

TREATMENT GAP IN THE AMERICAS

Technical Document

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¹ The opinions expressed by the author in this technical document are his responsibility and do not necessarily represent the official views of the Pan American Health Organization.

CONTENTS

Acronyms.....	v
Executive Summary.....	vii
I. Prevalence of mental disorders in adults	1
II. Prevalence of mental disorders in children and adolescents.....	4
III. Service utilization and the treatment gap among adults	6
A. Resources in Mental Health.....	6
B. The treatment gap of anxiety, affective and substance use disorders.....	7
C. The treatment gap for schizophrenia.....	11
IV. Service utilization and the treatment gap among children and adolescents	13
V. Service utilization and treatment gap of indigenous populations.....	15
VI. Addressing barriers to care to mental health care.....	16
VII. Final Remarks.....	17
References.....	21
Appendix.....	31

ACRONYMS

ADHD	Attention deficit hyperactivity disorder
CAPA	Child and Adolescent Psychiatric Assessment
CCHS	Canadian Community Health Survey: Mental Health and Well-Being
CIDI	Composite International Diagnostic Interview
CIDI-A	Composite International Diagnostic Interview–Adolescent Supplement
CIS-R	Clinical Interview Schedule
CPPS	Chilean Psychiatric Prevalence Study
DAWBA	Developmental and Well-Being Assessment
DIS	Diagnostic Interview Schedule
DISC	Diagnostic Interview Schedule for Children
DSM	Diagnostic and Statistical Manual of Mental Disorders
ECA	Epidemiological Catchment Area Study
GAF	Global Assessment of Functioning
GNI	Gross National Income
ICD	International Statistical Classification of Diseases and Related Health Problems
ICPE	International Consortium of Psychiatric Epidemiology
LAC	Latin America and the Caribbean
MAPSS	Mexican American Prevalence and Services Survey
MECA	Methods for the Epidemiology of Child and Adolescent Mental Disorders
NCS	National Comorbidity Study
NCS-A	National Comorbidity Survey Replication Adolescent Supplement
NCS-R	National Comorbidity Study-Replication
NESARC	National Epidemiologic Survey on Alcohol and Related Conditions
NGO	Non-governmental organization
NHANES	National Health and Nutrition Examination Survey
NLAAS	National Latino and Asian American Study
NLAES	National Longitudinal Alcohol Epidemiologic Survey
NPHS	National Population Health Survey
NSAL	National Survey of American Life
PSE	Present State Examination
QMPA	Questionnaire for Psychiatric Morbidity in Adults
WHO	World Health Organization
WHO-AIMS	World Health Organization Assessment Instrument for Mental Health Systems

EXECUTIVE SUMMARY

- ❖ Well-designed epidemiological studies that provide information on the prevalence of mental illness and service utilization of mental health services exist in North America and in a number of countries in Latin America and the Caribbean (LAC) for adult populations, as well as for children and adolescents.
- ❖ Information on mental health resources and services are available for nearly all countries in the Americas from the World Health Organization (WHO) Atlas projects and the WHO-AIMS (World Health Organization Assessment Instrument for Mental Health Systems). These databases revealed that disparities continue to exist in mental health services and resources even among high-middle income countries, and that the mental hospital continues to be the focal point of care, despite that a lower treatment gap in schizophrenia is associated with outpatient programs and community follow-up.
- ❖ The availability of more representative data of the population of the Americas on mental health services and prevalence of mental illness has provided a better understanding of how wide the treatment gap has emerged for the Region.
- ❖ Among adults with severe and moderate affective disorders, anxiety disorders and substance use disorders, the median treatment gap is estimated to be 73.5% for the Americas, 47.2% for North America, and 77.9% for LAC. For all disorders regardless of severity the treatment gap in the Americas is 78.1%. The treatment gap in the United States for schizophrenia is 42.0%, whereas in LAC the treatment gap is 56.4%.
- ❖ The median treatment gap for the Americas for children and adolescents is 63.8% and 52.6% for severe mental disorders.
- ❖ Mental health services utilization studies of the indigenous population showed a very low use of formal mental health services among the mentally ill.
- ❖ Barriers to care continue to need to be bridged, and are one of the main obstacles to reducing the treatment gap.

I. PREVALENCE OF MENTAL DISORDERS IN ADULTS

Estimates of the prevalence of specific mental disorders in numerous countries in the Americas have been established using semi-structured interview schedules that can be administered by lay interviewers linked to current diagnostic criteria. This methodology has improved the reliability and validity of psychiatric diagnoses in epidemiological surveys.

These studies have shown mental disorders are highly prevalent in the community. In addition to their high prevalence, the early age of onset increases the burden of illness of neuropsychiatric disorders. About half of all mental disorders start by the mid-teens and three quarters by the mid-20s (Kessler et al., 2007). Table 1.1 includes definitions, according to the 10th Revision of the International Statistical Classification of Diseases and Related Health Problems, (ICD-10), of the mental disorders and other conditions of interest included in this report.

Numerous community-based mental health prevalence studies in both North America and Latin America using semi-structured interview schedules have been conducted since the 1980's (Kohn & Rodriguez, 2009). These studies have increased the public health awareness of mental disorders. Early studies primarily focused on establishing the rates and associated risk factors of disorders. Table 1.2 provides a summary of the primary studies that have used representative community sample designs based on face-to-face semi-structured or fully structured diagnostic interviews conducted in the Americas. Studies are limited to those that have a broad age-spectrum and are representative of the population, not limited to specific ethnic groups, and have a sample size of over 1,000 unless no other study was conducted in that country. For the United States, rates for the Hispanic and Afro-Caribbean populations are provided.

Latin American countries have a tradition of conducting prevalence household surveys of adult mental disorders since the first interview schedules became available. The first such study was conducted in a series of stratified districts in the region of Buenos Aires, Argentina, in 1979 using the Present State Examination (PSE) (Larraya et al., 1982). This study found an exceptionally high point prevalence rate for schizophrenia of 3.0%. Apart from schizophrenia, the rates in this study cannot be compared to other countries as it used ICD-9 diagnoses: affective psychosis, 4.0%; paranoia, 0.2%; neurotic depression, 3.5%; and neurotic disorders, 14.5%.

Four studies have been conducted in Brazil (Table 1.3) (Mari et al., 2007). The first major investigation consisted of surveys of three major urban areas: Brasília, São Paulo, and Porto Alegre; they used a two-stage cross-sectional design. The first stage of the *Brazilian Multicentric Study of Psychiatric Morbidity* was a screening interview using the Questionnaire for Psychiatric Morbidity in Adults (QMPA). Each family member above the age of 14 completed the screening interview. The second stage consisted of a structured diagnostic interview developed by the Brazilian team based on the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) and was conducted on 30% of the screened positives and 10% of the screened negatives (Almeida

Filho et al., 1997). The first study in Brazil using the Composite International Diagnostic Interview (CIDI), which was part of the International Consortium of Psychiatric Epidemiology (ICPE) (Andrade et al., 2003) and allowed cross-national comparisons, was conducted in São Paulo in a middle and upper socioeconomic class catchment area (Andrade et al., 1999). The second CIDI study in Brazil that was conducted in the town of Bambui, in the state of Minas Gerais; published results have been limited to only the diagnosis of depression and social phobia (Vorcaro et al., 2001; Vorcaro et al., 2004). The most recent survey is part of the World Mental Health Survey, with the sampling frame drawn from the metropolitan São Paulo area (Andrade et al., in press; Andrade et al., 2012; Viana et al., 2012).

Two surveys were completed in Chile (Table 1.4). The first study used the Clinical Interview Schedule (CIS-R) and examined the prevalence of common mental disorders in the metropolitan area of Santiago (Araya et al., 2001). The second, the *Chilean Psychiatric Prevalence Study* (CPPS, for its acronym in Spanish) utilized the CIDI and was part of the ICPE (Vicente et al., 2006). The CPPS was the first nationally representative prevalence study conducted in Latin America. It was based on a national population sample drawn from four provinces in Chile, representing each of the major geographic regions of the country.

In Colombia, three nationally representative studies were conducted using the CIDI (Table 1.4). The first was a large national study that included the CIDI as part of a survey on drugs and alcohol (Torres de Galvis et al., 1997). The second was limited to affective disorders (Gómez-Restrepo et al., 2004). The third nationally representative study is part of the World Mental Health Survey (Posada-Villa et al., 2004). In Peru, one of the earliest studies using the Diagnostic Interview Schedule (DIS) was conducted in Independencia, a poor northern district of Lima (Minobe et al., 1990). The only community-based prevalence study of psychiatric disorders conducted in the Caribbean is from Puerto Rico, also based on the DIS (Canino et al., 1987).

Table 1.5 shows the prevalence rates for the surveys conducted in Mexico. Two studies were based on nationally representative samples. One was limited to urban areas of the country (Caraveo-Anduaga et al., 1996), using the PSE supplemented by the DIS. The other, used the CIDI in a representative national sample (Medina-Mora et al. 2005) and is one of the three Latin American surveys that are part of the World Mental Health Survey. An earlier study using the CIDI was limited to Mexico City (Caraveo-Anduaga et al., 1999) and was part of the ICPE. Two other studies that used the CIDI were regionally based outside Mexico City. One was based on a sample drawn from the rural regions in two Mexican states (Salgado de Snyder et al., 1999), and the other was of four cities that were at risk of trauma from natural disasters (Norris et al., 2003).

Guatemala has recently completed a national mental health prevalence survey, which is the first and only study conducted in Central America. It has a relatively smaller sample size, but it is of particular interest as it is the only study from a low-middle income economy in the Americas and a significant proportion of its sample is indigenous (Table 1.5).

A number of studies of adult psychiatric disorders were conducted in Canada (Table 1.6). The earliest Canadian study was called the *Stirling County Survey*, and had three waves of representative cross-sectional surveys beginning in 1952, 1970 and 1992 (Murphy et al., 2000). The psychiatric epidemiological study of the province of Edmonton, based on the DIS, was the first study to try to provide Canada with estimates for a broad range of psychiatric disorders (Bland et al., 1988a; Bland et al., 1988b; Newman & Bland, 1994). Subsequently, rates for the province of Ontario (Offord et al., 1996) were estimated using the CIDI. The first nationally representative sample was limited to examining the rates of major depression and alcohol use disorders across Canada in the *National Population Health Survey* (NPHS) (Patten & Charney, 1998). More recently, a second national study, the *Canadian Community Health Survey: Mental Health and Well-Being* (CCHS), of the Statistics Canada examined the rates of a range of psychiatric disorders using the World Mental Health Composite International Diagnostic Interview (WMH-CIDI) (Gravel & Béland, 2005; Carney & Streiner, 2010).

Regarding the United States, there are a number of community-based psychiatric epidemiological surveys of large representative population samples (Table 1.7). The *Epidemiological Catchment Area Study* (ECA) was the first study to examine a broad spectrum of psychiatric disorders in five sites in the United States based on the DIS (Robins & Regier, 1991). This was the first major survey using lay interviewers and a fully structured interview schedule in the Americas. The *National Comorbidity Study* (NCS) launched the transition to the CIDI as the standard lay-administered diagnostic interview schedule. This study examined disorders in a representative sample from 48 coterminous states in the United States (Kessler et al., 1994). The participants in this study were re-interviewed ten years later with the sample augmented to also represent the elderly population of the country in the *National Comorbidity Study-Replication* (NCS-R) (Kessler et al., 2005). Two other national surveys were conducted to primarily examine the rate of substance abuse, the *National Longitudinal Alcohol Epidemiologic Survey* (NLAES) (Grant, 1995), and the *National Epidemiologic Survey on Alcohol and Related Conditions* (NESARC) (Grant et al. 2003), but also included other psychiatric diagnoses.

A number of community based epidemiological studies in the United States have focused on the rates of disorders in specific ethnic groups (Table 1.8). The mental health of Mexican Americans in California was examined in the *Mexican American Prevalence and Services Survey* (MAPSS) (Vega et al., 1998). The rates from this survey were compared to those of the study conducted in Mexico City using the CIDI and to those of the Hispanics in the NCS. The rates of Hispanics in the NCS-R have also been compared to non-Hispanic Whites, as well as to immigrant and non-immigrant Hispanics (Breslau et al., 2006). A similar analysis was conducted with Mexican Americans in the NESARC study (Grant et al., 2004). The *National Latino and Asian American Study* (NLAAS) examined the rates of mental illness across various Hispanic groups and by generation in the United States (Alegría et al., 2008). The *National Survey of American Life* (NSAL) focused on African Americans and their prevalence of mental illness including immigrant and non-immigrant Caribbean blacks (Williams et al., 2007). In general, these studies have found that first generation immigrants from Latin America and the Caribbean

(LAC) have lower rates of affective, anxiety, and substance use disorders than second and third generation immigrants.

All these studies conducted across a range of countries in the Americas have begun to provide a more complete picture of the rates of mental disorders in the Region and an understanding of the number of people in need of mental health care. Data from the English Caribbean is lacking and from many countries in Central and South America are non-existent. Nonetheless, the studies that do exist can be used as an estimate of the needs throughout the Region.

II. PREVALENCE OF MENTAL DISORDERS IN CHILDREN AND ADOLESCENTS

The mental health of children and adolescents in the Region of the Americas has not been well studied, with the exception of North America; however, an increasing number of prevalence studies have emerged in the last two decades. There is a growing need to better understand the prevalence and associated factors for mental health problems in children and adolescents, in particular in LAC.

In 2005, a sizable proportion of the population was less than 15 years old, ranging from 35.7% in Central America to 27.2% in South America, in contrast to 18.8% for North America. The growing pandemic of violence and substance use has made more pressing an understanding of the mental health needs of children and adolescents in the Region. The World Health Organization (WHO) (2005) has emphasized that psychiatric disorders with onset in childhood and adolescence should be a matter of public health concern.

Studies examining the prevalence of disorders in children using diagnostic instruments were performed in different countries of the Americas (Table 2.1). In Latin America, they were limited to Brazil (Fleitlich-Bilyk & Goodman, 2004; Goodman et al., 2005; Anselmi et al., 2010), Colombia (Torres de Galves, 2010; Torres de Galves et al., 2012), Chile (Vicente et al., 2012; Vicente et al., 2012), Mexico (Benjet et al., 2009), and Puerto Rico (Bird et al., 1988; Shaffer et al., 1996; Canino et al., 2004) (Table 2.1). Studies were also conducted in Venezuela (Montiel-Nava et al., 2002) and Colombia (Cornejo et al., 2005; Pineda et al., 2009), but they were limited to attention deficit hyperactivity disorder (ADHD). The prevalence surveys conducted in Brazil were limited to children, and the Mexican survey was limited to adolescents. In Chile there was an earlier report on 1st and 6th grade schoolchildren that employed a non-standardized semi-structured clinical interview conducted by child psychiatry fellows (de la Barra et al., 2004). Earlier studies in Latin America were based on screening instruments (Duarte et al., 2003).

A number of studies were conducted with this age group in the United States starting with the Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) study (Shaffer et al., 1996) and most recently the National

Comorbidity Survey Replication Adolescent Supplement (NCS-A) (Kessler, 2012). Another five studies of this age bracket were also carried out in the United States (Angold et al., 2002; Costello et al., 2003; Roberts et al., 2007; Carter et al., 2010; Merikangas et al., 2009). Only one study using a structured diagnostic interview was conducted in Canada (Brenton et al., 2009).

All the studies conducted were based on four different diagnostic instruments. The ones performed in Brazil (Fletlich-Bilyk et al., 2004; Goodman et al., 2005; Anselmi et al., 2010) used the Developmental and Well-Being Assessment (DAWBA) (Goodman et al., 2000). They obtained overall prevalence rates of 7.0% - 12.7%. Two of the studies from the United States (Angold et al., 2002; Castello et al., 2003) used the Child and Adolescent Psychiatric Assessment (CAPA) (Angold et al., 1995). The prevalence rates varied from 13.3% to 21.1%. Three studies, in Colombia (Torres de Galvis et al. 2012), in Mexico (Benjet et al. 2009), and the NCS-A in the United States (Kessler et al. 2012) were based on the Composite International Diagnostic Interview–Adolescent Supplement (CIDI-A) (Merikangas et al. 2009). The 12-month prevalence rate for the Colombian study was 16.1%; for the Mexican study, 39.4%; and for the one from the United States, 42.6%. Most studies, eight, were based on the Diagnostic Interview Schedule for Children (DISC) (Schaffer et al., 2000). The overall prevalence rate across the DISC studies had a wide range, 13.1% to 50.6%. When impairment criteria are utilized the rates in the DISC studies ranged from 5.3% to 21.6%.

The only studies conducted on a national representative sample are those from Puerto Rico (Bird et al., 1988; Canino et al., 2004); the United States (Merikangas et al., 2009; Kessler et al., 2012); Colombia - limited to urban areas (Torres de Galvis et al. 2012); and Chile (Vicente et al., 2012). In their review of ADHD in Latin America, Polanczyk et al. (2008) highlighted that there was a complete absence of national surveys concerning children's mental health in the Region, and studies that generated evidence pertaining to specific populations could only be found in three of 46 countries. Merikangas and colleagues (2009) in arguing that the United States was in need of a national mental health survey stated "*The absence of empirical data on the magnitude, course, and treatment patterns of mental disorders in a nationally representative sample of US youth, has impeded efforts essential for establishing mental health policy.*" Only recently has the United States conducted studies on child and adolescent mental health at a national level. Clearly, the argument is even stronger for LAC, where resources for child and adolescent mental health are still limited.

III. SERVICE UTILIZATION AND THE TREATMENT GAP IN THE AMERICAS AMONG ADULTS

Resources in mental health

Two sources provide data on mental health resources in the countries of the Americas: the *World Health Organization Mental Health Atlas*, which was compiled in

2001, 2005 and again in 2011 (WHO Mental Health Atlas, 2001; WHO Mental Health Atlas, 2005; WHO Mental Health Atlas, 2011); and the *World Health Organization Assessment Instrument for Mental Health Systems* (WHO-AIMS) (WHO, 2005).

The WHO-AIMS data was collected between the years 2004 to 2010 in 34 countries and territories of LAC. The WHO-AIMS 2.2 (WHO, 2005) consists of 155 input and process indicators, covering six domains: policy and legislative framework, mental health services, mental health in primary health care, human resources, public information and links with other sectors, and monitoring and research. The overall goal of collecting this data is to improve the country's mental health systems and to provide a baseline for monitoring change.

The treatment gap of anxiety, affective and substance use disorders

The treatment gap can serve as an important public health indicator highlighting the unmet need for mental health care (Kohn et al., 2004; Kohn et al., 2005). The treatment gap is the absolute difference between the number of individuals with a disorder and the number of individuals who are receiving appropriate care in the health services for that condition. It can be described as the percent of individuals who are in need of treatment and are not receiving it.

There are a sizable number of prevalence studies that were conducted in the Americas over the last 35 years that have improved our understanding of the high rate and burden of mental illness (Table 1.2). To better understand the prevalence of disorders and the mental health service needs of the population throughout the hemisphere, seven representative studies were included for this analysis of the treatment gap. Each collected data on mental health service utilization. The first studies selected belonged to the *World Mental Health Survey*, an initiative whose purpose was to develop an epidemiological study on the prevalence of mental disorders throughout the world using similar methodology (Kessler et al., 2009). Four countries in the Americas are represented in this initiative: Brazil (Andrade et al., 2012), Colombia (Posada-Villa et al., 2004), Mexico (Medina-Mora et al., 2005), and the United States (NCS-R) (Kessler et al., 2005). Although the Brazilian study is limited to metropolitan São Paulo, it is the most comparable from Brazil to the other selected studies regarding methodology.

Three other nationally representative studies were included, which used similar methodology and were conducted outside the World Mental Health Survey: the CCHS (Gravel & Béland, 2005); the CPPS (Vicente et al., 2006); and a study in Guatemala (Lopez et al.), still to be submitted. The WHO- CIDI was used in each of these studies to obtain DSM-IV or DSM-III-R diagnoses (Robins et al., 1988); the Canadian study, like the four World Mental Health Survey studies, used the WMH-CIDI. The Chilean study and the Guatemalan survey both used the CIDI 2.2. The Chilean survey is the oldest of the seven studies; however, it is the only one available from the Southern Cone of the Region of the Americas.

All surveys were based on probability samples of the adult household population of the participating countries. The population samples were selected either to be nationally representative (Canada, Chile, Guatemala and the United States), representative of all urbanized areas in the country (Colombia and Mexico), or representative of a particular region of the country (Brazil – metropolitan São Paulo). Each of the studies was weighted to the population census of the population sampled. The 12-month prevalence rate of mental disorders for each of the selected psychiatric epidemiologic prevalence studies was obtained for affective, anxiety and substance use disorders (Table 3.1).

In addition, the prevalence by the severity of the disorders was obtained. The World Mental Health Survey described severity in the following way (Wang et al. 2007): *“Serious disorders were defined as bipolar I disorder or substance dependence with a physiological dependence syndrome, making a suicide attempt in conjunction with any other disorder, reporting severe role impairment due to a mental disorder in at least two areas of functioning measured by disorder-specific Sheehan Disability Scales (Leon et al., 1997) or having overall functional impairment from any disorder consistent with a Global Assessment of Functioning (GAF) (Endicott et al., 1976) score of 50 or less. Disorders were classified as moderate if the respondent had substance dependence without a physiological dependence syndrome or at least moderate interference in any Sheehan Disability Scales domain. All other disorders were classified as mild.”*

As data on the Sheehan Disability Scales were not readily available for the Canadian study, and not used in the Chilean and Guatemalan studies, severity was determined using a modification of the algorithm originally developed by the ICPE (Bijl et al., 2003). A severity variable was constructed for all respondents who met criteria for at least one of the disorders. Based on preliminary analyses of the effects of the disorders in predicting summary measures of role impairment, some disorders were given 0.5 points (alcohol abuse, drug abuse, somatization disorder, and cognitive disorder); others, one point (alcohol dependence, drug dependence, agoraphobia, dysthymia, and generalized anxiety disorder); others, two points (bipolar disorder, panic disorder, post-traumatic stress disorder, obsessive compulsive disorder, depression); and non-affective psychotic disorders three points. Additional, points were given for comorbidity. Severity categories were defined based on summary scores as follows: 0.5–1, mild; 1.5–2.0, moderate; and > 2, serious (Vicente et al., 2007).

Data from published sources was compiled to create the tables for the World Mental Health Survey Studies (Benjet et al., 2004; Borges et al., 2006; Borges et al., 2007; Bromet et al., 2011; Demyttenaere et al., 2004; Druss et al., 2007; Kessler et al., 2005; Kessler et al., 2005; Kessler et al., 2005; Kessler et al., 2007; Kessler et al., 2008; Kessler et al., 2008; Kessler et al., 2009; Medina-Mora et al., 2003; Medina-Mora et al., 2005; Medina-Mora et al., 2007; Medina-Mora et al., 2008; Mojtabai et al., 2011; Posada-Villa et al., 2004; Possada-Villa & Trevisi, 2004; Posada-Villa et al., 2008; Rafful et al., 2012; Uebelacker et al., 2006; Wang et al., 2005; Wang et al., 2005; Wang et al., 2007; Wang et al., 2007). For the Chilean (Saldivia et al., 2004; Vicente et al., 2004; Vicente et al., 2005; Vicente et al., 2006), Canadian (Cairney & Steiner, 2010;

Lesage et al., 2006; Patten et al., 2006; Roberge et al., 2011; Sareen et al., 2005; Urbanoski et al., 2007; Urbanoski et al., 2008; Vasiliadis et al., 2005; Wang et al., 2005) and Guatemalan studies, an additional secondary data analysis was conducted .

The 12-month prevalence for any mental disorder ranged from 7.2% to 27.0% for the six studies: Brazil, 29.6%; the United States, 27.0%; Colombia, 21.0%; Canada, 18.7%; Chile 17.0; Mexico, 13.4%; and Guatemala, 7.2% (Table 3.1). The Brazilian study had the highest prevalence of anxiety disorders followed by the United States. Canada, Mexico and Guatemala had the lowest rates of affective disorders. Chile had the highest rate of substance use disorders. Respondents from the United States reported higher rates of severe disorders compared to the other countries. Table 3.2 10 provides the available data on 12-month and lifetime prevalence for specific disorders.

The estimated 12-month prevalence for any disorder ranged from 18.7% to 24.2% for the Americas (Table 3.3). The rate for anxiety disorders ranged from 9.3% to 16.1%; for affective disorders 7.0% to 8.7%; and substance use disorders 3.6% to 5.3%. Table 3.4 presents summary rates for the Americas for 12-month and lifetime prevalence of specific diagnoses. Estimated rates of mental disorders is presented using three estimates mean, median, and weighted by the population of the available countries.

Table 3.5 offers data on service utilization by severity and type of health care service provider for the seven countries for 12-month prevalent disorders. The treatment gap in Colombia was the highest of all the countries based on any form of treatment, 86.1%; Guatemala, 84.9%; Mexico, 81.4%; Brazil, 78.1%; Canada, 74.1%; Chile, 61.5%; and the United States, 58.9%. Although Guatemala had a lower treatment gap than Colombia, it had a high rate of complementary treatment (Non-Health Care), 10.4%, and based only on formal health care providers, the gap increased to 95.5%. The treatment gap remained high for even the most severe disorders, Guatemala, 86.9%; Colombia, 72.2%; Mexico, 76.2%; Brazil, 67.2%; Canada, 42.0%; United States, 40.3%; and Chile, 39.8%.

There is considerable variability when specific disorders and the treatment gap are examined (Tables 3.6 - 3.8). Non-affective psychosis went untreated in 42.0% of the individuals in the United States, 46.3% in Chile, and 85.1% in Guatemala. Major depression is untreated in 37.6% of the individuals in Chile, 43.0% in Canada, 43.2% in the United States, 73.9% in Mexico, and 76.2% in Guatemala. The highest rate of untreated disorders was for alcohol abuse/dependence. Information from Brazil and Colombia was not available.

The implications of ignoring the treatment gap are noted in examining the number of days that individuals are out of their role per year (Table 3.9). Data was available only for Brazil, Canada, Colombia, Mexico and the United States. For severe disorders, being out of one's role, ranged from 1.5 months in Mexico to over 6 months in the United States. Even for mild disorders, on average, one lost a working week at minimum.

As Table 3.10 illustrates the issue of the treatment gap is not just the total lack of treatment, but also how soon individuals with mental illness seek care; in other words, the treatment lag. In Canada, only one-third of those with an anxiety or affective disorder sought treatment in the first year. This was dramatically worse in the other countries. For affective disorders, the delay in initial treatment ranged from 2 to 14 years, even among those who sought treatment.

Based on these seven countries we can make some crude estimates of the treatment gap for the Americas (Table 3.11). The median treatment gap for any 12-month prevalent disorder in the Region is 78.1%. For severe disorders, the treatment gap is 67.2%, and for mild disorders, it increases to 86.3%. For Latin America, the treatment gap for any disorder is 81.4%.

The United States and Canada are the only two countries in North America that can be used to calculate a weighted treatment gap based on the population. Kohn and

colleagues (2004) defined calculation of the treatment gap as $G = \frac{\hat{a}[(1 - S_c)R_cP_c]}{\hat{a}[R_cP_c]}$.

Regional treatment gap (G) calculations take into account the service utilization rate (S_c), the prevalence rate (R_c), and the population size (P_c) of each of the countries. The population of the United States is 312.8 million, and of Canada 34.5 million. The treatment gap for North America for any disorder is 60.0% and for severe disorders, 40.4%; however, for mild disorders it increases to 75.1%.

The treatment gap for 12-month prevalent anxiety disorders is 56.2% for the Americas, 80.1% in Latin America, and 46.3% for North America (Table 3.12). For affective disorders the treatment gap is lower, 66.3%, 83.2%, and 57.9% respectively. Substance use disorders have the highest treatment gap, 79.6% for the Americas. Table 3.13 provides the mean and median treatment gap across the available studies, by disorder.

How do these current estimates of the treatment gap compare to earlier ones for the Americas and Latin America? This comparison is difficult to make as the earlier studies had significant variability in methodology to determine prevalence rates. Current studies all use the CIDI. The exclusion of Brazil and Colombia perhaps may even underestimate the treatment gap for individual disorders, as their treatment gap for any disorder was among the highest. Furthermore, the treatment gaps for Brazil, Colombia, and Mexico did not include rural areas, where treatment may be even scarcer. Given these limitations, the current analysis suggests little change in the treatment gap in the Americas as a whole, and possibly an increased estimate for Latin America (Table 3.13). This increased estimate may also be due to the inclusion of a country like Guatemala, with fewer resources and economically more disadvantaged compared to the countries included in the earlier study.

The examination of service utilization as the primary measure of treatment gap is limited. Treatment lag remains an issue. Furthermore, the adequacy of treatment may be an issue among those who are receiving services. For example, in the United States,

major depression treatment that met conventional criteria for adequacy was found in only 41.7% of cases, suggesting that only 20.9% of all people with a 12-month major depressive disorder received adequate treatment (Kessler et al., 2007). In Mexico, only 57.0% of those receiving any services obtained treatment that could be considered minimally adequate (Borges et al 2006). In Canada, the rates of minimal standards of treatment adequacy for anxiety disorders ranged from 36.8%, among those consulting primary care, to 51.5%, among those consulting specialized mental health services, and 79.5% for individuals consulting both primary care and mental health services (Roberge et al., 2011). This would mean, for example, that the treatment gap would be markedly higher for major depression in Canada, around 79.1%.

The treatment gap of schizophrenia

The WHO-AIMS was used to determine the treatment gap for schizophrenia (WHO, 2005; 2007; Saxena et al., 2007). The indicators on mental health services and human resources of this instrument were used for the evaluation. The WHO-AIMS provides information for each country on treated prevalence and service utilization. Treated prevalence is considered the proportion of people with mental disorders served by the mental health system.

The rate of individuals who received care by the various types of mental health facilities over the past year per 100,000 population (outpatient facilities, community-based psychiatric inpatient units and mental hospitals) may be considered as an indicator for treated prevalence in specialized services. Thirty-four LAC countries and territories completed an evaluation of their mental health system using the WHO-AIMS.

The methods used in this analysis were based on a larger study using the WHO-AIMS examining the treatment gap for schizophrenia globally (Lora et al 2012). In a few countries the number or proportion of individuals with schizophrenia in a given treatment setting was unknown (outpatient facilities, community-based psychiatric inpatient units and mental hospitals); for these cases an estimate was done based on a regional median value, weighted by population based on the total number of patients seen in the given setting. Data regarding outpatient centers was imputed from five countries (Barbados, Dominica, Grenada, Saint Lucia and Suriname). Four countries needed imputed data of community-based psychiatric units (Barbados, Dominican Republic, Ecuador and Peru). One country (Trinidad and Tobago) required imputed data for mental hospitals. Brazil did not provide the percentage of individuals with schizophrenia in outpatient clinics; the published estimate available for the city of Santos was therefore used (38%) (Andreoli et al., 2004).

Service utilization was calculated as the number of persons treated for schizophrenia in specialized services (outpatient facilities, psychiatric units in general hospitals and mental hospitals) in a given year, divided by the total number of persons with the disorder. The population of each country was based on United Nations 2004 estimates. Although the WHO-AIMS also provides information on admissions to day treatment facilities, these data could not be incorporated, as diagnostic breakdowns are

not recorded. However, overall admission rates at this type of facilities are modest in relation to admission rates to outpatient facilities, psychiatric units in general hospitals and mental hospitals; therefore, the absence of this information is unlikely to substantially impact the estimates. For each country, the treated prevalence rate per 1,000 for schizophrenia across all mental health facilities was compared with prevalence estimates for schizophrenia based on the Global Burden of Disease data using WHO subregion classification for the Caribbean (5.75) and Latin America (4.41).

As an evaluation of the validity of the aggregate estimates of the treatment gap for schizophrenia based on the 34 countries and territories which had WHO-AIMS data, an estimate of the treatment gap for schizophrenia was conducted using five countries, which had the highest quality of WHO-AIMS data collection and represented different subregions in LAC (Chile, Guatemala, Jamaica, Panama, Paraguay). A weighted treatment gap based on the countries populations of 69.7% was obtained, with a mean treatment gap of 64.7% and median of 80.3%.

Table 3.14 presents treated prevalence, service utilization, and treatment gap for each of the countries. Seven countries had unstable data due to their small populations, with resulting negative treatment gaps. They were included in the aggregate analysis. Table 3.15 presents average, median and weighted treatment gap by subregions. The weighted treatment gap takes into account the population size of each of the countries. The results for the median and weighted rates are similar. Overall, in LAC there is a 56.4% treatment gap for schizophrenia, suggesting that more than half of the individuals with schizophrenia do not receive treatment. The treatment gap is lower in the Caribbean, 38.3%, and higher in Mexico, 93.7%. There was a large variation between countries that were low-income (low and low-middle income) and high-income (high-middle income and high-income) in the treatment gap, 74.7% compared to 54.1%. In low-income countries in LAC nearly three-quarters of those with schizophrenia go without treatment.

Based on the five-nation validity test, the overall LAC treatment gap for schizophrenia of 56.4% may be low. Both Brazil and Mexico's treatment gaps may be outliers, the former may be far underestimated and later too high.

The treatment gap was significantly higher in countries with larger populations (Spearman $r = 0.53$, $p < 0.001$, $N = 35$). The treatment gap was inversely correlated with the percentage of the health budget spent on mental health (Spearman, $r = -0.34$, $p < 0.05$, $N = 35$), but unrelated to the amount of the mental health budget spent on mental hospitals or the countries' gross national income. There was a trend toward an inverse relationship with Gross National Income (GNI) (Spearman $r = -0.34$, $p < 0.07$, $N = 30$). Whether or not the mental hospitals had integrated outpatient programs was not correlated with the treatment gap, or the availability of day hospitals or mobile treatment teams. However, countries that have a greater proportion of the population with free access or at least 80% coverage of essential psychiatric medications had a lower treatment gap (Spearman $r = -0.52$, $p < 0.001$, $N = 35$). An inverse relationship exists between the number of outpatient facilities available to the population and the treatment gap (Spearman $r = -0.49$, $p < 0.003$, $N = 35$) and the amount of follow-up within

community care that these outpatient programs provide (Spearman $r = -0.47$, $p < 0.005$, $N = 35$). In addition, having psychiatric beds available in community hospitals was related to a lower treatment gap (Spearman $r = -0.37$, $p < 0.03$, $N = 35$), whereas beds in mental hospitals do not reduce the treatment gap. Another factor found to lower the treatment gap was the availability of psychotropic medications in primary care (Spearman $r = -0.35$, $p < 0.04$, $N = 35$). Interestingly, there was no significant correlation between the treatment gap and the number of psychiatrists, other physicians working in mental health, or psychologists. However, the number of nurses and social workers was associated with a lower treatment gap (Spearman $r = -0.55$, $p < 0.001$, $N = 35$; $r = -0.35$, $p < 0.05$, $N = 35$). When a backwards regression was conducted using all the variables significantly associated with treatment gap, only outpatient follow-up available in the community remained in the model (Beta = -0.877 , $se = 25.44$, $p < 0.003$, $r^2 = 0.25$).

The results of this analysis suggest that over-half of the persons with schizophrenia in LAC do not have access to specialized mental health care. The treatment gap (56.4%) is much larger than that reported in 2005 (44.4%) (Kohn et al., 2005). The difference between these two studies may be explained by the different data sources used in the two analyses. The earlier study was based on household epidemiological surveys from São Paulo (Andrade et al., 1999), Chile (Vicente et al., 2006), and Puerto Rico (Canino et al., 1987), which had treatment gaps of 58.0%, 44.4%, and 9.7%, respectively. These findings using the WHO-AIMS are consistent with the results obtained in the community-based prevalence studies of Latin America (Table 3.13) where a treatment gap of 65.7% was found; however, that estimate is only based on Guatemala with a treatment gap of 85.1% and Chile 46.3%. The worldwide treatment gap using the WHO-AIMS in low to high-middle-income countries was 69% (Lora et al., 2012).

The treatment gap for schizophrenia based on the WHO-AIMS includes a broader range of countries including those in the middle-low income group. In addition, this may be a reasonable estimate given that the NCS-R conducted in the United States had a treatment gap of 42% for non-affective psychosis (Kessler et al., 2005). Furthermore, a treatment prevalence study completed in 1993 found a 63% treatment gap for schizophrenia in Belize (Bonander et al., 2000). This suggests that there has been little change in the treatment gap for schizophrenia in the past decade.

One of the main findings from the WHO-AIMS is that the majority of persons with schizophrenic disorders were treated in outpatient facilities. Outpatient care is an effective means of increasing coverage within a mental health system.

These findings based on the WHO-AIMS have some limitations, due to the scarcity of reliable databases from many of the countries, raising questions about the reliability and validity of the information reported by the countries. For example, no information could be obtained of cases seen at the primary care level. On the other hand, WHO-AIMS does not collect information on diagnostic breakdown in day treatment facilities and community residential facilities; therefore, treated prevalence could be underestimated. However, these types of facilities are rare in LAC (Rodriguez et al., 2007). In addition, the availability of information from private and non-government

administered mental health facilities such as non-governmental organizations (NGOs) was variable. Access to private mental health facilities is primarily limited to those with financial means; few NGOs focus on treatment of persons with serious mental disorders. Additional coverage provided by these sectors would be small. Moreover, these studies did not measure the appropriateness of treatment and therefore may greatly overestimate the number of people that received appropriate treatment.

There may be a bias in terms of overestimation of the treated prevalence rate as some patients may have been treated in more than one setting (e.g. a patient may be treated in both a community-based inpatient unit and in an outpatient clinic within the same year) and, therefore, may have been counted more than once. Data from Chile and Guatemala may suggest that in some cases there was an overestimation of the treatment gap by the WHO-AIMS. In the Chilean CPPS study (Vicente et al., 2006), a treatment gap of 46% was obtained in contrast to 57% reported in the Chilean WHO-AIMS study; and in the Guatemala national survey, a treatment gap of 85.1% was obtained in comparison to 96.4% in the WHO-AIMS.

IV. SERVICE UTILIZATION AND THE TREATMENT GAP IN THE AMERICAS AMONG CHILDREN AND ADOLESCENTS

A number of studies in the past decade have provided data on the rates of specific mental disorders in children and adolescents and service utilization.

The prevalence of specific psychiatric disorders based on DSM-IV in children and adolescents are available in Brazil - limited to the southern city of Taubaté - (Fleitch-Bilyk et al., 2004), Chile (Vicente et al., 2012), urban regions in Colombia (Torres de Galvis et al., 2012), Mexico City (Benjet et al., 2009), Puerto Rico (Canino et al., 2004), and the United States (Kessler et al., 2012). Table 4.1 provides a summary of those results based on the most currently representative study for each country. All the studies except the one from Brazil have data on mental health services utilization.

In the USA, the National Health and Nutrition Examination Survey (NHANES) was conducted prior to the NCS-A study on a representative sample of children and adolescents age 8 to 15 using the DISC (Merikangas et al., 2010). The NCS-A was then chosen as the representative study due to the methodology being similar to that used in the Mexican and Colombian studies. The results of the NHANES are presented in Table 35 for comparison.

As noted in Table 4.2, information on severity was only available for the Chile, Mexico City, Puerto Rico, and United States studies. The 12-month prevalence of the percent of cases classified as severe ranged from 18.8% in the USA to 58.7% in Chile. It should be noted that criteria for severity differed in each of the studies (see footnote of Table 4.2).

Service utilization data was limited to Chile, Mexico City, Puerto Rico and the United States. School based services were the most common providers of mental health care to children and adolescents in each of these countries (Table 4.3). Data from the USA NCS-A study was limited to lifetime service utilization by severity and for specific disorders (Green et al., 2012; Merikangas et al., 2011), yet 64.7% of all cases and 52.6% of the severe cases had not received any treatment (Table 4.4). The NHANES also provided data on service utilization in the United States. It found that 49.4% of all cases had not received any treatment, including 47.2% of severe cases. In Mexico City 86.3% of all cases did not receive treatment and 80.8% of severe cases (12-month rates). In Chile and Puerto Rico, 66.7% and 60.2% of cases, respectively, did not receive mental health services, and the percentage was 50.4, for both countries with regard to serious cases (12-month rates). The estimated median treatment gap for children and adolescents in the Americas is 65.7% and the median for severe cases, 60.8%.

The treatment gap for children and adolescents appears to vary by diagnostic category (Table 4.5). The median treatment gap in the Americas for anxiety disorders was 82.2%; for affective disorders, 73.9%; impulse control disorders, 62.7%; and substance use disorders, 73.1%. The treatment gap for the United States NHANES study by diagnostic category was lower than that for the United States NCS-A study (anxiety disorders, 67.8% and 66.1%; conduct disorders, 54.6% and 55.8%; ADHD, 52.3% and 51.5%; and mood disorders, 56.2% and 49.3%, with and without impairment). There is insufficient information to fully determine how the treatment gap is impacted by the age of the child and the use of the DISC versus the CIDI-A.

Even less data is available on the adequacy of mental health treatment for children and adolescents. Of those who are treated in Mexico with a disorder, only 60.1% receive minimally adequate treatment (Benjet et al., 2008). For anxiety disorders, this was 60.4%; affective disorders, 67.1%; impulse control disorders, 67.6%; and 77.0% for substance use disorders. Minimally adequate services was defined as: minimally desired psychotherapy, consisting of four or more outpatient visits to any provider; minimally adequate pharmacotherapy, consisting of two or more outpatient clinical visits to any provider and treatment with any medication for any length of time; or reporting still being “in treatment” at the time of the interview. As of the end of 1990’s, Canada noted that despite universal health care and a government policy promoting equity to access in Quebec, the available health resources for children were not distributed across regions according to needs (Blais et al., 2003).

All these studies would suggest that the 65.7% treatment gap median in the Americas for children and adolescents mental health services (Table 4.4) might be markedly underestimated. Firstly, there is no representation of low-income countries among the studies. Secondly, the studies on the inequity of distribution and the adequacy of treatment suggest that the gap is wider than expected.

V. SERVICE UTILIZATION AND TREATMENT GAP OF INDIGENOUS POPULATIONS IN THE AMERICAS

The indigenous population of LAC is estimated to be between 45 to 50 million, or 10.2% of the population. Ninety percent are concentrated in Central America and the Andean subregion. The indigenous populations in the Region are disproportionately poor and socially disadvantaged, have high rates of illiteracy, and are more likely to be unemployed in contrast to the rest of the population. In this population 400 different languages are spoken.

The indigenous people constitute 40% of the rural population of LAC. The countries with the highest indigenous population, 40%-70%, are Bolivia, Ecuador, Guatemala, and Peru. In Belize, Chile, El Salvador, Honduras, Mexico, Nicaragua and Panama the indigenous people account for 5%-20% of the total population (Kohn & Rodriguez, 2009). In Canada it is estimated at 3.8%, whereas in the United States, Native Americans are only 0.8% of the population. They have less access to formal mental health care than the general population.

There are only three psychiatric epidemiological studies in the Region of the Americas that examined the prevalence of mental disorders among indigenous populations using structured diagnostic interview schedules in representative community samples. Each of these studies used the CIDI and examined service utilization. In Chile, 75 members of the Mapuche community living in the province of Cautin were evaluated in a prevalence study of the province (Vicente et al., 2005). The prevalence of mental illness was examined among 409 Mayans in a mental health study in Guatemala (Lopez, submitted). The third study was of two American Indian tribe reservations, a Southwest tribe (N = 1446) and a Northern Plains Tribe (N = 1638) (Beals et al., 2005; Beals et al., 2005). The rates of mental disorders for affective, anxiety and substance use disorders are presented in Table 5.1. The prevalence rates varied widely between the three countries; however, the indigenous population had similar rates of mental illness compared to the non-indigenous population; however, in the United States the rates were higher for substance use disorders than those of the non-indigenous population.

The indigenous population in the Americas has less access to formal mental health care than the general population. The treatment gap in Chile and the United States was higher than that of the non-indigenous population (Table 5.2). For the two indigenous tribes in the United States it was about one-third of those with mental disorders; however, traditional healers provided over 60% of the treatment received by those with mental illness. In Chile, only 7.6% of the Mapuche with a mental illness received any treatment, a treatment gap of 92.4%. Interestingly, none of the Mapuche sought help from traditional healers. As for Guatemala, the indigenous population had a similar treatment gap to the non-indigenous Ladino population, 82.0%. Traditional healers were used by 8.2% of the Mayans with mental illness in this country.

VI. ADDRESSING BARRIERS TO MENTAL HEALTH CARE IN THE AMERICAS

Barriers to mental health care, which increase the treatment gap, are originated both at the governmental and the individual level.

Governmental barriers to care, as described in the Atlas studies and the WHO-AIMS, are mostly due to the governments' failure to have specific legislation to protect the mentally ill and to provide parity to mental illness with other medical conditions; to the small amount of funds allocated to mental health in the health budget; and to the type of health care coverage offered. Furthermore, the structure of the mental health system in the country may also serve as a barrier to care; for example, the weight of mental hospitals in relation to general hospitals with psychiatry beds, and the availability of outpatient services. Deinstitutionalization of large mental hospitals and decentralization of mental health services located mainly in large urban centers remain ongoing issues for many countries resulting in lack of access to services.

There are also barriers to care at the individual level due to attitudes, false beliefs about mental illness, and stigma. The psychiatric epidemiological studies conducted in three countries among adults, - Chile (Saldivia et al., 2004; Vicente et al., 2005), Canada (Wang et al., 2006), and the United States (Mojtabai et al., 2011) -, provide insights into these barriers. In Chile, among those who did not seek care but had a mental illness, 63.8% reported a low perceived need for treatment; this included half of those individuals who had a severe disorder (Table 6.1). The most common reason for not seeking care was the belief that the problem would simply get better without treatment and wanting to handle it on one's own. Even in Chile, with an extensive national mental health system, 41.8% and over half of those with severe disorders still reported financial barriers. Over a fifth also reported lack of knowledge about where to get help, believing treatment was ineffective, and more than a fourth felt they could not trust a mental health professional. A sizable proportion, over 43%, worried about the possible diagnosis. Stigma was reported as a reason not to seek care by 22.9% of those with severe disorders, but only 15.9% with any disorder. Nearly a quarter of the respondents gave the reason not to get help due to its inconvenience.

The Canadian CCHS-1.2 (Wang, 2006) reported that 19.5% of people with a disorder, including those who sought treatment, reported barriers to mental health service use. Role impairment was a significant factor predicting barriers to care. In addition, those with comorbid disorders were more likely to encounter barriers to care than those with one disorder. In examining barriers among users who did not seek treatment and had a diagnosis, 93.3% reported a low perceived need for treatment (Table 6.2). The primary reason given not to seek mental health care was that they wanted to handle the problem on their own (40.5%). One-fifth of the respondents reported that it was inconvenient to get help. Lack of knowledge of where to go for help and stigma were relatively frequent reasons given. Financial barriers were a reason provided by 10.5% of those with a severe disorder.

The barriers to care in the United States also had “wanting to handle the problem on their own” as the most common reason (72.6%) (Table 6.3). Among those with a severe disorder over a quarter endorsed financial burden, belief that treatment was not effective, stigma, and belief that the problem could get better on its own and that the problem was not severe.

To date, only one child and adolescent study on barriers to care using a structured diagnostic interview schedule to obtain diagnosis has available data on the subject. In Chile, the child and adolescent epidemiological survey inquired about barriers to care (Table 6.4) (Vicente et al., 2012). Among those who did not seek help for a disorder, regardless of the severity, 70.8% had a low perceived need; among those with a severe disorder, 48.1% had low perceived need. Among those who perceived a need for treatment but did not seek it out, economic barriers were the primary reason given (76.2%); followed by social reasons, which include stigma and service related issues, such as believing treatment might not help.

These four studies (three among adults and one among children and adolescents) show that individual barriers to care have an important role in explaining the treatment gap. Some of these barriers are based on false beliefs about mental illness, including the view that there is a low perceived need for treatment and wanting to handle the problem on their own, in light of the amount of disability caused by mental illness. Stigma is also an important factor in particular among those with severe mental illnesses.

VII. FINAL REMARKS

It has been over a decade since the WHO first raised the issue of the “treatment gap” in the *WHO World Health Report 2001* (WHO, 2001; Saraceno, 2002). A better knowledge of the extent, available resources, and barriers to bridging the treatment gap has been acquired during this period of time.

Four contributions in particular have increased this knowledge: a better understanding of the burden of illness; the advancements in psychiatric epidemiological methodology in community-based surveys of prevalence and service utilization; a systematic measurement of resources and existing services in mental health through the various WHO Atlases and the WHO-AIMS; and ongoing research that has moved away from examining just urban centers areas to including national samples and low-middle income countries. These advances in public health research in mental health have called for a revision of estimates of the treatment gap in the Americas. They also permitted, for the first time, an initial examination among children and adolescents, as well as among indigenous populations.

The importance of addressing the treatment gap in mental health is highlighted, among others, by its associated disability. The relationship and comorbidity of mental disorders to physical disorders impacting on their treatment, course and outcomes, highlight the actual global view of mental health. Therefore, although we discuss the

treatment gap in terms of psychiatric diagnoses, that is only one piece of the actual gap that needs to be addressed.

The Region of the Americas has historically been at the forefront of psychiatric epidemiology research. A decade ago, the ICPE, using the CIDI, was represented by a national study of adults excluding the elderly, in the United States; an epidemiological study of Ontario, in Canada; a study of a middle class catchment area of São Paulo, in Brazil; an investigation in Mexico City; and by the national survey in Chile (Bijl et al., 2003). These studies, except for the ones in Chile and the United States, were not representative of the national population and were limited to regions with higher access to care. These factors may have considerably underestimated the treatment gap, as the treated prevalence study in Belize (Bonander et al., 2000) at that time highlighted.

Today, we have a series of new studies that have broadened our understanding of prevalence and service utilization. The World Mental Health Survey included nationally representative surveys of the United States (Kessler et al., 2005), and of urban areas of Colombia (Posada-Villa et al., 2004) and Mexico (Medina-Mora et al., 2003), as well as a more representative study of São Paulo, Brazil (Andrade et al., 2012). The first epidemiological study of Central America has also been conducted, and there is also a nationally representative survey of Canada (Lopez et al., submitted; Gravel & Béland, 2005). In the Southern Cone, the Chilean study continues to remain the only representative psychiatric epidemiological survey conducted in this region (Vicente et al., 2006). There remains a need to carry out studies in additional countries in South America, Central America, and a more representative study in Brazil, and to include the Caribbean. However, the newer prevalence and service utilization data has permitted an improved understanding of the treatment gap in the Region of the Americas.

Until recently, there were no nationally representative studies conducted of children and adolescents, and virtually no data on service utilization. Now there are two studies from the United States (Kessler et al., 2012; Merikangas et al., 2010), one from Chile (Vicente et al., 2012), one from Colombia (Torres de Galvis et al., 2012), and one from Puerto Rico (Canino et al., 2004). In addition, there is a study from Mexico City (Benjet et al., 2009). Additionally, the Atlas program and the WHO-AIMS have provided data on child and adolescent mental health resources. An understanding of the extent of the treatment gap for these two age groups has now emerged. However, studies of children lag far behind those of adolescents and are lacking even in North America.

The WHO Atlas program and the WHO-AIMS have given an expanded view of the mental health field resources and services available in the Region. The examination derived from the Atlas and WHO AIMS highlights the disparities, in terms of number and distribution, which continue to exist in mental health services and resources even in high-middle income countries. The Atlas and WHO-AIMS also provided data on national usage of outpatient services, general hospitals with psychiatric beds, and mental hospitals, as well as estimates of service utilization. The WHO-AIMS data in LAC allowed estimation of the treatment gap in schizophrenia. The mental hospital continues to still be the focal point of care in several countries, despite that a lower treatment gap in

schizophrenia is associated with outpatient programs and programs that provide community follow-up.

With more representative data there is a better understanding of how wide the treatment gap in the Americas is. For severe and moderate disorders among adults with affective disorders, anxiety disorders and substance use disorders, the median treatment gap is estimated to be 73.5% for the Americas, 47.2% for North America, and 77.9% for Latin America. For all disorders, regardless of severity, the treatment gap in the Americas is 78.1%. In the United States, the gap for schizophrenia is 42.0%. However, for Latin America and the Caribbean it is 56.4%. There are subregional differences in the treatment gap in LAC. For lower income countries the gap increases to 74.7% compared to 54.1% in higher income countries.

The treatment gap for children and adolescents is based on only four studies and illustrates findings not that different from the adult surveys. The median treatment gap for the Americas is 63.8% and 52.6% for severe disorders. Interestingly, the United States fares no better than Latin American countries in regard to addressing the mental health service needs of its child and adolescent population. The indigenous population has often been neglected in research, but the emerging information on their treatment gap will refocus attention on addressing their psychosocial needs.

The treatment gap not only means the total lack of care but also the delay in diagnosis and initiation of treatment. To bridge the treatment gap, it is still necessary to overcome barriers of access to care. Reducing the treatment gap is only part of bridging the divide, the quality of care provided needs to be monitored and improved, as much of the treatment provided frequently does not meet standards of adequacy.

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APPENDIX

LIST OF TABLES

- Table 1.1** Disease case definitions.
- Table 1.2** Psychiatric epidemiologic prevalence studies of adult mental disorders conducted in the Americas using in person diagnostic interviews.
- Table 1.3** Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Brazil.
- Table 1.4** Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Chile, Colombia, Peru and Puerto Rico.
- Table 1.5** Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Mexico and Guatemala.
- Table 1.6** Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Canada.
- Table 1.7** Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in the United States.
- Table 1.8** Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in the United States examining Hispanic and Afro-Caribbean populations.
- Table 2.1** Child and adolescent psychiatric epidemiological studies using structured diagnostic instruments.
- Table 3.1** 12-month prevalence rate of mental disorders in selected psychiatric epidemiologic prevalence studies in the Americas for affective, anxiety and substance use disorders and by severity of disorder.
- Table 3.2** 12-month and lifetime prevalence rate of specific mental disorders in selected psychiatric epidemiologic prevalence studies in the Americas.
- Table 3.3** 12-month estimated prevalence rate of mental disorders in the Americas, North America, and Latin America for affective, anxiety and substance use disorders and by severity of disorder.
- Table 3.4** 12-month and lifetime estimated prevalence rate of specific mental disorders in the Americas, North America, and Latin America.
- Table 3.5** Service utilization for any disorder by severity and type of service provider, and treatment gap (no treatment).
- Table 3.6** Service utilization by specific disorder.
- Table 3.7** 12-month prevalence rate of service utilization in selected psychiatric epidemiologic prevalence studies in the Americas for affective, anxiety and substance use disorders.
- Table 3.8** Treatment gap by specific disorder.
- Table 3.9** Days out of role per year (mean) by severity of disorder.

- Table 3.10** Percent of individuals with a disorder that have contact with treatment in the first year of being diagnosed and the median delay in years for seeking treatment.
- Table 3.11** Treatment gap estimates in the Americas for 12-month prevalent disorders, by severity.
- Table 3.12** Treatment gap estimates in the Americas for 12-month prevalent affective, anxiety and substance use disorders.
- Table 3.13** Comparison of current study treatment gap in the Americas and Latin America with historical treatment gap studies.
- Table 3.14** Treatment gap for schizophrenia and service utilization in Latin America and the Caribbean, by country.
- Table 3.15** Treatment gap for schizophrenia in Latin America and the Caribbean, by subregion.
- Table 4.1** Prevalence of child and adolescent mental disorders in selected countries of the Americas.
- Table 4.2** 12-month prevalence rate of mental disorders in children and adolescents in selected psychiatric epidemiologic prevalence studies in the Americas for affective, anxiety and substance use disorders and by severity of disorder.
- Table 4.3** Service utilization for children and adolescents by any disorder, by severity and type of service provider, and treatment gap (no treatment).
- Table 4.4** Treatment gap estimates for the Americas for child and adolescent 12-month prevalent mental disorders.
- Table 4.5** Treatment gap by specific child and adolescent mental disorder in the Americas.
- Table 5.1** Prevalence of 12-month mental disorders in adult indigenous population.
- Table 5.2** Service utilization among indigenous people with a mental disorder by type of service provider, and treatment gap (no treatment).
- Table 6.1** Barriers to care among adults in Chile.
- Table 6.2** Barriers to care among adults in Canada.
- Table 6.3** Barriers to care among adults in the United States NCS-R.
- Table 6.4** Barriers to care among children and adolescents in Chile who did not receive treatment.

Table 1.1. Disease case definitions.

Disorders	ICD-10 Codes
Mental and behavioral disorders	F04-F98, X45
Affective disorders	F30-F39
Major depressive disorder	F32-F33
Dysthymia	F34.1
Bipolar affective disorder (mania disorder)	F30-F31
Schizophrenia (non-affective psychosis)	F20-F29
Substance use disorders	F10-F19
Alcohol use disorders	F10, X45
Drug use disorders	F11-F16, F18-F19
Tobacco dependence	F17
Anxiety disorders	F40-F44
Agoraphobia	F40.0
Social phobia	F40.1
Specific phobia	F40.2
Panic disorder	F41.0
Generalized anxiety disorder	F41.1
Obsessive-compulsive disorder	F42
Post-traumatic stress disorder	43.1
Eating disorders	F50
Separation anxiety disorder	F93 (child adolescent under affective disorders)
Child adolescent impulse control disorders	
Attention-deficit hyperactivity disorder	F90
Oppositional defiant disorder	F91.3
Conduct disorders	F91-F92

Table 1.2. Psychiatric epidemiologic prevalence studies of adult mental disorders conducted in the Americas using in person diagnostic interviews.

Study	References	Field Dates	Sample Size	Age	Instrument	Diagnosis
ARGENTINA						
Buenos Aires	Larraya 1982	1979	3,410	17+	PSE	CATEGO/ICD-9
	Household sample stratified by districts. This was a series of small community-based surveys stratified by districts in the geographical area around Buenos Aires. They found an exceptionally high point prevalence rate for schizophrenia of 3.0%; affective psychosis, 4.0%; paranoia, 0.2%; neurotic depression, 3.5%; and neurotic disorders, 14.5%.					
BRAZIL						
Multicentric	Almeida Filho 1992	1991	6,476	15+	QMPA/DSM	DSM-III
	Individual studies were conducted in three major urban areas: Brasilia, São Paulo and Porto Alegre. A two-stage cross-sectional design was used. The first stage was a screening interview using the QMPA, which each family member above the age of 14 completed. The second stage consisted of a structured diagnostic interview developed by the Brazilian team, based on DSM-III and conducted with 30% of the screened positives and 10% of the screened negatives.					
São Paulo-Catchment Area	Andrade 1999, 2003	1994-1996	1,464	18+	CIDI 1.1	DSM-III-R
	Stratified probability sample of a middle and upper socioeconomic class catchment area of the University of São Paulo Medical Center. Ages 18-24 and > 59 were oversampled.					
BambuÍ	Vocaro 2001	1996-1997	1,041	18+	CIDI	DSM-III-R
	Household probability sample of all inhabitants in a town in the state of Minas Gerais. Examined social phobia and depression only, excluding bipolar disorder.					
WMH-São Paulo	Andrade 2012	1996-1997	5,037	18+	WMH-CIDI	DSM-III-R
	Stratified, multistage area probability sample of households in the São Paulo metropolitan area. One respondent in household was selected through a Kish table.					

Study	References	Field Dates	Sample Size	Age	Instrument	Diagnosis
CANADA						
Edmonton	Bland 1988	1983-1986	3,258	18+	DIS	DSM-III
	Multistage sample from population of Edmonton.					
Stirling County	Murphy 2000	1992	1,396	18+	DIS	DSM-III
	Random selection from the census. 40 year longitudinal prospective study with had three waves of representative cross-sectional surveys beginning in 1952, 1970 and 1992. Only rates for major depression were published using the DIS. The lifetime prevalence for males 7.3%; females 11.5%; and total 7.9%. The current prevalence for males 4.2%; females 7.1%; and total 5.7%.%.					
Ontario	Offord 1996, Sareen 2001	1990-1991	6,902	15-64	UM-CIDI	DSM-III-R
	Multistage stratified area probability sample of households. The mental health supplement is a subsample of the Ontario Health Survey.					
NPHS	Patten 1998	1994	17,626	12+	CIDI-SF	DSM-III-R
	National probability sample of households from the Canadian National Population Health Survey (NPHS). 12-month prevalence rates for major depression were estimated: males 3.7%; females 7.4%; and total 5.6%.					
CCHS 1.1	Cairney 2010	2000-2001	31,535	12+	CIDI-SF	DSM-III-R
	The Canadian Community Health Survey (CCHS) 1.1 was a national probability sample of households covering 136 health regions across the country. 12-month prevalence rates for major depression were estimated: males 5.2%; females 9.5%; and total 7.4%.					
CCHS 1.2	Gravel 2005	2002	38,492	15+	WMH-CIDI	DSM-IV
	The CCHS 1.2 was a multistage random probability sample of persons living in private dwellings. It excluded those living in the 3 territories, on Indian reservations and Crown lands, those in some remote areas, those in the armed forces, and institutionalized individuals.					

Study	References	Field Dates	Sample Size	Age	Instrument	Diagnosis
CHILE						
Santiago	Araya 2001	1996-1998	3,870	16-64	CIS-R	ICD-10
	Probability sample of the population of Santiago.					
EPPC	Vicente 2006	1992-1999	2,978	15+	CIDI	DSM-III-R
	The Chilean Psychiatric Prevalence Study was a stratified sample of household residents drawn from four provinces representing geographically distinct regions of the country: Santiago, Concepcion, Iquique and Cautin. Individuals were chosen randomly from selected households based on Kish tables.					
COLOMBIA						
Colombia	Torres de Galvis 1997	1997	15,048	12+	CIDI 2.0	DSM-IV
	Multistage national household sample.					
Depression	Gómez-Restrepo 2004	2000-2001	6,610	18+	CIDI 2.1	ICD-10
	Multistage national household sample. Study focused on the prevalence of depression.					
WMH-Colombia	Posada-Villa 2004	2003	4,544	18-65	WMH-CIDI	DSM-IV
	Multistage stratified national household sample of urban areas.					
GUATEMALA						
	López (entregada)	2009	1,037	18-65	CIDI 2.1	DSM-IV
	Multistage stratified national household sample.					
MEXICO						
PSE	Caraveo-Anduaga 1996	1988	1,984	18-64	PSE	ICD-9
	Sample of urban areas, using the PSE/CATEGO, with some supplemental questions from other surveys.					

Study	References	Field Dates	Sample Size	Age	Instrument	Diagnosis
MEXICO						
Mexico City	Caraveo-Anduaga 1999	1995	1,937	18-64	CIDI 1.1	DSM-III-R
	Multistage sample of households in 16 political divisions of Mexico City.					
Rural	Salgado de Snyder 1999	1996-1997	945	15-89	CIDI 1.1	ICD-10
	Stratified multistage design sample of 33 communities in two Mexican states.					
Four City	Norris 2003	1999-2001	2,509	18+	CIDI 2.1	DSM-IV
	Multistage probability sample in Oaxaca, Guadalajara, Hermosillo, and Mérida. One person selected from randomly selected households in randomly selected census tracts.					
WMH-Mexico	Medina-Mora 2005	2001-2002	5,826	15-65	WMH-CIDI	DSM-IV
	Multistage stratified national household sample of urban areas.					
PERU						
Lima	Minobe 1990	1983	815	18+	DIS	DSM-III
	Multistage sample of Independencia, which is a poor northern district of Lima.					
PUERTO RICO						
Puerto Rico	Canino 1987	1984	1,513	18-64	DIS	DSM-III
	Multistage sample of households in Puerto Rico. The sample included 17-year-olds in some reports.					
UNITED STATES						
ECA	Robins 1991	1980-1984	17,803	18+	DIS	DSM-III
NCS	Kessler 1994	1990-1992	8,098	15-54	UM-CIDI	DSM-III-R
	Multistage stratified probability area sample of the non-institutionalized population of the 48 coterminous states. A supplemental sample of students living in campus group housing was obtained.					

Study	References	Field Dates	Sample Size	Age	Instrument	Diagnosis
UNITED STATES						
MAPPS	Vega 1998	1996	3,012	18-59	CIDI	DSM-III
	Stratified, multistage cluster design sample of the non-institutionalized population of the Fresno-Clovis Metropolitan Area in California. Limited to those of Mexican origin.					
NLAES	Grant 1995	1991-1992	42,862	18+	AUDADIS-IV	DSM-IV
NESARC	Hasin 2005	2001-2002	43,000	18+	AUDADIS-IV	DSM-IV
	Representative sample of the national population using a housing unit and group quarters sampling frame. Hospitals, jails, and prisons were not among the group quarters sampled. Blacks, Hispanics, and young adults were oversampled.					
NCS-R	Kessler 2005	2001-2003	9,282	18+	WHO-CIDI	DSM-IV
	Multistage stratified probability area sample of the non-institutionalized population of the 48 coterminous states.					
VENEZUELA						
Trujillo	Baptista 1999	N/A	599	N/A	DIS	DSM-III
	Residents from 4 communities in rural Trujillo. Lifetime prevalence: alcohol abuse/dependence 22.4%, major depression 2%; mania 1.8%; non-affective psychosis 1.1%.					

Notes: Studies mentioned in the table → Brazilian Multicentric Study of Psychiatric Morbidity; Chilean Psychiatric Prevalence Study (CPPS, for its acronym in Spanish); Canadian National Population Health Survey (NPHS); Canadian Community Health Survey (CCHS); Epidemiological Catchment Area Study (ECA); National Comorbidity Study (NCS); National Comorbidity Study Replication (NCS-R); National Longitudinal Alcohol Epidemiologic Survey (NLAES); National Epidemiologic Survey on Alcohol and Related Conditions (NESARC); Mexican American Prevalence and Services Survey (MAPSS); National Latino and Asian American Study (NLAAS); National Survey of American Life (NSAL). **Instruments mentioned in the table** → PSE = Present State Exam (Wing et al., 1977); QMPA = Questionário de Morbidade Psiquiátrica do Adulto (Andreoli et al., 1994); CIDI = Composite International Diagnostic Interview (Robins et al., 1998); CIDI-SF = Composite International Diagnostic Interview Short Form (Kessler et al., 2003); CIS-R = Clinical Interview Schedule-Revised (Lewis & Pelosi, 1990); DIS = Diagnostic Interview Schedule (Robins et al., 1981); AUDADIS-IV = Alcohol Use Disorder and Associated Disabilities Interview Schedule–DSM-IV Version (Grant et al., 2003); UM-CIDI = University of Michigan Composite International Diagnostic Interview (Kessler et al., 1999); WMH-CIDI = World Mental Health Composite International Diagnostic Interview (Kessler et al., 2006).

Table 1.3. Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Brazil.

Disorder	Multicentric Brasilia			Multicentric São Paulo			Multicentric Porto Alegre			São Paulo Catchment Area			BambuÍ			WMH São Paulo		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Lifetime Prevalence																		
Non-affective psychosis	0	0.5	0.3	0	1.2	0.9	2.4	2.5	2.4	1.7	2.0	2.1						
Major depression	1.9	3.8	2.8	0	3.8	1.9	5.9	14.5	10.2	13.2	19.1	16.6	7.3	17.0	12.8	10.0	23.0	16.9
Dysthymia										3.7	4.7	4.3				0.9	2.2	1.6
Mania disorder	0.9	0	0.4	0	0.6	0.3	1.7	0.5	1.1	1.1	0.9	1.0				2.2	2.1	2.1
Generalized anxiety	13.6	21.6	17.6	7.3	13.9	10.6	5.2	14.0	9.6	3.3	4.9	4.2				2.6	4.6	3.7
Panic disorder										0.7	2.3	1.6				0.9	2.5	1.7
Agoraphobia										0.8	3.0	2.1				1.3	3.6	2.5
Post-traumatic stress disorder																1.6	4.6	3.2
Social phobia										2.6	4.1	3.5	10.0	13.0	11.8	4.2	6.7	5.6
Obsessive-compulsive	0.9	0.5	0.7	0	0	0	1.7	2.5	2.1	0.4	0.2	0.3				5.8	7.6	6.7
Alcohol abuse/dependence	15.0	1.1	8.0	15.2	0	7.6	16.0	2.5	9.2	7.8	3.8	5.0				22.2	5.0	13.1
Drug abuse/dependence										1.9	0.6	1.0				6.4	2.4	4.3
12-Month Prevalence																		
Non-affective psychosis	0	0.5	0.3	0	1.2	0.9	2.4	2.5	2.4	0.7	0.9	0.8						
Major depression	1.9	3.8	2.8	0	3.8	1.9	5.9	14.5	10.2	3.5	9.1	6.7	5.1	12.2	9.1			9.4
Dysthymia										1.1	1.7	1.4						1.3
Mania disorder	0.9	0	0.4	0	0.6	0.3	1.7	0.5	1.1	0.3	0.6	0.5						1.5
Generalized anxiety	13.6	21.6	17.6	7.3	13.9	10.6	5.2	14.0	9.6	1.1	2.1	1.7						2.3
Panic disorder										0.1	1.7	1.0						1.1
Agoraphobia										0.4	1.7	1.2						1.6
Post-traumatic stress disorder										1.5	2.7	2.2	7.6	10.2	9.1			1.6
Social phobia																		3.9
Obsessive-compulsive	0.9	0.5	0.7	0	0	0	1.7	2.5	2.1	0.3	0.1	0.2						3.9
Alcohol abuse/dependence	15.0	1.1	8.0	15.2	0	7.6	16.0	2.5	9.2	6.5	3.0	3.9						4.0
Drug abuse/dependence										1.1	0.2	0.6						1.1

Note: M = male; F = female; T = total. WMH: World Mental Health Survey, sponsored by the World Health Organization (WHO).

Table 1.4. Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Chile, Colombia, Peru and Puerto Rico.

Disorder	Chile Santiago			Chile CPPS			Colombia 1997			Colombia WMH			Peru			Puerto Rico ^b		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Lifetime Prevalence																		
Non-affective psychosis				1.6	1.9	1.8	1.3	1.4	1.4				0.3	1.0	0.6	2.2	1.4	1.8
Major depression				6.8	11.5	9.2	18.3	20.7	19.6	8.6	14.9	12.0	6.1	13.5	9.7	3.5	5.5	4.6
Dysthymia				3.5	12.1	1.9				0.6	0.7	0.8	1.0	5.9	3.4	1.6	7.6	4.7
Mania disorder				1.5	2.2	8.0	1.9	1.6	1.7	2.2	1.7	2.6	0.7	1.0	0.9	0.7	0.4	0.5
Generalized anxiety				0.9	4.1	2.6	2.6	3.5	3.1	1.5	1.2	1.3						
Panic disorder				0.7	2.5	1.6	0.3	0.2	0.3	0.6	1.7	1.2	1.2	2.9	2.1	1.6	1.9	1.7
Agoraphobia				6.0	15.9	11.1				1.5	3.3	2.5				4.9	8.7	6.9
Post-traumatic stress disorder				2.5	6.2	4.4	6.8	1.9	4.3	0.8	2.5	1.8						
Social phobia				7.2	12.8	10.2				5.1	5.1	5.0				1.5	1.6	1.6
Obsessive-compulsive				0.7	1.6	1.2	3.3	3.9	3.6				2.0	2.9	2.5	3.3	3.1	3.2
Alcohol abuse/dependence				17.2	3.3	10.0	25.8	7.8	16.6		1.9	9.2	34.8	2.5	18.6	24.6	2.0	12.6
Drug abuse/dependence				3.4	3.5	3.5					0.3	1.6	2.2	0.7	1.5			
12-Month Prevalence																		
Non-affective psychosis				0.2	1.1	0.7	0.5	0.6	0.6							2.1	1.3	1.7
Major depression	2.7	8.0	5.5	3.7	7.5	5.7	0.7	3.0	1.9	3.5	7.3	5.3				2.4	3.3	3.0
Dysthymia				1.6	5.9	3.9				0.5	0.5	0.6						
Mania disorder				0.7	2.1	1.4				0.8	1.0	1.5				0.3	0.3	0.3
Generalized anxiety	3.2	6.9	5.1	0.7	2.4	1.6	1.7	0.9	1.3	0.9	0.5	0.6						
Panic disorder	1.1	1.5	1.3	0.5	1.2	0.9	0.2	0.1	0.1	0.3	0.9	0.7				1.2	0.9	1.1
Agoraphobia				1.9	10.4	6.3				1.3	1.7	1.5				2.4	5.4	3.9
Post-traumatic stress disorder				1.1	3.6	2.4	5.9	1.2	3.5	0.1	0.7	0.6						
Social phobia				2.5	9.7	6.4				2.1	2.8	2.8				1.1	1.1	1.1
Obsessive-compulsive	1.4	1.1	1.3	0.7	1.6	1.2	2.4	3.8	3.1							1.3	2.3	1.8
Alcohol abuse/dependence				12.1	2.2	7.0	5.1	4.3	4.7	4.6	0.4	3.3				10.0	0.5	4.9
Drug abuse/dependence				1.7	2.1	1.8				0.9	0.2	0.7						

Notes: M = male; F = female; T = total. CPPS: Chilean Psychiatric Prevalence Study; WMH: World Mental Health Survey, sponsored by the World Health Organization (WHO); Puerto Rico 6-month prevalence not 12-month.

Table 1.5. Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Mexico and Guatemala.

Disorder	PSE Mexico			Mexico City CIDI			Mexico Rural			Mexico 4 City			Mexico WMH			Guatemala		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Lifetime Prevalence																		
Non-affective psychosis																2.6	2.2	2.4
Major depression				5.5	10.1	8.1	2.9	9.1	6.2	9.0	15.9	12.8	4.6	9.7	7.2	2.0	4.2	3.2
Dysthymia				0.9	1.8	1.4	1.4	5.2	3.4				0.3	1.0	0.6	0.1	1.4	0.8
Mania disorder				2.1	0.9	1.4	2.1	1.6	2.1				2.4	1.5	1.9	0.7	0.3	0.5
Generalized anxiety				0.9	0.8	1.0							0.5	1.3	0.9	0.1	0.2	0.1
Panic disorder				2.1	3.8	2.9							0.6	1.4	1.0	0.3	0.1	0.2
Agoraphobia													0.3	1.6	1.0	1.0	3.1	2.1
Post-traumatic stress disorder													0.5	2.3	1.5	0.8	2.7	1.8
Social phobia													2.2	3.6	2.9	1.1	1.0	1.0
Obsessive-compulsive				1.4	0.8	1.7										0.5	0.6	0.7
Alcohol abuse/dependence				19.4	1.3	9.1							20.7	2.0	11.0	17.3	0.8	8.6
Drug abuse/dependence						0.7							3.5	0.3	1.9	0.2	0.1	0.2
12-Month Prevalence																		
Non-affective psychosis	0.7	0.7	0.7													0.9	1.0	1.0
Major depression	2.2	3.9	3.2	3.1	5.6	4.4				4.3	7.6	6.1	2.3	4.7	3.7	0.4	1.2	0.8
Dysthymia				0.3	0.4	0.3							0.2	0.6	0.4	0.03	0.5	0.3
Mania disorder	0.4	0.6	0.5	1.3	0.3	0.7							1.0	1.3	1.1	0.7	0.3	0.1
Generalized anxiety				0.7	0.4	0.6							0.3	0.6	0.4	--	0.1	0.03
Panic disorder				0.8	1.9	1.6							0.3	1.1	0.6	--	--	--
Agoraphobia													0.2	1.2	0.7	0.4	1.4	1.0
Post-traumatic stress disorder													0.4	0.7	0.6	0.2	0.5	0.4
Social phobia													1.4	2.6	1.7	0.4	0.4	0.4
Obsessive-compulsive	1.3	4.3	3.0	0.7	1.2	1.0										0.3	0.6	0.4
Alcohol abuse/dependence				10.9	2.2	5.6							6.3	0.4	2.2	6.1	0.3	3.0
Drug abuse/dependence													0.9	0.0	0.6	--	--	--

Notes: M = male; F = female; T = total. WMH: World Mental Health Survey, sponsored by the World Health Organization (WHO); PSE Mexico is current prevalence not 12-month prevalence; -- no cases.

Table 1.6. Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in Canada.

Disorder	Edmonton			Ontario			CCHS		
	M	F	T	M	F	T	M	F	T
Lifetime prevalence									
Non-affective psychosis	0.5	0.6	0.6						
Major depression	5.9	11.4	8.6			8.3	9.2	15.1	12.2
Dysthymia	2.2	5.2	3.7						
Mania disorder	0.7	0.4	0.6				2.2	2.1	2.2
Generalized anxiety				0.9	1.2	1.1			
Panic disorder	0.8	1.7	1.2				2.8	4.6	3.7
Agoraphobia	1.5	4.3	2.9			3.2	0.8	2.2	1.5
Post-traumatic stress disorder									
Social phobia	1.4	2.0	1.7			13.0	7.5	8.7	8.1
Obsessive-compulsive	2.8	3.1	3.0						
Alcohol abuse/dependence	29.3	6.7	18.0	19.2	4.8	12.0			
Drug abuse/dependence	10.6	3.2	6.9						
Disorder	Edmonton			Ontario			CCHS		
	M	F	T	M	F	T	M	F	T
12-Month prevalence									
Non-affective psychosis			0.4						
Major depression	3.4	5.9	4.6	2.8	5.4	4.1	3.7	5.9	4.8
Dysthymia	2.2	5.2	3.7	0	0.8	0.8			
Mania disorder	0.2	0.1	0.1	0	0.6	0.6	1.0	1.0	1.0
Generalized anxiety				0.9	1.2	1.1			
Panic disorder	0.4	1.0	0.7	0	1.5	1.1	1.0	2.0	1.5
Agoraphobia				0.7	2.5	1.6	0.4	1.1	0.7
Post-traumatic stress disorder									
Social phobia				5.4	7.9	6.7	2.6	3.4	3.0
Obsessive-compulsive	1.6	1.6	1.6						
Alcohol abuse/dependence	13.5	2.4	7.9	7.1	1.8	4.4	14.4	3.7	9.5
Drug abuse/dependence	4.3	0.9	2.6	1.7	0.4	1.1	4.3	1.8	3.0

Notes: M = male; F = female; T = total. CCHS = Canadian Community Health Survey. For panic disorder and obsessive compulsive disorder in Edmonton, the rates are for six-month not 12-month prevalence.

Table 1.7. Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in the United States.

Disorder	ECA			NCS			NLAES			NESARC			NCS-R		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Lifetime prevalence															
Non-affective psychosis	1.2	1.7	1.5	0.6	0.8	0.7									3.1
Major depression	2.6	7.0	4.9	12.7	21.3	17.9	8.6	11.0	9.9	9.0	17.1	13.2	13.2	20.2	16.9
Dysthymia	2.2	4.1	3.2	4.8	8.0	6.4							1.8	3.1	2.5
Mania disorder	1.1	1.4	1.3	1.6	1.7	1.6							4.3	4.5	4.4
Generalized anxiety				3.6	6.6	5.1							4.2	7.1	5.7
Panic disorder	1.0	2.1	1.6	2.0	5.0	3.5							3.1	6.2	4.7
Agoraphobia				3.5	7.0	5.3							1.1	1.6	1.3
Post-traumatic stress disorder										4.1	8.6	6.4	3.6	9.7	6.8
Social phobia				11.1	15.5	13.3							11.1	13.0	12.1
Obsessive-compulsive	2.0	3.0	2.6										1.6	3.1	2.3
Alcohol abuse/dependence	23.8	4.6	13.8	32.6	14.6	23.5	25.5	11.4	18.2	42.0	19.5	30.3	13.2	7.5	13.2
Drug abuse/dependence	7.7	4.8	6.2	14.6	8.4	11.9	8.1	4.2	6.1	13.8	7.1	10.3	8.0	4.8	8.0
12-month prevalence															
Non-affective psychosis	0.9	1.1	1.0	0.5	0.5	0.6									1.4
Major depression	1.4	4.0	2.7	7.7	12.9	10.3	2.7	3.9	3.3	4.9	9.1	7.1	4.9	8.6	6.8
Dysthymia				2.1	3.0	2.5				1.2	2.4	1.8	1.0	1.9	1.5
Mania disorder	0.9	1.1	1.0	1.4	1.3	1.3				2.8	2.9	2.8	2.9	2.8	2.6
Generalized anxiety	2.4	5.0	3.8	2.0	4.3	3.1				1.3	2.8	2.1	1.9	3.4	2.7
Panic disorder	0.6	1.2	0.9	1.3	3.2	2.3				1.3	2.9	2.2	1.6	3.8	2.7
Agoraphobia			1.7	3.8	2.8								0.8	0.9	0.9
Post-traumatic stress disorder													1.8	5.2	3.6
Social phobia			6.6	9.1	7.9					2.1	3.3	2.8	5.8	8.0	7.1
Obsessive-compulsive	1.4	1.9	1.7										0.5	1.8	1.2
Alcohol abuse/dependence	11.9	2.2	6.8	32.6	14.6	23.5	11.0	4.1	7.4	12.4	8.5	4.9	4.5	1.8	3.1
Drug abuse/dependence	4.1	1.4	2.7	14.6	8.4	11.9	1.8	1.5	0.5	2.8	1.2	2.0	2.2	0.7	1.4

Note: M = male; F = female; T = total.

Table 1.8. Rates in adult psychiatric epidemiologic prevalence studies of mental disorders conducted in the United States examining Hispanics and Afro-Caribbean populations.

Disorder	MAPSS			NCS	NCS-R	NESARC	NLAAS	NSAL
	M	F	T	T	T	T	T	T
Lifetime Prevalence								
Non-affective psychosis								
Major depression	6.1	12.3	9.0	18.3	13.5	7.7	15.2	12.9
Dysthymia	3.1	3.7	3.3	8.6	2.2	1.7	2.6	
Mania disorder	2.4	0.9	1.7	0.5	4.3	3.5		
Generalized anxiety				6.2	4.8	1.5	4.1	
Panic disorder	1.3	2.3	1.7	1.8	5.4	1.3	2.8	
Agoraphobia	5.6	10.1	7.8	6.8	2.7		3.2	
Post-traumatic stress disorder					5.9		4.4	
Social phobia	6.1	8.8	7.4	19.0	8.8	2.1	7.5	
Obsessive-compulsive					1.2			
Alcohol abuse/dependence	17.3	6.7	14.4	20.8	15.0	15.3	10.2	12.5
Drug abuse/dependence	11.3	5.5	8.6	10.3	9.1	1.7	5.6	8.7
	M	F	T	T	T	T	T	T
12-Month Prevalence								
Non-affective psychosis								
Major depression	3.9	8.8	6.2	14.5				7.2
Dysthymia	0.3	1.3	0.8	3.1				
Mania disorder	1.4	0.5	1.0	0.6				
Generalized anxiety								
Panic disorder	0.5	1.4	0.9	0.8				
Agoraphobia	2.6	4.7	3.6	.4				
Post-traumatic stress disorder								
Social phobia	3.9	5.2	4.5	7.8				
Obsessive-compulsive								
Alcohol abuse/dependence	9.3	2.7	6.2	9.9				
Drug abuse/dependence	3.5	1.3	2.5	3.0				

Notes: M = male; F = female; T = total; MAPSS and NESARC = Mexican-Americans; NCS, NCS-R, NLAAS = Hispanic-Americans; NSAL = Black Caribbean.

Table 2.1. Child and adolescent psychiatric epidemiological studies using structured diagnostic instruments.

Author/Location	Sample	Methods	Impairment Criteria	Total Prevalence
DAWBA				
Fleitlich-Bilyk, 2004 Taubate, Brazil	N = 1251, school Age: 7-14	Informants: parents, teachers, child	Significant distress or impairment	DSM-IV 12.7%
Goodman, 2005 Ilha de Mare, Brazil	N = 100 from 848, school Age: 7-14	2 phase screening using SDQ Informants: parent, teacher, child	Significant distress or impairment	DSM-IV 7.0%
Anselmi, 2010 Pelotas, Brazil	N = 265 from 4448, birth cohort Age: 11-12	2 phase screening using SDQ Informants: parent, child	Significant distress or impairment	DSM-IV 10.8%
CAPA				
Angold, 2002 North Carolina, USA	N = 1302 from 3613, community Age: 9-17	2 phase screening using CBCL, substance use items Informants: parent, child	CAPA impairment	DSM-IV 21.1%
Costello, 2003 North Carolina, USA	N = 920 from 4067, community longitudinal, Age: 9-16	2 phase screening using CBCL Informants: parent, child	CAPA impairment	DSM-IV 13.3% Impairment 6.8%
DISC				
Bird 1988 Puerto Rico	N = 386 from 777 Age: 4-16	2 phase screening using CBCL Informants: parent, child	DISC, C-GAS	DSM 49.5% C-GAS 15.8%
Shaffer 1996 Atlanta, New York City, New Haven, Puerto Rico, USA	N = 1285, community Age: 9-17	Informants: parent, child	DISC, C-GAS	DSM-III-R 50.6% C-GAS 24.7%

Author/Location	Sample	Methods	Impairment Criteria	Total Prevalence
DISC				
Brenton, 1999 Quebec, Canada	N = 2400, community Age: 6-14	Informants: parent, child	None	DSM-III-R 32.4%
Canino, 2004 Puerto Rico	N = 1886, community Age: 4-17	Informants: parent, child	Criteria A from DISC, C-GAS	DSM-IV 19.8% Criteria A 16.4% C-GAS 6.9%
Roberts, 2006 Houston, TX, USA	N = 4175, HMO enrollees Age: 11-17	Informant: child	Criteria A from DISC, C-GAS	DSM-IV 17.1% Criteria D 11% C-GAS 5.3%
Carter, 2010 New Haven, CT, USA	N = 567 from 1078, birth cohort Age: ~5 or 6	2 phase screening using CBCL, IT-SEA Informant: parent	Criteria A from DISC	DSM-IV 32% Criteria A 21.6%
Merikangas, 2009 USA	N = 3042, community Age: 8-15	Informants: parent (telephone), child	Criteria D from DISC	DSM-IV 13.1% Criteria D 11.3%
Vicente 2012 Chile	N = 1558, community Age: 4-18	Informant: parent ages 4-11 child ages 12-18	Criteria D from DISC	DSM-IV 38.3% Criteria D 22.5%
CIDI-A				
Torres de Galvis 2010 Colombia urban	N = 1520, community Age: 13-17	Informant: child	None	DSM-IV 17.6%
Benjet, 2009 Mexico City, Mexico	N = 3005, community Age: 12-17	Informant: child	Sheehan Disability Scale, WMH Severity	DSM-IV 39.4% Moderate 28.9% Serious 8.5%
Kessler, 2012 USA	N = 10,123, community and schools; Age: 13-18	Informant child	DSM-IV, C-GAS	DSM-IV 42.6% Severe 8.0%

Notes: Prevalence period is 12-months or less (Costello 2003 is based on 3-month prevalence not cumulative); ~ Age approximated based on school grade; C-GAS = Children's Global Assessment Scale; CBCL = Child Behavior Checklist; IT-SEA Infant-Toddler Social and Emotional Assessment; SDQ = Strengths and Difficulties Questionnaire; WMH Severity = World Mental Health definition of severity; Child and Adolescent Psychiatric Assessment (CAPA); HMO = health maintenance organization.

Table 3.1. 12-month prevalence rate of mental disorders in selected psychiatric epidemiologic prevalence studies in the Americas for affective, anxiety and substance use disorders and by severity of disorder.

Disorder	Brazil	Canada	Chile	Colombia	Guatemala	Mexico	USA
Anxiety	19.9	4.7	9.3	14.4	2.1	8.4	19.0
Affective	11.0	5.2	9.9	7.0	1.4	4.7	9.7
Substance	3.6	11.0	10.4	2.8	3.0	2.3	3.8
Any	29.6	18.7	17.0	21.0	7.2	13.4	27.0
Mild	33.1	44.3	18.9	35.9	57.2	40.5	35.7
Moderate	33.0	32.4	40.3	41.0	15.2	33.9	39.2
Severe	33.9	23.3	40.8	23.1	27.6	25.7	25.2

Note: Results are in percentiles.

Table 3.2. 12-month and lifetime prevalence rate of specific mental disorders in selected psychiatric epidemiologic prevalence studies in the Americas.

Disorder	Brazil	Canada	Chile	Colombia	Guatemala	Mexico	USA
Lifetime Prevalence							
Non-affective psychosis			1.8		2.4		3.1
Major depression	16.9	12.2	9.2	12	3.2	7.2	16.9
Dysthymia	1.6		1.9	0.8	0.8	0.6	2.5
Mania disorder	2.1	2.2	8	2.6	0.5	1.9	4.4
Generalized anxiety	3.7		2.6	1.3	0.1	0.9	5.7
Panic disorder	1.7	3.7	1.6	1.2	0.2	1	4.7
Agoraphobia	2.5	1.5	11.1	2.5	2.1	1	1.3
Post-traumatic stress disorder	3.2		4.4	1.8	1.8	1.5	6.8
Social phobia	5.6	8.1	10.2	5	1	2.9	12.1
Obsessive-compulsive	6.7		1.2		0.7		2.3
Alcohol abuse/dependence	13.1		10	9.2	8.6	11	13.2
Drug abuse/dependence	4.3		3.5	1.6	0.2	1.9	8
12-Month Prevalence							
Non-affective psychosis			0.7		1		1.4
Major depression	9.4	4.8	5.7	5.3	0.8	3.7	6.8
Dysthymia	1.3		3.9	0.6	0.3	0.4	1.5
Mania disorder	1.5	1	1.4	1.5	0.1	1.1	2.6
Generalized anxiety	2.3		1.6	0.6	0.03	0.4	2.7
Panic disorder	1.1	1.5	0.9	0.7		0.6	2.7
Agoraphobia	1.6	0.7	6.3	1.5	1	0.7	0.9
Post-traumatic stress disorder	1.6		2.4	0.6	0.4	0.6	3.6
Social phobia	3.9	3	6.4	2.8	0.4	1.7	7.1
Obsessive-compulsive	3.9		1.2		0.4		1.2
Alcohol abuse/dependence	4	9.5	7	3.3	3	2.2	3.1
Drug abuse/dependence	1.1	3	1.8	0.7		0.6	1.4

Note: Results are in percentiles.

Table 3.3. 12-month estimated prevalence rate of mental disorders in the Americas, North America, and Latin America for affective, anxiety and substance use disorders and by severity of disorder.

Disorder	Americas			Latin America			North America
	Median	Mean	Weighted	Median	Mean	Weighted	Weighted
Anxiety	11.1	9.3	16.1	10.8	9.3	14.6	17.5
Affective	7.0	7.0	8.7	6.8	7.0	8.2	9.2
Substance	5.3	3.6	4.0	4.4	3.0	3.4	4.5
Any	19.1	18.7	24.2	17.6	17.0	22.3	26.1
Mild	37.9	35.9	36.2	37.1	35.9	35.7	36.6
Moderate	33.6	33.9	36.3	32.7	33.9	34.1	38.5
Severe	28.5	25.7	27.6	30.2	27.6	30.2	25.0

Note: Results are in percentiles. The weighted rates are based on the population of each country (Brazil, Canada, Chile, Colombia, Guatemala, Mexico, USA).

Table 3.4. 12-month and lifetime estimated prevalence rate of specific mental disorders in the Americas, North America, and Latin America.

Disorder	Americas			North America			Latin America		
Lifetime Prevalence									
	Median	Mean	Weighted	Median	Mean	Weighted	Median	Mean	Weighted
Non-affective psychosis	2.4	2.4	3.0	3.1	3.1	3.1	2.1	2.1	2.0
Major depression	11.1	12.0	14.5	14.6	14.6	16.4	9.7	9.2	12.5
Dysthymia	1.4	1.2	1.8	2.5	2.5	2.5	1.1	0.8	1.2
Mania disorder	3.1	2.2	3.3	3.3	3.3	4.2	3.0	2.1	2.3
Generalized anxiety	2.4	2.0	4.0	5.7	5.7	5.7	1.7	1.3	2.4
Panic disorder	2.0	1.6	3.0	4.2	4.2	4.6	1.1	1.2	1.4
Lifetime Prevalence									
	Median	Mean	Weighted	Median	Mean	Weighted	Median	Mean	Weighted
Agoraphobia	3.1	2.1	1.9	1.4	1.4	1.3	3.8	2.5	2.5
Post-traumatic stress disorder	3.3	2.5	4.6	6.8	6.8	6.8	2.5	1.8	2.5
Social phobia	6.4	5.6	8.3	10.1	10.1	11.7	4.9	5.0	4.8
Obsessive-compulsive	2.7	1.8	3.7	2.3	2.3	2.3	2.9	1.2	5.9
Alcohol abuse/dependence	10.9	10.5	12.4	13.2	13.2	13.2	10.4	10.0	11.7
Drug abuse/dependence	3.3	2.7	5.4	8.0	8.0	8.0	2.3	1.9	3.1
12-Month Prevalence									
	Median	Mean	Weighted	Median	Mean	Weighted	Median	Mean	Weighted
Non-affective psychosis	1.0	1.0	1.4	1.4	1.4	1.4	0.9	0.9	0.8
Major depression	5.2	5.3	6.7	5.8	5.8	6.6	5.0	5.3	6.7
Dysthymia	1.3	1.0	1.3	1.5	1.5	1.5	1.3	0.6	1.0
Mania disorder	1.3	1.4	1.9	1.8	1.8	2.4	1.1	1.4	1.3
Generalized anxiety	1.3	1.1	2.0	2.7	2.7	2.7	1.0	0.6	1.4
Panic disorder	1.3	1.0	1.8	2.1	2.1	2.6	0.8	0.8	0.9
Agoraphobia	1.8	1.0	1.2	0.8	0.8	0.9	2.2	1.5	1.5
Post-traumatic stress disorder	1.5	1.1	2.3	3.6	3.6	3.6	1.1	0.6	1.2
Social phobia	3.6	3.0	4.9	5.1	5.1	6.7	3.0	2.8	3.1
Obsessive-compulsive	1.7	1.2	2.1	1.2	1.2	1.2	1.8	1.2	3.5
Alcohol abuse/dependence	4.6	3.3	3.6	6.3	6.3	3.8	3.9	3.3	3.5
Drug abuse/dependence	1.4	1.3	1.3	2.2	2.2	1.6	1.1	0.9	0.9

Note: Results are in percentiles. The weighted rates are based on the population of each country (Brazil, Canada, Chile, Colombia, Guatemala, Mexico, USA). Which countries contributed to each disorder estimate is noted in Table 3.2.

Table 3.5. Service utilization for any disorder by severity and type of service provider, and treatment gap (no treatment).

	Total	Any Disorder	Severe	Moderate	Mild	No Disorder
BRAZIL-WMH						
General medical	3.3	8.6	12.0	7.7	5.9	1.1
Mental health	5.6	14.0	23.2	12.3	6.4	2.0
Health care	8.0	19.7	30.2	17.2	11.6	3.0
Non-health care	2.0	5.2	9.5	4.6	1.5	0.7
Any treatment	9.0	21.9	32.8	20.0	12.7	3.6
No treatment	91.0	78.1	67.2	80.0	86.3	96.4
CANADA-CCHS						
General medical	5.4	17.5	42.0	17.7	4.6	2.8
Mental health	5.4	16.4	40.3	16.6	4.0	3.0
Health care	8.3	24.1	55.5	2.5	7.5	4.8
Non-health care	2.9	7.6	18.8	7.0	2.2	1.8
Any treatment	9.5	25.9	58.0	27.1	8.5	5.8
No treatment	90.5	74.1	42.0	72.9	91.5	94.2
CHILE-CPPS*						
General medical	17.7	34.1	57.5	41.9	17.4	12.9
Mental health	5.6	13.1	29.4	9.6	5.0	3.5
Health care	20.1	38.5	65.0	44.3	20.3	14.8
Non-health care	1.2	2.7	1.0	4.8	3.1	0.8
Any treatment	20.1	38.5	65.0	44.3	20.3	14.8
No treatment	79.9	61.5	39.8	52.0	60.6	95.2
COLOMBIA-WMH						
General medical	2.3	6.0	9.3	6.1	2.7	1.4
Mental health	3.0	7.7	27.8	10.3	7.8	3.4
Health care	5.0	13.2	25.7	11.5	8.4	3.0
Non-health care	0.7	1.7	4.6	0.8	0.4	0.5
Any treatment	5.5	14.0	27.8	10.6	8.2	3.4
No treatment	94.5	86.1	72.2	89.4	91.8	96.6

TREATMENT GAP IN THE AMERICAS

	Total	Any Disorder	Severe	Moderate	Mild	No Disorder
GUATEMALA*						
General medical	2.2	6.3	9.1	6.1	0.4	2.8
Mental health	3.0	3.8	2.3	4.6	6.6	2.1
Health care	4.5	8.9	9.4	10.6	7.1	4.2
Non-health care	5.7	10.4	8.1	19.1	10.5	5.3
Any treatment	8.7	15.1	13.1	19.1	17.1	8.3
No treatment	91.3	84.9	86.9	80.9	82.9	91.7
MEXICO-WMH						
General medical	1.7	6.5	8.1	6.8	4.9	1.1
Mental health	2.8	10.2	25.8	17.9	11.9	1.8
Health care	4.2	15.8	20.2	18.6	10.2	2.7
Non-health care	1.2	3.9	3.6	4.1	3.5	0.9
Any treatment	5.1	18.6	23.8	20.8	12.6	3.4
No treatment	94.9	81.4	76.2	79.2	87.4	96.6
USA-NCS-R						
General medical	9.3	22.8	32.1	23.6	18.9	4.7
Mental health	8.8	21.7	41.9	20.7	13.3	4.4
Health care	15.3	36.0	52.3	34.1	22.5	8.1
Non-health care	5.6	13.2				
Any treatment	17.9	41.1	59.7	39.9	26.2	10.1
No treatment	82.1	58.9	40.3	60.1	73.8	90.3

Notes: Results are in percentiles. General medical = Any non-specialized mental health medical practitioner that is providing mental health treatment; Mental health = Providers in the formal mental health care system; Health care = Treatment provided by General medical or Mental health; Non-health care = Complementary treatment, including religious leader, curanderos; self-help groups, e.g. Alcoholics Anonymous; Any treatment = Treatment obtained from General medical, Mental health, or Non-health care; No treatment = Not obtaining treatment from Any treatment; *Guatemala treatment is based on lifetime service utilization and Chile is based on six-month service utilization; Prevalence rates are 12-months for all countries.

Table 3.6. Service utilization by specific disorder.

Disorder	Brazil	Canada	Chile	Colombia	Guatemala	Mexico	USA
Non-affective psychosis			53.7		14.9		58.0
Major depression		57.0	62.4		23.8	26.1	56.8
Dysthymia			70.2		0.0		67.5
Mania disorder		52.0	47.4		13.1	26.4	55.5
Generalized anxiety			66.0		0.0	14.1	52.3
Panic disorder		33.0	71.3			29.9	65.4
Agoraphobia		38.4	41.7		23.3	17.5	52.6
Post-traumatic stress disorder			64.8		4.5		57.4
Social phobia		41.4	38.5		53.6	16.3	45.6
Obsessive-compulsive			72.4		11.2		
Alcohol abuse/dependence		12.6	14.9		8.7	23.4	40.4
Drug abuse/dependence		22.5	50.0				44.7
Any disorder	21.9	25.9	38.5	14.0	15.1	18.6	41.1

Note: Results are in percentiles.

Table 3.7. 12-month prevalence rate of service utilization in selected psychiatric epidemiologic prevalence studies in the Americas for affective, anxiety and substance use disorders.

Disorder	Canada	Chile	Colombia	Guatemala	Mexico	USA
Anxiety	30.6	61.0	17.6	2.9	22.2	56.4
Affective	41.1	50.0	15.2	4.9	13.2	42.2
Substance	23.8	25.5	7.5	3.0	17.1	38.1

Note: Results are in percentiles. Data for Brazil is not currently available.

Table 3.8. Treatment gap by specific disorder.

Disorder	Brazil	Canada	Chile	Colombia	Guatemala	Mexico	USA	Mean	Median
Non-affective psychosis			46.3		85.1		42.0	57.8	46.3
Major depression		43.0	37.6		76.2	73.9	43.2	54.8	43.2
Dysthymia			29.8		100		32.5	54.1	32.5
Mania disorder		48.0	52.6		86.9	73.6	44.5	61.1	52.6
Generalized anxiety			34.0		100	85.9	47.7	66.9	66.8
Panic disorder		67.0	28.7			70.1	34.6	50.1	50.8
Agoraphobia		61.6	58.3		76.7	82.5	47.4	65.3	61.6
Post-traumatic stress disorder			35.2		95.5		42.6	57.8	42.6
Social phobia		58.6	61.5		46.4	83.7	54.4	60.9	58.6
Obsessive-compulsive			27.6		88.8			58.2	58.2
Alcohol abuse/dependence		87.4	85.1		91.3	76.6	59.6	80.0	85.1
Drug abuse/dependence		77.5	50.0				55.3	60.9	55.3
Any disorder	78.1	74.1	61.5	86.0	84.9	81.4	58.9	75.0	78.1

Note: Results are in percentiles.

Table 3.9. Days out of role per year (mean) by severity of disorder.

	Severe	Moderate	Mild	Any Disorder
Brazil				30.1
Canada	83.6	16.3	5.1	
Colombia	53.0	33.7	15.6	
Mexico	42.8	26.3	11.7	
USA	135.9	65.3	35.7	

Note: Canada does not include substance use disorders and therefore is underestimated compared to the other countries.

Table 3.10. Percent of individuals with a disorder that have contact with treatment in the first year of being diagnosed and the median delay in years for seeking treatment.

	Contact first year %			Median delay in years		
	Anxiety	Affective	Substance	Anxiety	Affective	Substance
Canada	32.4	34.6		3.0	2.0	
Colombia	2.9	18.7	3.6	26.0	9.0	11.0
Mexico	3.6	16.0	0.9	30.0	14.0	10.0
USA	11.3	35.4	10.0	23.0	4.0	13.0

Note: Canada based on a crude estimate as time periods were in 5-year blocks and not continuous for calculating delay in treatment.

Table 3.11. Treatment gap estimates for the Americas, 12-month prevalent disorders by severity.

	Any disorder	Severe	Moderate	Mild	Severe-Moderate
Brazil-WMH	78.1	67.2	80.0	86.3	73.5
Canada-CCHS	74.1	42.0	72.9	91.5	60.0
Chile-CPPS	61.5	39.8	52.0	60.6	45.3
Colombia-WMH	86.1	72.2	89.4	91.8	83.2
Guatemala	84.9	86.9	80.9	82.9	84.8
Mexico-WMH	81.4	76.2	79.2	87.4	77.9
USA-NCS-R	58.9	40.3	60.1	73.8	52.4
The Americas					
Weight	69.3	69.4	60.6	55.4	63.4
Mean	75.0	60.7	73.5	82.0	68.2
Median	78.1	67.2	79.2	86.3	73.5
Latin America					
Weight	79.1	79.5	80.0	67.9	74.2
Mean	78.4	68.5	76.3	81.8	72.9
Median	81.4	72.2	80.0	86.3	77.9
North America					
Weighted	60.0	40.4	61.0	75.1	47.2

Note: Results are in percentiles.

Table 3.12. Treatment gap estimates for the Americas, 12-month prevalent affective, anxiety and substance use disorders.

	Anxiety disorders	Affective disorders	Substance use disorders
Canada-CCHS	69.4	58.9	76.2
Chile-CPPS	39.0	50.0	74.5
Colombia-WMH	82.4	84.8	92.5
Guatemala	97.1	95.1	97.0
Mexico-WMH	77.8	86.8	82.9
USA-NCS-R	43.6	57.8	61.9
The Americas			
Weight	56.2	66.3	70.6
Mean	68.2	72.2	80.8
Median	73.6	71.9	79.6
Latin America			
Weight	76.3	83.2	85.3
Mean	74.1	79.2	86.7
Median	80.1	85.8	87.7
North America			
Weighted	46.3	57.9	63.4

Note: Results are in percentiles. Data on Brazil was not available.

Table 3.13. Comparison of current study treatment gap in the Americas and Latin America with historical treatment gap studies.

Disorder	Kohn 2004 Americas Median	Kohn 2005 Latin America Mean	Kohn 2005 Latin America Median	Current Study American Mean	Current Study Americas Median	Current Study Latin America Mean	Current Study Latin America Median
Non-affective psychosis	56.8	37.4	44.4	57.8	46.3	65.7	65.7
Major depression	56.9	58.9	57.9	54.8	43.2	62.6	73.9
Dysthymia	48.6	58.8	58.0	54.1	32.5	64.9	64.9
Mania disorder	60.2	64.0	62.2	61.1	52.6	71.0	73.6
Generalized anxiety	49.6	63.1	58.2	66.9	66.8	73.3	85.9
Panic disorder	55.4	52.9	58.9	50.1	50.8	49.4	49.4
Agoraphobia				65.3	61.6	72.5	76.7
Post-traumatic stress disorder				57.8	42.6	65.4	65.4
Social phobia				60.9	58.6	63.9	61.5
Obsessive-compulsive	82.0	59.9	59.9	58.2	58.2	58.2	58.2
Alcohol abuse/dependence	72.6	71.4	76.0	80.0	85.1	84.3	85.1
Drug abuse/dependence				60.9	55.3	50.0	50.0
Any disorder				75.0	78.1	78.4	81.4

Table 3.14. Treatment gap for schizophrenia and service utilization in Latin America and the Caribbean, by country.

Country	Population Per 100,000	Income level	Estimated prevalence (per 1000 population)	Treated prevalence (per 1000 population)	SERVICE UTILIZATION			Treatment gap (%)
					Outpatients (%)	Inpatients at mental hospitals (%)	Inpatients at general hospitals (%)	
Anguilla	0.14		5.75	5.04	50.8	14.3	0	12.3
Antigua and Barbuda	0.86	Upper-Middle	5.08	1.83	65.5	0	34.4	68.2
Argentina	80.39	Upper-Middle	4.41	2.61	3.4	47.4	29.2	40.7
Bahamas	3.35	High-Income	5.08	2.62	13.4	51.0	36.1	54.4
Barbados	2.69	High-Income	5.08	6.63	30.0	45.8	46.0	-15.3
Belize	3.01	Lower-Middle	4.41	13.56	29.1	31.0	40.0	-207.8
Bolivia	98.28	Lower-Middle	4.13	1.47	13.5	17.3	28.7	66.6
Brazil	1841.84	Upper-Middle	4.41	3.27	13.6	44.0	42.8	25.9
British Virgin Islands	0.28		5.75	4.18	30.0	24.1	0	27.3
Chile	159.56	Upper-Middle	4.41	1.90	12.5	26.6	38.3	56.9
Costa Rica	44.02	Upper-Middle	4.41	1.57	6.0	12.6	28.0	64.4
Cuba	112.39	Upper-Middle	4.47	2.32	7.7	25.9	18.6	59.7
Dominica	0.71	Upper-Middle	5.08	6.49	30.0	61.0	0	-12.9
Dominican Republic	85.63	Upper-Middle	5.08	0.92	31.0	15.0	21.5	83.9
Ecuador	134.08	Upper-Middle	4.13	0.12	1.0	21.6	38.0	97.3
El Salvador	57.44	Lower-Middle	4.41	1.64	19.9	0	19.0	62.9
Grenada	1.07	Upper-Middle	5.08	2.74	30.0	65.0	73.0	52.3

TREATMENT GAP IN THE AMERICAS

Country	Population Per 100,000	Income level	Estimated prevalence (per 1000 population)	Treated prevalence (per 1000 population)	SERVICE UTILIZATION			
					Outpatients (%)	Inpatients at mental hospitals (%)	Inpatients at general hospitals (%)	Treatment gap (%)
Guatemala	140.10	Lower-Middle	4.13	0.16	3.1	44.4	51.4	96.4
Guyana	7.50	Lower-Middle	4.41	1.21	20.0	86.5	44.7	72.5
Haiti	3.01	Low-Income	4.13	13.56	29.1	31.0	40.0	-135.8
Honduras	71.97	Lower-Middle	4.41	1.50	9.0	0	14.0	65.9
Jamaica	26.61	Upper-Middle	5.08	5.66	51.0	45.8	78.7	1.6
Mexico	1032.63	Upper-Middle	4.41	0.28	5.2	15.9	23.6	93.7
Montserrat	0.05		5.75	7.68	84.1	0	0	-33.5
Nicaragua	56.26	Lower-Middle	4.13	0.24	11.6	6.0	35.6	94.6
Panama	31.72	Upper-Middle	4.41	0.52	6.0	17.4	33.2	88.2
Paraguay	52.00	Lower-Middle	4.41	0.87	21.0	20.8	58.1	80.3
Peru	272.19	Upper-Middle	4.13	0.56	3.0	21.6	25.1	87.3
Saint Kitts and Nevis	0.51	High-Income	5.08	5.67	36.6	50.0	0.0	1.5
Saint Lucia	1.67	Upper-Middle	5.08	1.93	30.0	5.9	68.2	66.4
Saint Vincent and the Grenadines	1.00	Upper-Middle	5.08	5.46	67.8	14.3	71.1	5.1
Suriname	4.80	Upper-Middle	4.41	16.63	30.0	0.0	12.3	-277.3
Trinidad and Tobago	13.28	High-Income	5.08	9.05	26.8	46.8	56.4	-57.3
Turks and Caicos Islands	0.33	High-Income	5.75	1.90	18.8	0	0	67.0
Uruguay	33.34	Upper-Middle	4.41	1.92	2.7	21.6	22.9	56.5

Note: Seven countries had a negative treatment gap, a result most likely due to instability of rates due to the small population of the country.

Table 3.15. Treatment gap for schizophrenia in Latin America and the Caribbean, by subregion.

	Mean	Median	Weighted
Latin America & Caribbean	26.0	56.9	56.4
Caribbean	2.1	12.3	38.3
Central America	37.8	65.9	79.4
South America	69.4	66.6	73.9
Mexico	93.7	93.7	93.7
Brazil	25.9	25.9	25.9
Low-Income	21.7	66.6	74.7
High-Income	27.5	53.4	54.1

Note: Results are in percentiles.

Table 4.1. Prevalence of child and adolescent mental disorders in selected countries of the Americas.

	Brazil Taubaté	Chile			Colombia			Mexico City			Puerto Rico	USA NCS-A	NHANES USA		
Age Range	7-14	4-18			13-17			12-17			4-16	13-18	8-15		
Disorder	T	M	F	T	M	F	T	M	F	T	T	T	M	F	T
Major depressive disorder	1.0	3.6	8.6	6.1	3.5	6.5	5.0	2.0	7.6	4.8	3.6	8.2	1.8	3.7	2.7
Dysthymia		0.1	0.1	0.1	0.0	0.3	0.1	0.2	0.9	0.5	0.6	2.1	0.7	1.2	1.0
Bipolar disorder					0.8	0.9	0.9	2.4	0.5	2.5					
Generalized anxiety disorder	0.4	6.2	10.3	8.2	0.4	0.6	0.5	0.3	0.7	0.5	2.4	1.1	0.3	0.4	0.3
Panic disorder	-				0.7	1.4	1.1	1.3	1.9	1.6	0.7	1.9	0.2	0.6	0.4
Agoraphobia	-				2.2	4.8	3.8	2.5	4.7	3.6		1.8			
Specific phobia	1.0							15.6	26.1	20.9		15.8			
Age Range	7-14	4-18			13-17			12-17			4-16	13-18	8-15		
Trastorno	T	M	F	T	M	F	T	M	F	T	T	T	M	F	T
Social phobia	0.7	2.9	8.2	5.5				10.0	12.4	11.2	2.8	8.2			
Post-traumatic stress disorder	0.1				0.2	1.4	0.8	0.3	1.7	1.0	0.8	3.9			
Obsessive compulsive disorder	0.1														
Separation anxiety	1.4	7.3	13.1	10.2	0.4	5.6	1.7	1.7	3.6	2.6	5.7	1.6			
Attention deficit disorder	1.8	16.6	15.1	13.7				1.4	1.8	1.6	8.9	6.5	11.6	5.4	8.6
Oppositional-defiant disorder	4.7	7.5	9.9	8.7				3.7	6.9	5.3	6.0	8.3			
Conduct disorder	2.2	4.4	3.0	3.7	1.9	0.8	1.4	3.3	2.6	3.0	2.6	5.4	2.3	1.5	2.1
Eating disorder		0.1	0.5	0.3	0.2	0.3	0.3					2.8	0.1	0.1	0.1
Alcohol abuse/dependence		3.9	3.2	3.6	4.4	2.4	3.4	4.1	2.3	3.2	2.0	4.7			
Drug abuse/dependence		0.5	1.1	0.8	1.3	0.6	1.0	1.7	0.8	1.3	1.2	5.7			
Tobacco dependence		1.4	1.8	1.6	0.1	0.6	0.4				1.0				
Any disorder	12.7	33.5	43.3	38.3	14.8	17.4	16.1	35.7	43.2	39.4	19.8	42.6	14.5	11.6	13.1

Notes: Results are in percentiles. Current prevalence for Taubaté, Brazil; Puerto Rico and Chile without impairment; USA = National Comorbidity Survey Replication–Adolescent Supplement (NCS-A); National Health and Nutrition Examination Survey (NHANES).

Table 4.2. 12-month prevalence rate of mental disorders in children and adolescents in selected psychiatric epidemiologic prevalence studies in the Americas for affective, anxiety and substance use disorders and by severity of disorder.

Disorder	Taubaté Brazil	Chile	Colombia	Mexico City	Puerto Rico	USA NCS-A
Anxiety	5.2	18.5	5.5	29.8	9.5	24.9
Affective	1.0	6.1	5.3	7.2	4.1	10.0
Impulse control	8.8	21.8	7.6	15.3	12.6	16.3
Substance		4.8	5.4	3.3	3.1	8.3
Any	12.7	38.3	16.1	39.4	19.8	40.3
Mild		22.7		21.5	42.2	58.2
Moderate		18.6		51.9	29.2	22.9
Severe		58.7		26.6	28.6	18.8

Notes: Results are in percentiles. Mexico City defined severity as severe if bipolar I disorder was present, substance dependence with a physiological dependence syndrome, a suicide attempt in conjunction with any other disorder, or reporting at least two areas of role functioning with severe role impairment as measured by the disorder specific Sheehan Disability Scales. Disorder severity was defined as moderate if criteria for a serious disorder was not met, but disability was rated as at least moderate in any Sheehan Disability Scales or if substance dependence without a physiological dependence syndrome was present. All other disorders were classified as mild. Puerto Rico severity was defined as any disorder meeting DISC criteria in either parent or child reports, excluding the DISC impairment criterion; mild meeting DISC criteria including the DISC-specific impairment criterion in either parent or child reports; moderate meeting DISC criteria including significant impairment based on a cutoff less than 69 on the PIC-GAS; and severe meeting full DISC criteria including the DISC-specific impairment criterion in either parent or child reports and a cutoff less than 69 on the PIC-GAS. The USA NCS-A defined severity as by having 1 or more 12-month disorders as severe if there was a score of 50 or less on the Children's Global Assessment Scale (CGAS). CGAS scores of 51 through 60 were defined as moderate and above 60 as mild. Chile severity is defined as meeting criteria D on the DISC and moderate would be defined as meeting criteria A. Impulse control includes attention-deficit disorder.

Table 4.3. Service utilization for children and adolescents by any disorder by severity and type of service provider and treatment gap (no treatment).

	Total	Any disorder	Severe	Moderate	Mild	No Disorder
CHILE						
School based	11.9	18.9	21.9	14.1	11.7	8.1
Mental health	9.3	14.5	19.2	5.2	8.2	6.1
Primary care	3.0	4.4	5.9	3.3	1.2	2.2
Social services	0.3	0.4	0.6	0.6	0	0.3
Non-health care	2.2	3.6	5.3	1.6	0.7	1.4
Any treatment	23.2	33.3	41.6	21.7	21.2	16.9
No treatment	76.8	66.7	59.4	78.3	78.8	83.1
MEXICO CITY						
School based	2.5	13.7	4.8	4.5	3.9	1.3
Health care	6.3	9.5	14.2	9.2	6.5	4.3
Non-health care	1.7	2.9	4.5	2.8	1.7	0.9
Any treatment	9.1	13.7	19.2	13.2	10.4	6.1
No treatment	90.9	86.3	80.8	86.6	89.6	93.9
PUERTO RICO						
School based	12.7	32.7	33.3	32.2	32.2	6.8
Health care	8.7	23.4	35.3	17.2	12.2	4.4
Any treatment	16.6	39.8	49.6	39.5	25.7	9.7
No treatment	83.4	60.2	50.4	60.5	74.3	90.3
USA-NCS-A						
School based	14.9	25.4				6.2
Mental health	13.3	23.8				4.6
Primary care	5.9	11.0				1.6
Social services	4.4	7.2				2.0
Juvenile justice	2.9	5.2				1.0
Non-health care	3.3	5.3				1.7
Any treatment	27.6	45.3	47.4		26.1	13.0
No treatment	72.4	64.7	52.6		73.9	87.0

Notes: Results are in percentiles. USA treatment seeking is based on 12-month rates except for severity that are lifetime rates; all Chile, Mexico and Puerto Rico are 12-month rates.

Table 4.4. Treatment gap estimates for children and adolescents 12-month prevalent mental disorders in the Americas.

	Any disorder	Severe	Moderate	Mild
Chile	66.7	59.4	78.3	78.8
Mexico City	86.3	80.8	86.6	89.6
Puerto Rico	60.2	50.4	60.5	74.3
USA NCS-A	64.7	52.6		73.9
The Americas				
Mean	69.5	60.8		79.2
Median	65.7	52.6		74.3
Latin America				
Mean	71.1	63.5	75.1	80.9
Median	66.7	59.4	78.3	78.8
North America				
Weighted	63.8	52.6		73.9

Notes: Results are in percentiles. USA treatment seeking is based on 12-month rates except for severity that are lifetime rates; all Chile, Mexico and Puerto Rico are 12-month rates.

Table 4.5. Treatment gap by specific children and adolescents mental disorder in the Americas.

Disorder	Chile	Mexico	USA	Mean	Median
Any anxiety disorder	66.2	86.7	82.2	78.4	82.2
Any affective disorder	73.9	80.7	62.3	72.3	73.9
Any impulse control disorder	62.7	82.9	51.1	65.6	62.7
Any substance use disorder	73.1	77.8	62.0	71.0	73.1
Any disorder	66.7	86.3	63.8	72.3	66.7

Notes: Results are in percentiles. Impulse control disorders include ADHD. USA treatment seeking is based on lifetime rates. All Chile, Mexico and Puerto Rico are 12-month rates.

Table 5.1. Prevalence of 12-month mental disorders in adult indigenous population.

Disorder	Guatemala Mayan	Chile Mapuche	USA Southwest Tribe	USA Northern Plains Tribe
	409	75	1446	1638
Anxiety disorders	1.5	3.9	7.5	10.1
Affective disorders	1.2	6.0	7.3	4.6
Substance disorders	2.7	7.0	10.5	17.5
Any disorder	6.6	15.7	21.0	24.3

Note: Results are in percentiles.

Table 5.2. Service utilization among indigenous people with a mental disorder by type of service provider and treatment gap (no treatment).

Treatment	Guatemala Mayan	Chile Mapuche	USA Southwest Tribe	USA Northern Plains Tribe
Mental health	2.5	0	25.9	28.4
Other medical	11.6	7.6	20.5	21.3
Traditional healer	8.2	0	39.2	19.0
Any treatment	18.0	0	66.6	63.6
No treatment	82.0	92.4	33.4	36.4

Notes: Results are in percentiles. Guatemala and USA treatment seeking is based on lifetime rates; Chile is based on 6- month help seeking.

Table 6.1. Barriers to care among adults in Chile.

Barriers to care	Respondents with disorder who did not seek treatment				No diagnosis but acknowledge need for help
	Any	Severe	Moderate	Mild	
<i>Perceived Need</i>					
Low perceived need	63.8	50.5	67.2	70.2	
<i>Structural barriers among those with perceived need</i>					
Financial burden	41.8	51.7	43.7	40.1	35.1
Lack of knowledge about where to go for help	21.4	26.1	16.2	22.6	12.0
Transportation difficulty	11.9	15.1	3.4	20.8	9.9
Inconvenient	24.5	28.7	19.2	23.6	23.8
<i>Attitudinal barriers among those with perceived need</i>					
Thought problem would get better	66.2	61.4	59.6	67.3	56.2
Belief treatment is ineffective	20.9	37.1	13.8	19.6	16.1
Stigma or afraid to ask for help	15.9	22.9	11.1	20.9	11.3
Afraid to learn about your problems	12.3	21.8	11.5	11.5	9.6
Wanted to handle it on own	65.2	54.9	65.6	63.0	51.2
Worried about possible diagnosis	43.6	55.4	42.9	44.1	30.2
Didn't trust professional	26.7	27.6	31.0	21.9	25.5

Note: Results are in percentiles.

Table 6.2. Barriers to care among adults in Canada.

Barriers to care	Respondents with disorder who did not seek treatment				No diagnosis but acknowledge need for help
	Any	Severe	Moderate	Mild	
<i>Perceived need</i>					
Low perceived need	93.3	96.6	92.3	89.8	89.5
<i>Structural barriers among those with perceived need</i>					
Financial burden	8.9	10.5	8.7	6.1	6.7
Lack of availability of treatment	3.2	6.4	1.4	2.0	4.5
Transportation problems or child care	2.7	3.5	1.0	4.1	2.4
Inconvenient	19.9	22.2	16.3	23.2	21.2
Lack of knowledge about where to go for help	15.0	17.0	13.4	19.7	16.1
Professional unavailable at the time	7.0	5.8	10.5	3.0	4.3
Waiting time too long	3.8	5.3	3.3	11.1	2.2
Language barrier	0.4	0	1.0	0	1.0
<i>Attitudinal barriers among those with perceived need</i>					
Wanted to handle it on own	40.5	31.6	44.5	46.9	44.4
Belief treatment is ineffective	10.1	11.7	11.0	6.1	6.1
Stigma or afraid to ask for help	18.8	18.7	20.1	15.2	13.6
Personal or family responsibilities	5.7	7.6	6.2	6.1	3.1

Note: Results are in percentiles.

Table 6.3. Barriers to care among adults in United States NCS-R.

Barriers to care	Respondents with disorder who did not seek treatment			
	Any	Severe	Moderate	Mild
<i>Perceived need</i>				
Low perceived need	44.8	25.9	39.3	57.3
<i>Structural barriers among those with perceived need</i>				
Financial burden	15.3	26.0	14.5	9.1
Lack of availability of treatment	12.8	24.2	11.3	7.0
Transportation problems	5.7	13.4	4.9	1.6
Inconvenient	9.8	18.7	10.0	3.7
<i>Attitudinal barriers among those with perceived need</i>				
Wanted to handle it on own	72.6	62.7	73.9	77.7
Belief treatment is ineffective	16.4	26.0	14.9	12.0
Stigma or afraid to ask for help	9.1	21.3	10.3	5.3
Thought problem would get better	11.5	23.1	10.3	5.3
Problem was not severe	16.9	27.1	15.9	11.5

Note: Results are in percentiles.

Table 6.4. Barriers to care among children and adolescents in Chile who did not receive treatment.

Barriers to care	Respondents with disorder who did not seek treatment				No diagnosis but acknowledge need for help
	Any	Severe	Moderate	Mild	
Low perceived need	70.8	48.1	91.6	97.2	77.5
Personal reasons	28.1				23.9
Social reasons	56.0				23.9
Economic reasons	76.2				43.8
Practical reasons	48.3				43.8
Service related reasons	56.0				43.8

Notes: Results are in percentiles. *Personal reasons* include: believe problem was not so serious, could handle it alone, and did not want to receive help; *Social reasons* include: no confidence in person recommend, worry what family or friends think, others don't recommend treatment, don't trust referral, worried about labeling, family conflict on the need for treatment. *Economic reasons* include: expensive, no insurance, health plan won't authorize, not eligible for services. *Practical reasons* include: inconvenient, services fall short, trouble getting there, not know where to go, and not enough time. *Service related reasons* include: negative experience with health professional, not believe it will help, too long of a wait for the consultation, too many conditions on receiving services, service not part of the treatment, felt disrespected by the professional, no professional available, refused treatment, trouble making appointment, not given appointment, concern over confidentiality.