• Caregiver has formal employment (no, yes)<br>• Caregiver at-home activities (household) (no, yes) *<br>• Transport payments going to SMHS (monthly, Mexican pesos) *<br>• Food payments going to SMHS (monthly, Mexican pesos) *<br>• Medical costs (monthly, Mexican pesos) *<br>• Home person income (monthly, Mexican pesos)<br>• Index of medical costs' impact (monthly, without measurement unit)<br>• Scholar absenteeism (days) * |

[a] Numeric values assigned for categorical dichotomous variables: No = 0, yes = 1. [b] The indicator "problems getting medical care" refers to the perception of having any issues obtaining medical care. The indicator "problems with medical appointments" refers to the perception of having any issues securing a medical appointment. * Indicators were inverted to perform the principal component analysis, to construct the accessibility indices, ensuring the direction of all indicators was consistent.

Some accessibility indicators (Table 1) were derived directly from the patient or caregivers' responses. Other accessibility indicators were computed, such as "medical costs" which were calculated by summing the monthly payments for hospitalization, medications, and external consultations. "House person income", calculated by dividing the total household income by the number of household members, and the "index of medical costs' impact", constructed by dividing the medical costs by the household income per person, were both measured monthly.

Finally, to reduce the total number of variables, a principal component analysis (PCA) [14] was used to construct indices for each accessibility dimension based on the included indicators (Table 1). As shown in this table, some of these indicators were inverted to ensure consistency in the direction of all indicators. Only the first factor of each PCA was used as the index for each accessibility dimension (Table S2, Supplementary Materials).

(c) Perceived health conditions and quality of care: As a proxy indicator of health conditions, the questionnaire included items from the World Health Organization Disability Assessment Schedule (WHODAS 2.0) [15,16]. The WHODAS 2.0 is a 36-item scale that provides a generic metric of the impact of any health condition in terms of functioning. This instrument evaluates the level of functioning in six domains: (1) cognition (ability to understand and communicate); (2) mobility (ability to move and get around); (3) self-care (ability to attend to one's hygiene, dressing, eating, and staying alone); (4) getting along (ability to interact with other people); (5) life activities (ability to manage domestic responsibilities, leisure, work, and school); (6) participation (being able to join community activities and participate in society). The scores of the participants using this scale were computed as indicated in the WHODAS 2.0 manual (getting a range of possible results from 0 to 100) [15,16].

Additionally, as proxy indicators of quality of care, two items were included in the survey to explore the average times for diagnosis and treatment (numeric scale, weeks). Furthermore, three items were included to assess perceptions of clinical improvement, general functioning, and quality of life, evaluated using dichotomous scales (no = 0, yes = 1). Table S3 (Supplementary Materials) provides the conceptual and operational definitions of these indicators.

### *2.5. Analysis of the Relationship Between Accessibility Indices and Perceptions of Health Conditions and Quality of Care*

A multivariate linear regression (MLR) analysis was used to examine the relationships between the four constructed accessibility indices as independent variables (first factor of each PCA, as reported in Table S2, Supplementary Materials) and the perceived health conditions and quality of care indicators as dependent variables (Table S3, Supplementary Materials), generating a model for each of these outcomes or dependent variables. Table 2 presents the set of research questions evaluated through MLR. The hypothesis tests used significance levels of 0.050, 0.010, and 0.001.

**Table 2.** Set of research questions we intended to explore through the MLR analysis.

| Number | Research Question |
|---|---|
| 1 | What is the relationship between accessibility dimensions and patients' perceived health conditions (WHODAS)? |
| 2 | What is the relationship between accessibility dimensions and the time for diagnosis? |
| 3 | What is the relationship between accessibility dimensions and the time for treatment initiation? |
| 4 | What is the relationship between accessibility dimensions and the perception of clinical improvement? |
| 5 | What is the relationship between accessibility dimensions and the perception of improvement in general function? |
| 6 | What is the relationship between accessibility dimensions and the perception of improvement in quality of life? |

The data were analyzed using Stata version 15.

# 3. Results

## 3.1. Sample Characteristics

Descriptive statistics for the children, their caregivers, and their households are presented in Table 3. A total of 400 dyads of caregivers and children were interviewed. Of these, 146 (36.5%) were from the Dr. Ramón de la Fuente Muñiz National Institute of Psychiatry (INPRFM) and 254 (63.5%) from the Dr. Juan N. Navarro Children's Psychiatric Hospital (HPIJNN). Most of the participating children were boys (63.0%), with a mean age of 12.2 years (SD = 3.7) and an average of 5.9 years of schooling (SD = 3.7). Most children lived with their parents (92.0%), while a smaller percentage lived with their grandparents (6.0%). Regarding the clinical diagnoses, the most common were hyperkinetic disorders; of 204 patients (51.0%), depressive disorder was found in 135 patients (33.8%) and anxiety disorder was found in 31 patients (7.8%).

**Table 3.** Sociodemographic and clinical characteristics of participants (n = 400).

| Variable | Frec | % |
|---|---|---|
| **Children** | | |
| Age (M ± SD, years) | 12.2 ± 3.7 | |
| Sex (n, %) | | |
| Female | 148 | 37.0 |
| Male | 252 | 63.0 |
| Schooling | | |
| No study | 1 | 0.3 |
| Early childhood education | 12 | 3.0 |
| Primary education | 198 | 49.5 |
| Lower secondary education | 182 | 45.5 |
| Upper secondary education | 6 | 1.5 |
| Schooling (M ± SD, years) | 5.9 ± 3.7 | |
| Who lives with the children | | |
| Parents | 368 | 92.0 |
| Grandparents | 24 | 6.0 |
| Brother/Sister | 6 | 1.5 |
| Other | 2 | 0.6 |
| Health insurance [a] | | |
| IMSS | 93 | 23.3 |
| ISSSTE | 29 | 7.3 |
| SSA | 155 | 38.8 |
| Private Insurance | 9 | 2.3 |
| None | 114 | 28.5 |
| Other special social security institutions [b] | 0 | 0.0 |
| Specialized mental health services (SMHS) | | |
| National Institute of Psychiatry | 146 | 36.5 |
| Children's Psychiatric Hospital | 254 | 63.5 |
| Diagnosis | | |
| Personality disorders | 2 | 0.5 |
| Anxiety disorders | 31 | 7.8 |
| Depressive disorder | 135 | 33.8 |
| Bipolar disorder | 2 | 0.5 |
| Schizophrenia | 1 | 0.3 |
| Other psychotic disorders | 3 | 0.8 |
| Unspecified mental disorder | 7 | 1.8 |
| Hyperkinetic disorders | 204 | 51.0 |
| Dissocial behavioral disorder | 4 | 1.0 |
| Asperger | 2 | 0.5 |
| Psychoactive substance use disorders | 1 | 0.3 |
| No diagnosis | 8 | 2.0 |

**Table 3.** *Cont.*

| Variable | Frec | % |
|---|---|---|
| **Caregivers** | | |
| Age (M ± SD, years) | 41.1 ± 9.3 | |
| Sex (n, %) | | |
| Female | 369 | 92.3 |
| Male | 31 | 7.8 |
| Relationship of the caregivers with the child | | |
| Mother | 338 | 84.5 |
| Father | 30 | 7.5 |
| Grandmother | 23 | 5.8 |
| Grandfather | 2 | 0.5 |
| Aunt | 4 | 1.0 |
| Stepmother | 2 | 0.5 |
| Child's custodian | 1 | 0.3 |
| Occupational activity | | |
| Inactivity due to health issues | 3 | 0.8 |
| At-home activities (household) | 170 | 42.5 |
| Self-employed | 112 | 28.0 |
| Student | 10 | 2.5 |
| Formal employment | 94 | 23.5 |
| Retired | 6 | 1.5 |
| Others | 5 | 1.3 |
| Schooling (M ± SD, years) | 11.7 ± 3.3 | |
| Health insurance [a] | | |
| IMSS | 76 | 19.0 |
| ISSSTE | 41 | 10.3 |
| SSA | 157 | 39.3 |
| None | 115 | 28.8 |
| Private Insurance | 10 | 2.5 |
| Other special social security institutions [b] | 1 | 0.3 |
| **Household** | | |
| Number of members in the family (M ± SD) | 4.1 ± 1.2 | |
| Family income, monthly (M ± SD, Mexican pesos) | 6877.7 ± 5782.3 | |

[a] Acronyms: IMSS: Instituto Mexicano del Seguro Social (Mexican Institute of Social Security); ISSSTE: Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (Institute of Social Security and Services for State Workers); SSA: Secretaria de Salud (Ministry of Health). [b] Other social security institutions: SEDENA; Secretaría de la Defensa Nacional (Ministry of National Defense); SEMAR: Secretaría de Marina (Ministry of Navy); PEMEX: Petróleos Mexicanos (Mexican Petroleum).

Regarding the children's caregivers (Table 3), the mean age was 41.1 years (SD = 9.3), and the majority were women (92.3%). Most caregivers were the mothers of the patients (84.5%), followed by fathers (7.5%) and grandparents (6.3%). In terms of occupation, most were involved in household duties (42.5%), while others were self-employed (28.0%) or had formal employment (23.5%). The average level of education for the caregivers was 11.7 years of schooling (SD = 3.3). In terms of health coverage, 29.6% had social security (IMSS, ISSSTE, or other social security institutions), 39.3% were affiliated with SSA services for those without social security, 28.8% reported having no affiliation, and 2.5% had private health coverage.

Finally, regarding the households (Table 3), the mean number of members was 4.1 (SD = 1.2) years, and the mean family income was 6877.7 Mexican pesos (SD = 5782.3). Additionally, it should be noted that most of the patients live in Mexico City (82.5%, n = 330) but some of them live in other federal states, such as Estado de México (16.3%, n = 65), while the rest (1.2%, n = 5) live in nearby states, such as Tlaxcala, Hidalgo, Guerrero, and Oaxaca.

### 3.2. Accessibility Indicators

Descriptive statistics for the indicators used to assess accessibility dimensions are presented in Table 4. Regarding the organizational indicators, 91.5% of the participants reported no problems accessing medical care, while 97.5% reported no issues with scheduling appointments. The average waiting time in emergency services facilities was 74.3 min (SD = 95.99 min), and only 4.45 min (SD = 6.28 min) in outpatient consultation facilities. The mean waiting time for outpatient follow-up after hospitalization was 1.28 weeks (SD = 1.85 weeks).

**Table 4.** Descriptive statistics of the accessibility indicators (n = 400).

| Variable | Frec | % |
|---|---|---|
| Organizational Dimension (entry to SMHS) | | |
| Problems getting medical care | 34 | 8.5 |
| Problems with medical appointments | 10 | 2.5 |
| Waiting time in the emergency room (M ± SD, minutes) | 74.34 ± 95.99 | |
| Waiting time in the outpatient room (M ± SD, minutes) | 4.45 ± 6.28 | |
| Waiting time to receive outpatient services after hospitalization or emergency medical care (M ± SD, weeks) | 1.29 ± 1.85 | |
| Time receiving care at SMHS (M ± SD, months) | 18.4 ± 24.8 | |
| Organizational Dimension (within the SMHS) | | |
| Receives medication | 347 | 86.8 |
| Receives psychological therapies | 176 | 44.0 |
| Number of outpatient visits | 5.3 ± 6.2 | |
| Number of hospital admissions | 0.1 ± 0.3 | |
| Ecological Dimension | | |
| Transportation time (Home-SMHS) | | |
| 0 min. | 1 | 0.3 |
| <30 min. | 39 | 9.8 |
| 30 min to 1 h | 106 | 26.5 |
| 1 to 2 h | 159 | 39.8 |
| 2 to 5 h | 94 | 23.5 |
| more than 5 h | 1 | 0.3 |
| Problem with transportation | 142 | 35.5 |
| Problem—scarce transportation | 49 | 12.3 |
| Problem—expensive transportation | 30 | 7.5 |
| Problem—time of transportation | 110 | 27.5 |
| Financial Dimension | | |
| Health insurance—patient [a] | 286 | 71.5 |
| Health insurance—caregiver [a] | 285 | 71.2 |
| At-home activities (household) | 170 | 42.5 |
| Schooling of the caregiver (M ± SD, years) | 11.7 ± 3.3 | |
| Formal employment of the caregiver | 94 | 23.5 |
| Payment transportation, monthly (M ± SD, Mexican pesos) | 45.3 ± 91.2 | |
| Food expenditure going to the SMHS, monthly (M ± SD, Mexican pesos) | 234.0 ± 525.7 | |
| Medical costs, monthly (M ± SD, Mexican pesos) | 962.6 ± 2555.1 | |
| Household income per person, monthly (M ± SD, Mexican pesos) | 1760.1 ± 1438.5 | |
| Index of medical costs' impact (0–1) | 0.64 ± 0.94 | |
| Scholar absenteeism, monthly (M ± SD, days) | 3.1 ± 6.1 | |

[a] Health insurance of patients and caregivers considered affiliation with social security institutions (IMSS or ISSSTE) or health services provided by SSA, or private institutions.

For the health-service-related indicators, 86.8% of participants received medications, while 44.0% received additional treatments. The average number of outpatient visits was 5.3 (SD = 6.2), and hospital admissions averaged 0.1 (SD = 0.3).

Regarding the ecological indicators, 35.5% perceived problems or issues with transportation, 12.3% reported scarce transportation options, 7.5% found their transport expensive, and 27.5% had problems with their transportation time.

For the financial indicators, over 70% of the caregivers and patients were affiliated with a health service. The average expenses related to visiting SMHS were 45.3 Mexican pesos (SD = 91.2 pesos) for transportation, 234 Mexican pesos (SD = 525.7 pesos) for food, and 962.6 Mexican pesos (SD = 2555.1 pesos) for medical costs (medications and consultations). The average index of medical costs' impact was 0.64 (SD = 0.94). The mean number of school absenteeism days was 3.1 days (SD = 6.1 days).

Table S2 (Supplementary Materials) shows the main results of the four PCAs performed to derive the four accessibility indices.

### *3.3. Perceptions of Health Conditions and Quality of Care*

The descriptive statistics for the indicators of perceived health conditions and quality of care are presented in Table 5. The mean WHODAS 2.0 global score was 31.7 (SD = 14.9). The average time to diagnosis was 11.1 weeks (SD = 26.9 weeks), and the average time to treatment initiation was 11.4 weeks (SD = 27.7 weeks). Regarding perceptions of improvement, 91.0% of the patients reported clinical improvement, 78.9% an improvement in functioning, and 73.6% an improvement in quality of life.

**Table 5.** Perceived health conditions and quality of care indicators (n = 400).

| Indicator | Frequency | % |
|---|---|---|
| Global functionality by WHODAS 2.0 (M ± SD) | 31.7 ± 14.9 | |
| Time to receive a diagnosis (M ± SD, weeks) | 11.1 ± 26.9 | |
| Time for treatment initiation (M ± SD, weeks) | 11.4 ± 27.7 | |
| Perception of clinical improvement | | |
| No | 32 | 9.0 |
| Yes | 325 | 91.0 |
| Perception of improvement in general function | | |
| No | 75 | 21.1 |
| Yes | 280 | 78.9 |
| Perception of improvement in quality of life | | |
| No | 94 | 26.4 |
| Yes | 262 | 73.6 |

### *3.4. Relationships Between Accessibility Indices and Perceptions of Health Conditions and Quality of Care*

The relationships between accessibility dimensions and perceived health condition and quality of care are shown in Table 6. The independent variables were the accessibility indices, while the dependent variables were the perceived health condition and quality of care indicators. All of the models had a global evaluation (ANOVA test) score that was statistically significant, except for the model with WHODAS and the time for treatment initiation as the dependent variables, although the $p$ value for the general fit of this last model had a trend of being statistically significant ($p = 0.099$).

The organizational dimension (entry to SMHS) only had a statistically significant relationship with the perception of clinical improvement ($\beta = 0.031$). The organizational dimension (within SMHS) showed a statistically significant direct relationship with perceived clinical improvement ($\beta = 0.126$), functioning ($\beta = 0.060$), and quality of life ($\beta = 0.084$). The ecological dimension only had a relationship with a trend of being statistically significant, which was with the perceived improvement in quality of life ($\beta = 0.032$, $p = 0.057$). The financial dimension had an inverse and significant relationship with the times to diagnosis

($\beta = -2.660$) and treatment ($\beta = -2.140$), as well as a direct relationship with perceived improvements in functioning ($\beta = 0.051$) and quality of life ($\beta = 0.041$). The model with the best fit was the one that used perceived clinical improvement as the dependent variable (adjusted $R^2 = 0.164$).

**Table 6.** Relationships between accessibility indices and perceived health conditions and quality of care.

| Accessibility Indicators | Global WHODAS 2.0 | | Time for Diagnosis | | Time for Treatment Initiation | | Perception of Clinical Improvement | | Perception of Improvement in General Function | | Perception of Improvement in Quality of Life | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | SE | $\beta$ | SE | $\beta$ | SE | $\beta$ | SE | $\beta$ | SE | $\beta$ | SE |
| Organizational (to enter SMHS) | −1.022 | 0.659 | −0.309 | 1.119 | −0.636 | 1.131 | 0.031 * | 0.015 | 0.026 | 0.019 | 0.011 | 0.020 |
| Organizational (inside SMHS) | −0.444 | 0.721 | 1.713 | 1.229 | 1.739 | 1.242 | 0.126 *** | 0.016 | 0.060 ** | 0.021 | 0.084 *** | 0.022 |
| Ecological | 0.104 | 0.550 | 0.038 | 0.938 | 0.679 | 0.948 | 0.011 | 0.012 | 0.020 | 0.016 | 0.032 | 0.017 |
| Financial | −0.388 | 0.590 | −2.660 ** | 1.002 | −2.140 * | 1.013 | 0.006 | 0.013 | 0.051 ** | 0.017 | 0.041 * | 0.018 |
| Constant | 31.680 ** | 0.799 | 10.153 ** | 1.357 | 10.145 * | 1.372 | 0.828 ** | 0.018 | 0.711 ** | 0.023 | 0.662 ** | 0.024 |
| Observations | 361 | | 364 | | 364 | | 364 | | 364 | | 364 | |
| F statistic (ANOVA test) | 0.83 | | 2.59 * | | 1.96 | | 18.85 *** | | 5.61 *** | | 6.65 *** | |
| $R^2$ | 0.009 | | 0.028 | | 0.021 | | 0.174 | | 0.059 | | 0.069 | |
| Adjusted $R^2$ | −0.002 | | 0.017 | | 0.011 | | 0.164 | | 0.048 | | 0.048 | |

SE = standard error; * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$.

## 4. Discussion

This study offers a multifaceted analysis of the challenges in accessing specialized mental health services for children and adolescents within the public health system in Mexico. Our findings reveal a complex interplay of organizational, ecological, and financial barriers that significantly impact the timeliness and quality of care. Specifically, we found that prolonged waiting times, transportation difficulties, and out-of-pocket medical expenses disproportionately affect vulnerable families. Despite efforts to provide financial protection through programs such as 'Seguro Popular', a substantial proportion of caregivers still face significant economic strain. Furthermore, while organizational improvements are associated with perceived enhancements in clinical conditions and quality of life, these benefits do not fully address the broader systemic issues hindering equitable access to care. These key findings underscore the urgent need for targeted policy interventions to strengthen mental health infrastructure, reduce financial burdens, and improve the overall accessibility of specialized services for children and adolescents in Mexico.

To understand the multifaceted nature of these challenges, we now delve into the specifics of each accessibility dimension, starting with the sample characteristics and then examining organizational, ecological, and financial factors.

Regarding the sample, some key characteristics should be highlighted (Table 3). Despite the study being conducted in SMHS aimed at populations without social security (services provided through the Ministry of Health), a significant proportion of patients had social security, meaning they were affiliated with institutions such as IMSS and ISSSTE. This is due to many patients benefiting from agreements between health institutions that facilitate their access. Additionally, many patients came from neighboring states, which may reflect accessibility issues in those regions.

### *4.1. Accessibility Dimensions*

#### 4.1.1. Organizational

Regarding the organizational dimension indicators (entry to SMHS), the waiting times for receiving emergency, outpatient, or hospital care as reported by the participants could be considered somewhat prolonged, especially for emergency services (M = 74.34 min, SD = 95.99) and for outpatient consultations after hospitalization

(M = 1.29 weeks, SD = 1.85). It is worth mentioning that although the central tendency values could be considered acceptable, the dispersion values could reflect that a proportion of patients have experienced high waiting times. Previous studies have also documented long waiting times for ambulatory and specialized care or surgical procedures in public health services in Mexico for populations without social security, although such data had not been reported for specialized mental health services [17,18]. This is crucial, since shorter waiting times reduce the risk of injury in cases of suicide attempts or violent behavior and lead to better health outcomes in symptom reduction and social functioning, particularly in patients with mental health problems such as early-onset psychosis [19]. However, it is important to note that longer engagement with SMHS, despite structural barriers such as waiting times, could allow caregivers to perceive improvements in clinical conditions, functioning, and quality of life. Indeed, in the Mexican context, where the waiting times have increased, especially for outpatient services, patients may be willing to accept these delays because they perceive greater attention and relate it to their overall quality of life [20].

Regarding the indicators of the organizational dimension (within SMHS), 13.3% of caregivers reported not having access to medications, reflecting ongoing issues in ensuring access to psychiatric medications, which can be very expensive and lead to catastrophic or impoverishing expenses for patients. This persisted despite the operation of financial improvement programs, such as "Seguro Popular", which operated from 2004 to 2019, providing financial protection [21] but having little impact on service utilization and treatment [22]. Additionally, the lack of total coverage for access to prescribed medicines in the ambulatory and hospital care of the public health sector has been identified in previous studies [23,24]. These challenges highlight the need to consider factors influencing caregiver satisfaction, such as staff interactions and the perceived quality of care. The perceived quality of care and availability of resources within SMHS can outweigh the negative impact of waiting times and influence the overall caregiver satisfaction; positive staff interactions could also shape these perceptions.

Furthermore, 56.0% of caregivers reported not having access to additional services or treatments, such as psychological therapy. The SMHS from which the sample was obtained had limited specialized staff. HPIJNN has 33 child psychiatrists, 58 psychologists, 13 therapists (language, physical, vocational, occupational), 18 social workers, and 92 nurses who work in 10 outpatient specialized clinics and 2 inpatient units, as well as 1 partial hospitalization unit, providing more than 60,000 outpatient care cases and almost 600 hospitalizations per year [25]. Previous studies have documented the insufficient physical and human resources to provide these services, both at the specialized care and primary care levels, a problem also related to weak governance in mental health [26,27].

### 4.1.2. Ecological

In terms of indicators of the ecological dimension, a high proportion of patients and caregivers reported travel times to SMHS that fell into long categories such as "between 1 and 2 h" (39.8%) and "between 2 and 5 h" (23.5%). Additionally, many caregivers mentioned transportation issues, including problems with their travel time. These extended travel times may limit access to services, particularly for those in rural areas, and disproportionately affect caregivers' perceptions of quality of life rather than immediate clinical outcomes. The burden of travel (time, cost, and logistical challenges) may primarily impact caregivers' overall sense of well-being. This problem represents an additional risk for treatment abandonment, particularly for patients living in distant areas. Previous studies conducted in Mexico have quantified the economic burden, noting that transportation expenses form part of the caregivers' out-of-pocket costs, alongside lost work time [28–30].

These results highlight the importance of developing technology-based strategies, such as telepsychiatry, to enhance service accessibility for outpatients.

### 4.1.3. Financial

In the indicators of the financial dimension, a significant proportion of the caregivers (28.8%) and patients (28.5%) lacked health service insurance, despite using specialized psychiatric services within the Ministry of Health. Another noteworthy finding is that 76.5% of the caregivers reported not having formal employment, although this may be because most were women (92.3%), with 42.5% being homemakers. Additionally, the average out-of-pocket medical costs for patients were somewhat considerable or significant (M = 962.6 Mexican pesos, SD = 2555.1 Mexican pesos), and the index of medical costs' impact showed a high mean (M = 0.64, SD = 0.94), indicating that on average, medical costs accounted for 64% of household income per person. This highlights that socioeconomic disparity in Mexico contributes to differential access to specialized and timely care. While financial constraints may not directly influence the baseline disability, they contribute to delays in diagnosis and treatment. This may be because children and adolescents require more specialized tests and auxiliary diagnoses, which the hospital may not have, leading to these tests being ordered outside the hospital, thereby delaying definitive diagnoses. It should be noted that as mentioned before, these results occurred despite the financial protection program "Seguro Popular". Previous studies have shown that out-of-pocket health expenses for public health service users, often related to medication purchases and other health inputs, can lead to catastrophic or impoverishing costs, particularly for chronic or disabling conditions [28–30]. Despite belonging to a public healthcare program, many Mexicans are increasingly paying for private healthcare services due to precarious and insufficient resources. This reflects the perception that more resources mean better care and a positive correlation with quality of life.

It should be noted that in 2020, a new health reform was gradually implemented to promote a system of universal healthcare in Mexico [31]. Recent studies have identified better results regarding out-of-pocket expenditures in patients who received care in public health hospitals belonging to the Secretaría de Salud (Institutos Nacionales de Salud, including INPRFM) [32]. This highlights the importance of continuing to develop and implement health policies focused on financial protection for health service users, especially those with chronic or disabling diseases.

## *4.2. Perceived Health Condition and Quality of Care Indicators*

The perceived health condition and quality of care indicators also revealed key results (Table 5). The WHODAS 2.0 score had a mean of 31.7 (SD = 14.9), corresponding to the 80th percentile, as indicated in the manual of this scale [15,16]. For the indicators of the times to diagnosis and treatment initiation, means of 11.1 and 11.4 weeks, respectively, were recorded, which could be considerable periods. However, diagnosis delays for mental health conditions have been previously documented even in developed countries, where delays in diagnosis over one year have been reported in most patients (61.6%) in Canada, and waiting times to begin treatment can reach up to 81 days (11.6 weeks), as seen in the Netherlands [33]. In this regard, our study adds to the existing literature on barriers in the context of low- and middle-income countries.

Additionally, some caregivers reported not perceiving any improvement in children or adolescents (9.0% for clinical improvement, 21.1% for general functioning, and 26.4% for quality of life). At the same time, this implies that 91% of caregivers identified clinical improvements in the patients, 79% observed better general functioning, and 74% perceived improved quality of life. This sequence holds significant meaning in the context of modern approaches aimed at goals beyond clinical manifestations. It includes a stepwise process consisting of (1) symptom relief, (2) return to normal functioning, (3) the development of resilience, and (4) personal recovery and improved quality of life [34].

### *4.3. Relationships Between Accessibility and Perceived Health Conditions and Quality of Care*

The multiple regression analysis obtained four statistically significant models, using as outcome (dependent) variables the time for diagnosis, perception of clinical improvement, perception of improvement in general function, and perception of improvement in quality of life.

Regarding the organizational dimension (to enter SMHS), a statistically significant relationship was found only with the perception of clinical improvement but not with the other outcome variables. However, the organizational dimension (inside the SMHS) had statistically significant relationships with all three improvement perception indicators, showing that greater provision of services (as well as a longer time receiving SMHS) was associated with greater perceived clinical improvement, functioning, and quality of life; however, no statistically significant relationship was found between this accessibility dimension and the other outcome variables. These results highlight the indirect influence of organizational factors on patient and caregiver experiences; for instance, smoother organizational processes and reduced waiting times may not expedite clinical timelines but can significantly improve perceptions of care reliability and patient well-being. This disparity may stem from the multifaceted nature of mental health service accessibility:

(a) Indirect influence on perception and satisfaction: Organizational aspects, such as reduced waiting times, the coordination of services, and the availability of essential resources, contribute significantly to the overall experience within the healthcare system [35,36]. Even if these factors do not directly accelerate the diagnostic process or the commencement of treatment, they positively impact the sense of trust and reliability in the services, which in turn shapes perceived health improvements and quality of life.

(b) Psychological and emotional impacts: In mental health care, perceived outcomes such as general function and quality of life often encompass more subjective and psychological dimensions. The stress of navigating complex systems or facing prolonged waiting times can exacerbate patients and caregivers' emotional challenges. Conversely, smoother organizational processes create an environment of reassurance and perceived effectiveness, enhancing satisfaction and optimism about recovery [37,38].

(c) Broader contextual implications: The way organizational factors are managed sends implicit signals about the system's priority and respect for patients. For instance, shorter waiting times or streamlined processes may not directly affect treatment initiation but convey a sense of attentiveness that elevates patients and caregivers' confidence in the system. Such confidence often translates into perceived health improvements and better quality of life [39].

Regarding the ecological dimension, only a relationship with a trend of being statistically significant relationship was found with the perception of improvement in quality of life ($p = 0.057$). One potential explanation is that efficient transportation could alleviate stress and logistical burdens for patients and caregivers, indirectly contributing to their perceived quality of life, without directly influencing the clinical outcomes. A similar result has been previously documented in ambulatory care, when evaluating the relationship between waiting times and perceptions of quality of care [18].

In the financial dimension, statistically significant relationships were found with two of the improvement perception indicators, indicating that greater financial accessibility was associated with greater perceived improvements in general functioning and quality of life. Additionally, statistically significant relationships were found with the indicators of time to diagnosis and treatment, inversely reflecting that families with better financial accessibility reported shorter times for diagnosis and treatment. These results underscore the tangible barriers posed by economic constraints, which can delay access to specialized care, reflecting inequalities or inequities in care quality related to this accessibility dimension, as families with better accessibility appear to receive better care processes and outcomes. Such inequalities in access and quality of care associated with socioeconomic factors have been documented in Mexico and other Latin American countries in various health contexts, including child and adolescent care [40,41].

Comparing the results obtained for the financial and ecological factors, we could hypothesize that the association of financial constructs with the times to diagnosis and treatment initiation may reflect direct economic barriers, whereas the transportation construct's relationship with quality of life captures broader psychosocial dimensions rather than clinical metrics.

An important finding was that any of the accessibility indices had a statistically significant relation with WHODAS. Additionally, the model using this dependent variable was not statistically significant. This shows that this scale may not be the best way to measure disability in a population with mental disorders; for example, one study that used this scale found severe disability levels in less than 5% of patients with chronic mental illnesses in Argentina [42]. The other model that was not statistically significant used the time for treatment initiation as a dependent variable; however, it should be noted that the $p$ values we obtained showed a trend of being significant ($p = 0.099$). Additionally, as mentioned before, the financial index had a significant relation with this outcome variable.

Finally, another observation about the results is that the explained variances (adjusted $R^2$) of the statistically significant models were low. We argue that this aligns with the complex and multifactorial nature of accessibility to SMHS; accessibility encompasses diverse dimensions that interact in nuanced ways, often yielding significant, albeit modest, predictive power in statistical models. Moreover, this reflects the inherent complexity of accessibility dimensions and their often-indirect effects on health outcomes. The multifaceted nature of accessibility makes it challenging to capture its full scope using quantitative measures alone.

### *4.4. Strengths and Weaknesses of the Study*

Strengths: This was a pioneering study in measuring variables of access to specialized care in children with mental disorders. The study took a broad approach that included various dimensions of accessibility evaluated through multiple indicators. Additionally, several proxy indicators of health condition and quality of care perceptions were included. The use of the multidimensional WHODAS 2.0 instrument stands out, as well as the use of four proxy indicators for quality of care, including delays in diagnosis and treatment, and perceived improvements in clinical, functional, and quality of life outcomes.

Weaknesses: This study focused on a sample of patient users from two main public hospitals within the public health system, primarily serving populations without social security in Mexico City. Therefore, it does not reflect SMHS in a broader context, such as at the national level. We also acknowledge the potential influence of illness severity, caregiver mental health, and prior healthcare experiences as limitations of the study. Additionally, regarding the measurement of variables, this study has some limitations, since it is mainly based on patients and caregivers' perceptions; the ecological dimension was measured only with transportation-related indicators. Additionally, some outcome variables were measured as dichotomic items only (health condition improvement perceptions). Furthermore, the study's cross-sectional design had inherent limitations, such as memory bias, and it should be explicitly stated that causality cannot be inferred due to this design.

### *4.5. Opportunities for Future Research*

Future studies could focus on more detailed and objective measures for some previously mentioned accessibility and outcome variables. Additionally, qualitative insights could enhance the understanding of accessibility barriers and suggest this as a future research avenue.

Additionally, future studies should measure the effects of clinical variables, such as family history of mental illness or the age of the caregiver, on the dimensions of access studied. Several studies have shown that these factors may influence the utilization of mental health services [43,44].

### *4.6. Final Reflections*

This study identified barriers to accessibility for children and adolescent users of SMHS within the public health system for populations without social security in Mexico City. It explored their relationship with perceived health outcomes or clinical improvements. Based on these results, we consider the following points important:

- Mental health policy and governance in Mexico must be strengthened to achieve better infrastructure and resources for providing quality mental health services.
- Financial protection policies for mental health service users must be reinforced to ensure effective health coverage.
- A pharmaceutical policy must be developed to guarantee the supply of medications in mental health services and to provide medications to patients as a form of financial protection.
- Digital health strategies, particularly telemedicine and telepsychiatry, should be developed and implemented to improve access to mental healthcare in suburban and rural areas, improving current policy and implementation status [45]. For example, telehealth has proven effective in managing anxiety, obsessive–compulsive disorder, and depression among young people [46]. It is essential to develop regulatory frameworks that allow the use of this technology for pediatric and adolescent patients.
- From a public health promotion perspective, it is important to develop and implement emotional, social, and mental well-being strategies in educational settings [47]. Additionally, educators and caregivers must be trained in mental health strategies to support children and adolescents experiencing mental disorders or psychosocial difficulties.

## 5. Conclusions

The findings highlight significant challenges in accessing SMHS for children and adolescents in Mexico, indicating the need for enhanced infrastructure and resource allocation to reduce wait times and improve service delivery.

Accessibility dimensions, especially organizational and financial factors, are crucial for better health outcomes and perceived improvements in quality of life. This reiterates the need for future research to explore additional factors influencing accessibility and outcomes in this population.

**Supplementary Materials:** The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/psychiatryint6020072/s1, Table S1: Conceptual definition of the four accessibility dimensions; Table S2: Description of the four PCAs results; Table S3: Conceptual and operational definition of the perceived health conditions and quality of care indicators.

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L.D.-C., C.D.d.L.-C., H.C.-R. and J.A.B.-C.; writing—review and editing, C.D.d.L.-C. and J.C.S.-H. All authors have read and agreed to the published version of the manuscript.

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## Abbreviations

The following abbreviations are used in this manuscript:

| | |
|---|---|
| SMHS | Specialized mental health services |
| INPRFM | Dr. Ramón de la Fuente Muñiz National Institute of Psychiatry |
| HPIJNN | Dr. Juan N. Navarro Children's Psychiatric Hospital |
| PCA | Principal component analysis |
| MLR | Multivariate linear regression |
| WHODAS | World Health Organization Disability Assessment Schedule |

## Appendix A

According to Frenk's theoretical framework [12], accessibility is directly proportional to the availability of resources and the individual's power and inversely proportional to resistance. The degree of alignment is obtained by the ratio of utilization power to resistance, considering the characteristics of both the population and the resources or services:

$$A = D\left(\frac{M}{T} + \frac{I}{C} + \frac{Td}{Te} + \frac{L}{S}\right)$$

where $A$ = accessibility, $D$ = resource availability, $M$ = resources to move (at the hospital), $T$ = time to move (from home to hospital), $I$ = income, $C$ = costs (for health services), $Td$ = tolerance (to the delay or waiting time), $Te$ = time (waiting time to receive outpatient healthcare), $L$ = leisure (free time), and $S$ = time in the waiting room (at the hospital).

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