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ORIGINAL ARTICLE

Disparities in the use of mental health services of adolescents in Chile

Disparidades en el uso de servicios de salud mental de adolescentes en Chile

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What do we know about the subject matter of this study?

Few studies have explored differences in the use of mental health services based on the social determinante of health in adolescents. Some studies have reported differences according to gender, migration status, or family structure.

What does this study contribute to what is already known?

Disparities in the use of mental health services were analyzed according to sociodemographic factors in a sample of Chilean adolescents. We found a wide treatment gap and that the use of mental health services varies according to gender, age, family structure, migration status, and parental education. Some of these disparities could reflect social disadvantages that decrease the use of these services in certain groups.

Abstract

Objective: To examine disparities in the use of mental health services (MHS) in adolescents according to sociodemographic factors. **Subjects and Method:** 2,022 adolescents aged 13-19 years in Santiago, Chile, participated in the study. Between April and May 2008, they answered a self-report survey that assessed lifetime (history of treatment for depression) and current (psychological or pharmacological treatment) use of MHS, sociodemographic variables, and psychopathology as symptoms of depression, symptoms of generalized anxiety disorder, and risk of problematic substance use. Data were analyzed using logistic regression. **Results:** 16.5% of participants reported lifetime use of MHS

Keywords:
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due to depression, 9.7% were on current psychological treatment, and 2.7% were on current pharmacological treatment. Among those meeting criteria for a mental health problem, only 14.9% to 18.9% were currently on treatment. Males, younger participants, and those who had immigrants' parents reported lower lifetime use of MHS due to depression. Those with parents with 9 to 12 years of education and who had immigrants' parents reported lower current MHS use. Youth not living with both parents reported higher lifetime and current MHS use. **Conclusions:** We observe a high treatment gap in those with mental health needs as well as differences in MHS use based on socio-demographic variables. These results may be useful for planning interventions that favor access to and use of MHS, especially in the most disadvantaged groups of adolescents.

Introduction

Despite that mental illness is a leading cause of disability[1] and is highly prevalent among adolescents[2], few of them use mental health services (MHS)[3-5]. In Chile, it has been reported that 41.6% of children and adolescents with a mental disorder had used some type of health service; however, only 19.1% had accessed formal mental health services[6].

The MHS are those services aimed at the identification, diagnosis, and treatment of mental health problems (MHPs) in the population[7]. They may be provided by healthcare services, social services, the private health sector, or civil society, and include outpatient and community services, day services, inpatient services, self-help services, and non-professional services[8].

Traditionally, the use of MHS has been investigated based on the access barriers identifiable in the environment, the family group, the health services, and the adolescents themselves. Some examples of these barriers are the lack of knowledge of signs and symptoms of mental disorders, stigma, the fragmentation of MHS, and their low availability, together with their low relevance and adequacy to the needs of the adolescent population, as well as the lack of information on where to receive care[5,9,10].

A less developed perspective of analysis is to address the use of the MHS from the Social Determinants of Health (SDH) approach. SDH are the circumstances in which people's lives take place and which are the result of structural mechanisms of the unequal distribution of power and social stratification[11,12]. SDH generate and perpetuate health inequities[12,13], which are understood as avoidable, unnecessary, and unfair disparities that reduce the opportunities for groups and individuals to benefit from the right to health and to access the necessary care in the event of illness[12].

According to the framework of the Commission on SDH[11], it is possible to distinguish between intermediate and structural SDH. The first ones are related to living conditions and psychosocial, biological, and behavioral factors of individuals, as well as characteristics of the health systems, which affect health outcomes. Besides, the intermediary SDH are conditioned by the structural SDH, also called "the causes of the causes", where the origin of health inequities would lie[11,12]. For example, the socioeconomic and political context of a country and the socioeconomic position given to individuals and groups in the structure of a society are structural SDH[14]. The level of education and income, gender, family structure, number of children, disability status, and migration status are examples of sociodemographic factors that account for the social position of a person and are used to monitor health inequities and evaluate health programs and services from an SDH perspective[15].

Few studies have explored the effect of SDH on the use of MHS in the adolescent population. These studies report that adolescents belonging to ethnic, racialized minorities, or of migrant background[3,16,17] or with parents with fewer years of education[3] use less the MHS. In contrast, adolescents from families that do not live with both parents report higher use of MHS[3,18]. Inconclusive results have been found regarding the use of MHS by adolescents who are children of parents with history of psychopathology who have experienced discrimination[19,20]. Regarding gender, lower use of MHS by males has been reported[21]. This would vary in the case of externalizing disorders (e.g. attention deficit hyperactivity disorder) where women are less likely to have access to treatment[4].

It is important to detect possible differences in the use of MHS in adolescents in order to implement strategies to improve access to these services, especially in the most disadvantaged groups. From the SDH approach, the objective of this study is to analyze disparities in the use of MHS in adolescents according to some sociodemographic factors that are used to monitor health inequities. Based on this information, we hypothesized that differences would be observed by gender, family structure, years of parental education, and migratory status.

Subjects and Method

Design

Analytical cross-sectional study.

Participants

Students from first to third year of high school (9th to 11th grade) from subsidized private schools in the northern area of Santiago, Chile, were recruited. Convenience sampling was used and schools that met the following inclusion criteria were invited to participate: having students of both sexes, having at least two classes per grade, having no more than 60% of students of one sex, and having a school psychologist or counselor. Eight of the 20 schools that met the inclusion criteria agreed to participate in the study. The data were collected as part of an evaluation study of a prevention intervention for adolescent depression ("Cuida tu ánimo" Program ["Take Care of Your Mood", in English])[22].

Measures

Use of mental health services

Three questions on mental health service use were included with a dichotomous response format (*no* = 0 and *yes* = 1). Questions included current pharmacological treatment, current psychological treatment, and lifetime history of treatment for depression. The latter question was included given the focus on depression in the primary study. The questions on current pharmacological and psychological treatment were combined into a new variable called any current mental health treatment, which was coded in the same way (*no* = 0 and *yes* = 1).

Sociodemographic factors

The survey included questions on the following sociodemographic characteristics: gender (*female* = 0 and *male* = 1), age (transformed into a categorical variable, where *13-15 years* = 0 and *16-19 years* =), living with parents (both parents = 1, mother or father= , neither = 3), years of maximum education of either parent (*8 years or less* = 1, *between 9 and 12 years* = 2, *13 years or more* = 3), and child of migrants (0 = *no* and 1 = *yes*).

Psychopathology

Depressive symptoms were assessed with the Patient Health Questionnaire (PHQ-9)[23] using its validated version for Chilean adolescents[24]. The instrument consists of 9 items with a 4-point ordinal response scale (ranging from *not at all* = 0 to *nearly every day* = 3). From the sum of the items a total score is obtained, which can vary from 0 to 27 points. Scores higher than or equal to 11 were considered positive for moderate to severe symptoms of depression[24].

The 7-item Generalized Anxiety Disorder scale (GAD-7) was used to assess symptoms of generalized anxiety disorder[25] in its Chilean version for adolescents[26]. It is a 7-item self-report instrument with a 4-point ordinal response scale (ranging from *not at all* = 0 to *nearly every day* = 3). Scores can range from 0 to 21 points. Scores greater than or equal to 10 were considered positive for moderate to severe symptoms of generalized anxiety disorder[25].

The risk of problematic substance use was assessed using the Car, Relax, Alone, Forget, Family/Friends, Trouble (CRAFFT) instrument[27]. This instrument is composed of 6 items with a dichotomous response format (*yes* = 1 and *no* = 0). Scores greater than or equal to 2 indicate the presence of risk of problematic alcohol and/or other substance use.

From the sum of the three dichotomous variables for symptoms of depression, symptoms of generalized anxiety disorder, and risk of problematic substance use, the variable number of MHPs, ranging from 0 to 3, was created.

Procedure

The study was approved by the Human Research Ethics Committee of the Faculty of Medicine of the University of Chile and subsequently, the principals of each school participating in the study gave their authorization. All students from first to third year of high school (9th to 11th grade) were invited to participate. Before participating in the study, parents or caregivers gave their informed consent and adolescents gave their assent or consent (in the case of those over 18 years of age). Participants completed the survey electronically on their school computers and were assisted and supervised by the research team. Data were collected between April and May 2018. Participants with major depressive symptoms (PHQ-9 ≥ 14) and/or suicidal ideation (PHQ-9 item 9 ≥ 2) were referred for face-to-face mental health assessment along with their parents or caregivers. The detailed description of the procedure, sociodemographic variables, symptoms of depression, generalized anxiety, and risk of problematic substance use in this sample of adolescents was previously reported by our group[28].

Analysis

The study variables were described using absolute frequencies and percentages. Percentages were also used to describe the MHS use according to psychopathology variables and for the variable number of MHPs. To analyze the disparities in MHS use according to sociodemographic factors, logistic regression models were performed using MHS use variables as

dependent variables and sociodemographic factors as independent variables, which were entered simultaneously in each model. In the logistic regression models, the variable number of MHPs was included to control for the possible effect of psychopathology on MHS use, as has been done in other studies[3].

Results

Table 1 shows the frequencies and percentages of the variables under study. As previously reported[28], the sample consisted of 2,022 adolescents (49.5% female) aged between 13 and 19 years (mean 15.2 years). Most of the students lived with both parents, had parents with 12 years of education or less, and 9.7% were children of migrant parents. Regarding psychopathology, 35.2% of the participants met the criteria for moderate to severe symptoms of depression, 25.9% for moderate to severe symptoms of generalized anxiety, and 28.2% for risk of problematic substance use. Regarding MHS use, 16.5% used MHS due to depression during their lifetime and 10.7% were in some mental health treatment at the time of assessment.

In relation to the percentages of MHS use among those who met the criteria for some MHPs (Table 2), between 24.2% and 30% had a lifetime history of treatment for depression, between 4.2% and 4.9% were in current pharmacological treatment, between 12.8% and 17% were in current psychological treatment, and between 14.9% and 18.9% were in some current treatment (pharmacological and/or psychological). It was also observed that the higher the number of MHPs, the higher the percentage of people using MHS.

Regarding disparities in the use of MHS according to sociodemographic variables, adjusting for the number of MHPs (Table 3), less treatment for depression during their lifetime was observed in males, adolescents aged between 13-15 years of age, and children of migrants ($p \leq 0.018$). In contrast, greater use of MHS for depression during their lifetime was observed in adolescents living with only one parent or neither parent, compared with those living with both parents ($p < 0.001$).

In relation to current pharmacological treatment, those who live with only one of their parents reported a higher rate of current pharmacological treatment than those who live with both ($p = 0.049$). No statistically significant differences were observed according to gender, age, years of parental education, and being the child of migrants ($p \geq 0.091$).

Concerning current psychological treatment and any current mental health treatment (psychological and/or pharmacological), less use of MHS was observed in adolescents who were children of migrants and among those with parents with 9 to 12 years of education, compared with those with parents with more than 12 years of education ($p \leq 0.019$). In contrast, it was observed that adolescents who live only with their father or mother, or neither, with respect to those who live with both parents, reported more frequently being in psychological treatment or other current treatment ($p \leq 0.004$).

Discussion

The results show a significant treatment gap in adolescents with MHPs, as well as the presence of disparities in the use of MHS according to the sociodemographic factors analyzed. Particularly, lower reported lifetime treatment for depression was observed in males, who are younger, and children of migrants; in contrast, lower current MHS use was observed in adolescents who have parents with 9 to 12 years of education and children of migrants; and higher lifetime and current MHS use was observed in adolescents who do not live with both parents. In general, these results indicate that the use of MHS is not equally distributed among

Table 1. Sociodemographic factors, psychopathology, and mental health service use

	n (%)
Sociodemographic factors	
Gender	
Male	1.020 (50.5)
Female	1.002 (49.5)
Age	
13-15 years old	1.210 (59.9)
16-19 years old	811 (40.1)
Lives with parents	
Both parents	1.129 (55.8)
Mother or father	808 (40.0)
Neither	85 (4.2)
Parents years of education[1]	
8 years or less	116 (6.4)
Between 9 to 12 years	933 (51.6)
13 years or more	760 (42.0)
Child of migrant parent(s)	197 (9.7)
Psychopathology	
Symptoms of depression	712 (35.2)
Symptoms of generalized anxiety disorder	523 (25.9)
Risk of problematic substance use	571 (28.2)
Mental health service use	
Lifetime treatment for depression	334 (16.5)
Current pharmacological treatment	54 (2.7)
Current psychological treatment	196 (9.7)
Any current mental health treatment	216 (10.7)

[1]n = 1809 without missing values.

Table 2. Percentages of mental health service use by mental health problems

	Lifetime treatment for depression %	Current pharmacological treatment %	Current psychological treatment %	Any current mental health treatment %
Symptoms of depression (n = 712)	28.1	4.9	16.2	17.8
Symptoms of generalized anxiety disorder (n = 523)	30.0	4.8	17.0	18.9
Risk of problematic substance use (n = 571)	24.2	4.2	12.8	14.9
Number of mental health problems (n = 2022)				
0	7.8	1.2	5.5	6.0
1	18.2	2.8	9.0	9.6
2	26.9	4.4	17.5	18.9
3	36.2	6.5	18.6	22.1

adolescents, which could reflect greater disadvantages in the use of MHS for certain groups.

In this study, a wide treatment gap was observed, as about 80% of adolescents meeting the criteria for some MHPs are not in current mental health treatment. An epidemiological study in the United States reported that, among those with a mental health disorder, 77.2% had not attended MHS[3]. In Chile, a decade ago, it was reported that 80.9% of children and adolescents who had a mental disorder had not attended a formal MHS[6]. Although there are differences in the methods used to measure psychopathology (screening instruments v/s diagnostic interviews) and in the number of disorders included in each study, similar results are observed.

After controlling for the effect of MHPs, the results also show disparities in the use of MHS according to the sociodemographic factors studied. Adolescents from migrant families reported lower use of MHS, even though they have been described as a group at higher risk of developing mental health disorders[16]. With respect to family structure, in line with other studies[3,18], adolescents who do not live with both parents are those who use MHS the most, which could reflect the impact of family stressors on the greater need for care of this group[18]. Regarding the educational level of the parents, adolescents who had parents with 9 to 12 years of education (complete and incomplete secondary education) reported being in current psychological treatment to a lesser extent compared with adolescents who had parents with more than 12 years of education. Considering that years of education are attributes that are often used in the generation of social stratification[15], this group could represent a specific social stratum (usually referred to as "middle class") which could be affected by barriers to accessing MHS that are different from those of other groups. Some of these barriers could be the difficulty in accessing public

Table 3. Sociodemographic factors associated with mental health service used adjusted for number of mental health problems

	Lifetime treatment for depression OR (95% CI)	Current pharmacological treatment OR (95% CI)	Current psychological treatment OR (95% CI)	Any current mental health treatment OR (95% CI)
Male (ref = female)	0.67 (0.51-0.87)**	1.35 (0.74-2.46)	0.74 (0.53-1.03)	0.80 (0.58-1.11)
Age 13-15 years old (ref = 16-19 years old)	0.73 (0.57-0.95)*	0.78 (0.44-1.40)	1.07 (0.77-1.48)	1.08 (0.79-1.48)
Lives with parents (ref = both parents)				
Mother or father	1.69 (1.29-2.20)***	1.84 (1.00-3.39)*	1.62 (1.16-2.25)**	1.78 (1.30-2.45)***
Neither	3.63 (2.11-6.24)***	2.64 (0.86-8.15)	2.74 (1.44-5.24)**	2.80 (1.49-5.28)**
Parents years of education (ref ≥ 12 years)				
8 years or less	1.23 (0.75-2.01)	0.76 (0.22-2.62)	0.90 (0.49-1.68)	0.89 (0.49-1.63)
Between 9 to 12 years	0.82 (0.63-1.07)	0.76 (0.42-1.38)	0.66 (0.47-0.92)*	0.68 (0.50-0.94)*
Child of migrant parent(s) (ref = no)	0.47 (0.27-0.83)**	0.47 (0.11-1.97)	0.33 (0.14-0.77)*	0.35 (0.16-0.76)**

Nota. OR = Odds Ratio. 95% CI = 95% Confidence intervals. Ref = Reference category. *** p < 0,001, ** p < 0,01, * p < 0,05

MHS and the economic cost of private services since this could be a group that is not prioritized by social programs or that does not have enough resources to afford private MHS.

In the literature, it has been observed that the use of MHS by adolescents presents variations in terms of gender and type of disorder[4] where, in general, males seek less professional mental health help, which could be rooted in cultural expectations associated with masculinity[21]. The evidence from this study, in part, is in line with that reported in the literature that males look for medical attention less than females for depression during their lifetime. However, no gender differences in current MHS use were observed after controlling for current psychopathology and other sociodemographic factors. A possible explanation for this is that other more important sociodemographic factors account for the differences in MHS use in this specific group, such as family structure, parental education, and immigration status of the adolescents.

These findings report that sociodemographic variables such as parental education level, family structure, gender, and migration status are useful variables for assessing and monitoring health disparities[15]. The use of MHS is not homogeneous among adolescents and there are more socially deprived groups that are at a greater disadvantage in using them, even after controlling for the presence of MHPs in this population. These factors, which are traditionally used in monitoring health inequities, may reflect the impact of SDH on different health outcomes, such as the use of MHS.

This study has some limitations. Its cross-sectional design does not allow us to establish causal relationships between variables. Also, the sample corresponds to adolescents from subsidized private schools in the northern area of Santiago, Chile, with students mainly from low and middle socioeconomic levels, so the data may not be representative of other contexts, for example, students from other regions, rural areas, or high socioeconomic levels. Other limitations are that the data come from a primary study in which participants were only queried for depression treatment history and not for other MHPs and that self-report questionnaires were used to assess current MHPs and not a diagnostic interview. In addition, we did not differentiate the types of MHS used by the adolescents (e.g., public or private).

Despite the limitations described, this study constitutes a contribution to the knowledge of disparities in the use of MHS by Chilean adolescents, considering the scarce evidence that explores the effect of structural SDH on the use of MHS in the adolescent population and contributes to account for the treatment gap of common MHPs in this population. Based on the results, it is recommended that future research explore disparities based on other SDH or variables that could influence access to MHS in this age group such as ethnicity, sexual orientation, gender identity, rurality, and other populations that could be at a greater disadvantage in access to and use of MHS. Similarly, progress is needed in the use of an intersectional perspective[29] to analyze these and other sociodemographic and SDH factors together, and their effect on disparities in access to and use of MHS. In addition to detecting disparities in the use of MHS, it is important to delve deeper into the possible mechanisms or barriers that explain these disparities and that could be specific to each group and context (for example, distance to services, availability of medical appointments, stigma towards mental health, symptom recognition, among others), in order to address them on time.

Ethical Responsibilities

Human Beings and animals protection: Disclosure the authors state that the procedures were followed according to the Declaration of Helsinki and the World Medical Association regarding human experimentation developed for the medical community.

Data confidentiality: The authors state that they have followed the protocols of their Center and Local regulations on the publication of patient data.

Rights to privacy and informed consent: The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the correspondence author.

Conflicts of Interest

Authors declare no conflict of interest regarding the present study.

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