

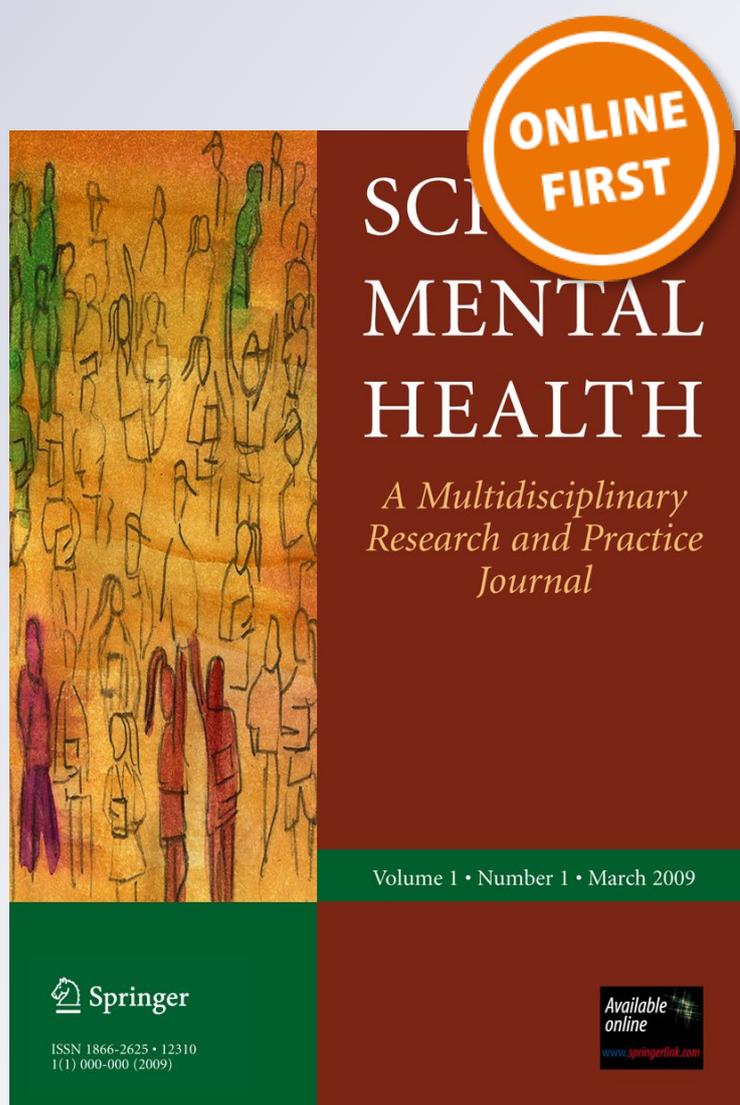
# *Cross-Sectional Study of Unmet Mental Health Need in 5- to 7-Year Old Latino Children in the United States: Do Teachers and Parents Make a Difference in Service Utilization?*

**Claudio O. Toppelberg, Marisa O. Hollinshead, Brian A. Collins & Alfonso Nieto-Castañón**

**School Mental Health**  
A Multidisciplinary Research and Practice Journal

ISSN 1866-2625

School Mental Health  
DOI 10.1007/s12310-012-9089-6



# Cross-Sectional Study of Unmet Mental Health Need in 5- to 7-Year Old Latino Children in the United States: Do Teachers and Parents Make a Difference in Service Utilization?

Claudio O. Toppelberg · Marisa O. Hollinshead ·  
Brian A. Collins · Alfonso Nieto-Castañón

© Springer Science+Business Media New York 2012

**Abstract** The aim of the study is to examine the rates of mental health service utilization in young Latino children of immigrants in relation to maternal and teacher reports of child mental health need. Specific knowledge is lacking about gaps in service utilization among young Latino children, the fastest growing and possibly the most underserved segment of the US child population. The associations of mental health service utilization (Service Assessment for Children and Adolescents) and mental health need (clinical levels of internalizing, externalizing, or total problems reported by mothers [Child Behavior Checklist] and teachers [Teacher's Report Form]) were examined in a community sample of young Latino children of immigrants ( $n = 228$ ; mean age = 6) and compared across mothers' and teachers' responses. Mother–teacher agreement was also studied. Sixty-five children (28.5 %) had a mental health need; most (76.9 %) of these received no services. For all types of mental health need, service utilization was more likely when need was reported by mothers rather than teachers ( $p = .03$ ). Teachers' reports were not associated with service utilization. Mother–teacher agreement was low for externalizing ( $r = .23$ ;  $p \leq 0.01$ ) and total problems ( $r = .21$ ;  $p \leq 0.05$ ), and nonsignificant for internalizing problems. This study is the

first in the United States to document, in such a young Latino group, high rates of unmet need comparable to those among older Latino youth; low or no mother–teacher agreement on which children had a mental health need; low utilization of school-based services; and a lack of association between service utilization and teacher-reported mental health need—both for externalizing and internalizing problems. These findings suggest that schools are not effectively leveraging mental health services for young Latino children. Potential factors responsible for the findings are discussed.

**Keywords** Latino · Child · Immigrant · Mental health · Service utilization

## Introduction

Currently, an alarming gap exists between mental health (MH) need and utilization of services for most American children, with unmet MH need estimates ranging from 76 % (Whites) to 88 % (Latino) (Kataoka, Zhang, & Wells, 2002). This gap is of particular concern in Latino children from immigrant backgrounds (Alegria, Vallas, & Pumariega, 2010), the fastest growing segment of the US child population (Toppelberg & Collins, 2010), concern that becomes heightened when one considers that Latino youths have the highest documented risk of depression and suicidality indicators compared to non-Latino whites and African-Americans (Toppelberg & Collins, 2010). An estimate of the number of Latino children with mental health need who receive no services would suggest that they constitute around 3 % of the US child population—roughly equivalent to half of all American children who are estimated to suffer from ADHD (Polanczyk, de Lima,

---

C. O. Toppelberg (✉)  
Judge Baker Children's Center, Children's Hospital Boston,  
Harvard Medical School, 53 Parker Hill Avenue,  
Boston, MA 02120, USA  
e-mail: topi@hms.harvard.edu

M. O. Hollinshead · A. Nieto-Castañón  
Judge Baker Children's Center, Boston, MA, USA

B. A. Collins  
Hunter College, New York, NY, USA

Horta, Biederman, & Rohde, 2007). Mental health disparities are well documented in prevention, diagnostic assessment, and access to psychotherapy and psychopharmacological services (Alegria et al., 2010) but little is known about the role disparities may play within a school context. Latinos as a group have one of the lowest levels of academic achievement and one of the highest school dropout rates among minorities in the United States (Toppelberg & Collins, 2010). While poor academic outcomes have been attributed to low parental education and motivational and socioeconomic factors, the roles of high mental health need and low mental health utilization are poorly understood. Education system reform has directed relatively little attention to mental health obstacles to learning (Stephan, Weist, Kataoka, Adelsheim, & Mills, 2007). To address MH need and utilization gaps in Latino children, knowledge about barriers to MH service utilization is required (Vega & Lopez, 2001). In particular, very little is known about the MH needs and patterns of service utilization of young Latino children in the school setting. This is particularly important given that early detection and referral are crucial to prevent trajectories of educational failure and psychopathology (Wood et al., 2005), with schools playing a crucial role in the early recognition of MH need and early access to services (Hoagwood et al., 2007; Stephan et al., 2007).

A report issued by a US presidential commission stated: "While schools are primarily concerned with education, mental health is essential to learning as well as to social and emotional development. Because of this important interplay between emotional health and school success, schools must be partners in the mental health care of our children" (New Freedom Commission on Mental Health, 2003). This report emphasized the integral role of the school as a hub for youth mental health services, and several important reasons for why schools play a crucial role in facilitating services (e.g., decreasing the inefficiency of "no-shows," de-stigmatizing mental disorders within the school-based community, and increasing access for parents). While only 16–20 % of all children with MH need utilize any MH services (Burns et al., 1995), most of these (70–80 %) receive services at school (Rones & Hoagwood, 2000). In the absence of a clearly organized MH care system, schools are considered the main sector of a "de facto system of [MH] care" (Burns et al., 1995). This is, however, a truly inefficient system; accessing school MH services takes an exceedingly long time—between 2 and 4 years—and delays in receiving school MH services result in delays in receiving specialty MH services when these are needed. These delays appear to have a disproportionate impact on Latino and other minority youth, as they utilize both school and specialty MH services at a later age than non-Latino white children

(Wood et al., 2005). This is particularly troublesome if one considers the crucial role of schools in facilitating access to MH services for Latino youth, given the additional barriers to service utilization these children and families face. Specific language, cultural, and educational characteristics of many immigrant parents often result in barriers to communication and a mismatch with the MH and school systems' ability to assist them. While teachers would ideally assist immigrant parents with accessing MH services for their children, whether this is the case is not known. Little attention has been devoted to documenting any impact of teachers and the different roles parents and teachers may play in identifying mental health needs and facilitating access to services. If teachers had an impact on early detection of mental health need and service access, utilization of MH services would be higher when teachers report the MH need. Unfortunately, most studies define child MH need based solely on a parental checklist, the CBCL (Thompson & May, 2006), or just items from it (Kataoka et al., 2002) and, thus, cannot examine relations of teacher reports with service utilization. In other cases, studies do not focus on documenting these relationships (Burns et al., 2004). Thus, some basic questions the current study will address are whether teachers' reports of MH need are associated with receiving services, and whether MH service utilization by young Latino children is more likely depending on which adult—mother or teacher—is reporting the MH need. For schools to fulfill their responsibility in caring for children's MH (New Freedom Commission on Mental Health, 2003), teachers should have a positive impact on children's access to services.

Of related interest is the degree of cross-informant (dis)agreement between mothers and teachers of Latino children. The literature has long recognized the existence of discrepancies between informants of child MH problems, particularly parents and teachers (De Los Reyes & Kazdin, 2005), but no studies, to our knowledge, have addressed this important issue in young Latino or at-risk immigrant children or adolescents. The likelihood of a child receiving services may be higher when both the mother and teacher have identified the child as having a mental health need. Among 5 year olds in community samples, moderate mother–teacher CBCL/TRF convergence has been reported, which is typically higher for externalizing (e.g.,  $r = 0.46$ ) than internalizing scores (e.g.,  $r = 0.28$ ) (Kerr, Lunkenheimer, & Olson, 2007). Cross-informant correlations tend to be statistically significant, and their magnitude varies as a function of age, type of problems, type of settings, minority status, and other factors. In this way, they are typically higher for young children than for adolescents (in which  $r$ 's are around 0.28), for externalizing than for internalizing

problems, and for clinic than for community/non-clinic samples (De Los Reyes & Kazdin, 2005). Lower cross-informant agreement has been associated with minority ethnicity, maternal depression, and parental stress (De Los Reyes & Kazdin, 2005), all factors that could explain low agreement for immigrant parents. Divergent cultural views on what constitute problems in the child may also result in low agreement between teachers and parents (De Los Reyes & Kazdin, 2005). The lack of research in young Latino children is a troubling gap, since barriers between parents and school may contribute to even more divergent views of the child's MH, ultimately resulting in low service utilization. In the current study of young Latino children in the community, we will examine the degree of mother-teacher agreement as informants for young Latino children's MH need.

Differing roles in the early detection of MH problems may be expected from mothers and teachers, and these roles may vary depending on the type of child psychopathology. Teachers' ratings of externalizing problems are the best predictor of referral to MH services (Stanger & Lewis, 1993), and the few programs that target both education and MH tend to focus on children with externalizing problems (Hoagwood et al., 2007). Conversely, adolescents' internalizing problems are more frequently detected by parents (Stanger & Lewis, 1993) (who possibly spend more individualized time with the teenager) and this has been linked to service utilization. Hence, it is important to consider these patterns of relationships between type of MH need and MH service utilization and how they might change as a function of reporter of MH need, to understand whether particular types of MH need are more likely to be underserved. To this end, in the present study, we ask whether young Latino children with externalizing problems are more likely to utilize services when their MH need is ascertained based on teacher report (understanding that parental approval of services will be required), and whether those with internalizing problems are more likely to utilize services when MH need is ascertained based on maternal (as opposed to teacher) report. Prior studies were unable to address these questions for reasons discussed above, namely because teacher reports were not available (Thompson & May, 2006) or only selected items from parental reports were used to establish MH need, without specifying type of psychopathology (Kataoka et al., 2002).

### Current Study

This study focuses on the roles of parents and teachers as informants of child MH need and the impact of these roles on utilization of MH services in young Latino children of immigrants. It presents analyses of a non-referred,

community sample recruited from inner city public schools. An additional focus of the study is to explore whether specific types of MH need are associated with higher likelihood of utilizing services. We argue that to meet MH need in young Latino children of immigrants, teacher and/or mother reports of externalizing and/or internalizing problems should be associated with service utilization. This study's overall goal is to test whether this is the case in our community sample. A secondary goal is to document, for the first time in young Latino children, the degree of cross-informant (dis)agreement on mental health need between mothers and teachers. More specifically, our research questions and hypotheses are as follows:

**Research Question 1** What are the mental health utilization rates among young Latino children of immigrants with mental health need—defined as clinical levels of internalizing, externalizing, or total problems reported by mothers and/or teachers?

**Research Question 2** Does mental health service use vary depending on who—mother or teacher—is reporting the mental health need?

**Research Question 3** Does mental health service use vary depending on the type of mental health need reported—externalizing or internalizing problems? If so, is this true for both teachers' and mothers' reports?

**Research Question 4** Do reports of child mental health need correlate across adult reporters, mother and teacher?

In relation to Research Question 3, we hypothesize:

**Hypothesis 1** Children with externalizing psychopathology will be more likely to receive services when identified by their teachers than by their parents.

**Hypothesis 2** Children with internalizing psychopathology will be more likely to receive services when identified by their parents than by their teachers.

## Methods

### Participants

Children ( $n = 228$ ) were recruited from 15 elementary public schools with a high concentration of Latino immigrants in a large urban school district of the northeast United States. All schools were located close to major medical, academic, and community centers, in an area with one of the highest densities of MH training programs, MH professionals, and MH services in the country. Most schools provided some school-based MH services. Sociodemographics were consistent with characteristics of

Latinos in the northeast (US Bureau of the Census, 2000). Initial assessment took place in kindergarten between ages 5; 2–7; 0 ( $M = 6; 1, SD = 0; 5$ ). Children were initially selected from school enrollment lists based on child's Spanish home language and Latino ethnicity. Their caregivers were then sent an invitation letter explaining the study, followed by a phone call to confirm eligibility and participation. Eligibility was determined by strict inclusion/exclusion criteria. Table 1 details the sociodemographics of the sample. Children included were US-born, or arrived before age 4, and lived in Spanish-speaking homes; thus, they had minimal or no exposure to English before age three. At least one parent was born in Puerto Rico, Dominican Republic or other Latin American countries. Children with severe developmental disorders or lack of exposure to Spanish or English were excluded. The study was approved by an IRB and the school district. Mothers' and teachers' written informed consent was obtained. Data were collected by trained bilingual researchers from

primary caregivers (99 % biological mothers) at home and from teachers.

Thirty-nine kindergarten teachers reported on the children's emotional and behavioral problems. Twenty-five percent of these teachers identified themselves as being Latino and 39 % reported Spanish fluency. In terms of teachers' education, 55 % had a graduate degree and 14 % were enrolled in a graduate degree program. Teachers, on average, demonstrated a good understanding of best practices for teaching language minority students ( $M = 3.2; 1 = \text{poor}/4 = \text{best}$ ). All classrooms had students from English- and Spanish-speaking homes (Collins, O'Connor, Suárez-Orozco, Nieto-Castañón, & Toppelberg, in press).

## Measures

*Child Mental Health Need* was defined as clinical levels of emotional and behavioral problems as reported by (i) mothers completing the Child Behavioral Check List (CBCL) and (ii) teachers completing the Teacher's Report Form (TRF) (Achenbach & Rescorla, 2001). The CBCL has been widely used to characterize child MH need, including in young Latinos down to age 2 (Burns et al., 2004; Kataoka et al., 2002). The CBCL and TRF have well-established psychometric properties and parallel structures reflecting adults' observations of the child each in a different setting, home or school (Achenbach & Rescorla, 2001). For item scores, alpha coefficients range from .72 to .97, and test-retest reliability ( $r$ ) from .82 to .94 (CBCL) and from .60 to .96 (TRF) (Achenbach & Rescorla, 2001). The CBCL and TRF have acceptable reliability and validity in numerous cultures; they are also culturally valid and widely used in Latino populations, in which they correlate well, respectively, with parent and teacher perceptions of child MH need (Bird, 1996). MH need (i.e., "clinical levels of emotional and behavioral problems") was operationalized as  $T$  scores (a type of standard scores with mean = 50 and  $SD = 10$ ) above author-recommended clinical cutoffs = 63 for the 3 "broad-band" problem scales—internalizing, externalizing, and total. Internalizing scores (anxiety and depression problems), externalizing scores (aggressive, impulsive, and rule-breaking behaviors), and total scores (comprising internalizing, externalizing, and other problems) cover most important problem areas. Although CBCL-TRF clinical elevations are, at best, modestly sensitive for specific DSM diagnosis in some epidemiological studies (Bird, Gould, Rubio-Stipec, Staghezza, & Canino, 1991), they broadly overlap with larger DSM diagnostic groupings, making a clinical diagnosis more likely (Achenbach & Rescorla, 2001).

*Mental health service utilization* was determined with the Spanish version of the Service Assessment for Children

**Table 1** Sociodemographic composition of the cohort ( $N = 228$ )

	No.	% <sup>a</sup>
Gender = female	113	50
Living in poverty	196	86
Maternal education		
1. Some elementary	14	6
2. Completed elementary	70	31
3. Completed high school or GED	125	55
4. Completed college	19	8
Single parent	106	47
Primary caregiver		
Biological mother	225	99
Biological father or grandmother	3	1.3
Spanish is the only or main language spoken at home	228	100
Mother's place of birth		
Dominican Republic	119	52
Puerto Rico	48	21
El Salvador, Guatemala, and other Latin American countries	49	22
United States	12	5 <sup>b</sup>
Mother's lifetime percent resided in the United States		
US-born	12	5
More than 50 %	72	31
Less than 50 %	143	64
Mother's undocumented status	60	26
Children exposed to neighborhood violence	45	20

<sup>a</sup> Totals may not add to 100 due to rounding

<sup>b</sup> Per inclusion criteria, when the mother was US-born, the child's father was born in a Spanish-speaking country

and Adolescents (SACA) (Bean, Rotheram-Borus, Leibowitz, Horwitz, & Weidmer, 2003), a culturally valid parent questionnaire about lifetime and past-year child MH service use in 30 possible settings including inpatient/residential, outpatient, and school-based mental health services. The SACA is widely used in MH services research. Test–retest reliability has shown that parents report past-year mental health service use with fair-to-moderate reliability, for any service ( $\kappa = .55$ ), outpatient mental health services ( $\kappa = .55$ ) and school-based services ( $\kappa = .64$ ) (Alegria et al., 2004). Outpatient MH services include mental health centers or clinics, mental health professionals (psychiatrists, psychologists, and social workers), pediatrician or family doctor, partial hospitalizations or day treatment programs, and other non-school-based services. School MH services include counseling or therapy for emotional or behavioral problems in school, special help in the regular classroom, special classroom in a regular school, or a special school (Canino et al., 2002).

**Sociodemographics and Immigration.** Several questionnaires adapted from the MECA study (Goodman et al., 1998) were administered to mothers to describe the family and social contexts in which the child was embedded. These variables are listed on Table 1. *Single parenting* was determined by following the US Census definition of a “single parent household” as a household with only one parent living with the child. A “parent” is defined as a biological parent, a stepparent or a primary caregiver who is also the partner of a biological parent. Primary caregivers were defined as the person who knows the child best and is responsible for him or her. *Poverty* was defined as qualifying for government programs based on official poverty guidelines. Mothers completed an adaptation of the Survey of Exposure to Community Violence (Richters & Saltzman, 1990) to assess the child’s *exposure to neighborhood violence*, a five-item questionnaire covering whether the child knows about or has seen anyone being beaten or attacked, or has been around gangs or people shooting guns, etc.

### Statistical Analysis

Descriptive statistics of utilization percentage were performed on the sample of 228 children for any services, as well as for outpatient and school services. Children were classified based on the presence and type of MH need, yielding six dichotomous categories (corresponding to mother- and teacher-reported MH need based on their responses on internalizing, externalizing, or total problem scales); these categories are not mutually exclusive, as different types of MH need may co-occur on the same child. Service utilization percentages for children with MH

need were computed (Research Question 1, RQ1) and compared. Confidence interval estimation, as well as hypothesis testing involving comparisons of the associations of these utilization percentages across CBCL and TRF reports (RQ2 and RQ3), was performed using univariate and multivariate permutation tests (Edgington, 1995), a nonparametric alternative to the commonly used chi-square cross-tabulation statistics. Permutation tests are exact tests based on fewer assumptions than parametric alternatives, and they are generally more valid for small sample sizes, small cell counts, or when observations are not sampled at random (Edgington, 1995). Significance levels are reported with respect to the null hypothesis of no associations between utilization percentages and MH need based on the CBCL and the TRF (testing the association between MH need and service utilization). Multivariate permutation was used to test the association between reports of each type of MH need (separately for mothers and teachers), and service utilization (RQ3); this method was also used to compare the size of these two effects (Hypotheses 1 and 2). Equivalent univariate tests were then performed to assess the association between each type of MH need and service utilization, for both mother and teacher measures (RQ3). To test for correlations/agreement across MH need reporters (RQ4), bivariate Pearson ( $r$ ) cross-product correlations were computed. Alpha level was set at 0.05 for all tests.

## Results

### Descriptive Statistics

The descriptive data displayed in Table 1 illustrate the high risk nature of our sample. For instance, 86 % of the children were living in poverty, 47 % in single parent homes, and 26 % with mothers who were undocumented. In addition, 20 % were reported to have significant exposure to violence in the neighborhood. Mother reports, as displayed in Table 2, were obtained on all 228 children, while teacher reports were available for 185 children (81 %).

**Table 2** Prevalence of child mental health need by type as reported by teachers (left), mothers (center), and both (right)

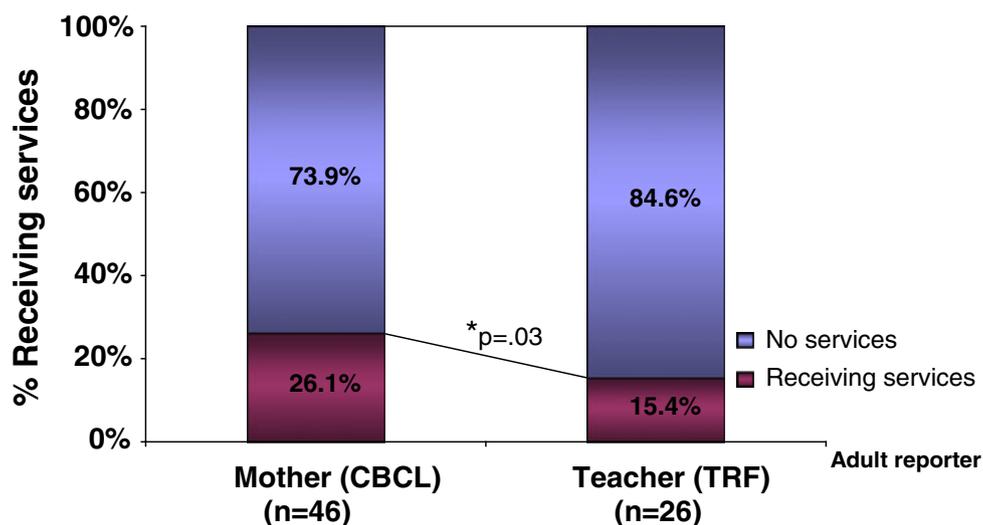
	Teacher reports <i>N</i> = 185 (%)	Mother reports <i>N</i> = 228 (%)	Convergent reports <i>N</i> = 185 (%)
Externalizing problems	10.9	14.1	3.3
Internalizing problems	4.9	13.2	0.5
Total problems	7.1	12.3	1.1

**Table 3** Children with MH need ( $n = 65$ ), by reporter and type: MH service utilization by service sector

Reporter	MH need type	Service received					Unmet MH need	
		<i>N</i> (%) All children	<i>N</i> (%) Outpatient	<i>N</i> (%) School	<i>N</i> (%) Outpatient and school	<i>N</i> (%) Any service	<i>N</i> (%) No service	
Any	Any MH need <sup>a</sup>	65 (100 %)	6 (9.2 %)	6 (9.2 %)	3 (4.6 %)	15 (23.1 %)	50 (76.9 %)	
Mother	Any MH need <sup>a</sup>	46 (100 %)	4 (8.7 %)	5 (10.9 %)	3 (6.5 %)	12 (26.1 %)	34 (73.9 %)	
	Externalizing problems	32 (100 %)	4 (12.5 %)	3 (9.4 %)	3 (9.4 %)	10 (31.3 %)	22 (68.7 %)	
	Internalizing problems	30 (100 %)	2 (6.7 %)	4 (13.3 %)	2 (6.7 %)	8 (26.7 %)	22 (73.3 %)	
	Total problems	28 (100 %)	2 (7.1 %)	4 (14.3 %)	3 (10.7 %)	9 (32.1 %)	19 (67.9 %)	
Teacher	Any MH need <sup>a</sup>	26 (100 %)	2 (7.7 %)	2 (7.7 %)	0 (0.0 %)	4 (15.4 %)	22 (84.6 %)	
	Externalizing problems	20 (100 %)	2 (10.0 %)	2 (10.0 %)	0 (0.0 %)	4 (20.0 %)	16 (80.0 %)	
	Internalizing problems	9 (100 %)	0 (.0 %)	1 (11.1 %)	0 (0.0 %)	1 (11.1 %)	8 (88.9 %)	
	Total problems	13 (100 %)	0 (.0 %)	2 (15.4 %)	0 (0.0 %)	2 (15.4 %)	11 (84.6 %)	
Both	Any MH need <sup>a</sup>	7 (100 %)	0 (.0 %)	1 (14.3 %)	0 (.0 %)	1 (14.3 %)	6 (85.7 %)	

Number of children receiving outpatient, school, or both outpatient and school mental health services in the past year, by mental health (MH) need and reporter. No inpatient or residential services were reported

<sup>a</sup> As different types of MH need often overlap in the same children (e.g., externalizing and internalizing problems), these are not mutually exclusive. As a result, the number of children under “Any MH need” is lower than the sum of children under each MH need type category. On 7 children, MH need was reported by both mother and teacher; 6 of these (85.7 %) did not receive services (see text)



**Fig. 1** Unmet mental health needs of young Latino children of immigrants. Bars represent 100 % of those children identified as having any type of mental health need (externalizing, internalizing, or total) by adult reporters, broken down into those who receive services (red portion) and those who do not (blue portion). Rates of mental

health (MH) services utilization were significantly higher for mother-reported than teacher-reported MH need (Research Question 2). Teacher reports of MH need were not associated with service utilization, while mother reports were (Table 5) (Color figure online)

Table 2 also lists the prevalence of MH need by type and reporter. Overall, teachers appeared to be less likely to report MH need, which was particularly salient for internalizing disorders (4.9 vs. 13.2 % according to mother reports).

Table 3 describes MH needs as reported by mothers and/or teachers, broken down by service sector utilized (outpatient, school). A MH need was reported in 65 children (28.5 % of the sample): 46 based on mother reports and 26 based on teacher reports, of which 7 children were

reported as having a MH need by both adults. Within reporter, the three types of MH need—total, externalizing, and/or internalizing—often co-occurred in the same child. When the MH need was reported by mothers, 26.1–32.1 % of children received services, while when the need was reported by teachers less than 20.0 % of children accessed services. Among children with MH need per mothers, roughly equal percentages received outpatient or school services, and some received both. Among children with teacher-reported MH need, none received both outpatient

**Table 4** Mental health service utilization in children with or without MH need reported by mother and teacher; effect of report of any type of MH need on utilization, and comparison of this effect across reporters

	MH need (%)	No MH need (%)	MH need versus No MH need
Mother	31, 27, 32	9,10,10	$p < .001$
Teacher	20, 11, 15	12,12,12	$p = .32$
Mother versus teacher	$p = .03$		

Multivariate permutation tests

Note: The three percentages in each cell of the central columns represent MH service utilization corresponding to children with and without each type of MH need; externalizing, internalizing, total problems. Right summary column compares service utilization rates between children with and without any types of MH need as reported by a single informant (test of association between service utilization and MH need). Bottom summary row compares service utilization rates in children with MH need reported by mother versus children with MH need reported by teacher (i.e., test compares associations between service utilization and MH need across reporters). Statistical tests performed using multivariate permutation tests (exact test)

**Table 5** Mental health service utilization: frequency and rates (%) among children with or without MH need of 3 types: externalizing, internalizing, and total problems; as reported by mothers (CBCL) and teachers (TRF)

	Mother					
	MH need		No MH need		All children	
	n/N	(%) [95 % CI]	n/N	(%) [95 % CI]	n/N	(%) [95 % CI]
<i>Teacher</i>						
Externalizing problems						
MH need	1/6	17 [1–58]	3/14	21 [6–47]	4/20	20 [7–40] <sup>b,c</sup>
No MH need	9/26	35 [19–53]	15/181	8 [5–12]	24/207	12 [8–16] <sup>b</sup>
All children	10/32	31 [18–47] <sup>a,c</sup>	18/195	9 [6–13] <sup>a</sup>	28/228	12 [9–17]
Internalizing problems						
MH need	0/1	0 [0–95]	1/8	13 [1–47]	1/9	11 [1–43] <sup>b,c</sup>
No MH need	8/29	28 [15–44]	19/189	10 [7–14]	27/218	12 [9–17] <sup>b</sup>
All children	8/30	27 [14–43] <sup>a,c</sup>	20/197	10 [7–14] <sup>a</sup>	28/228	12 [9–17]
Total problems						
MH need	1/2	50 [3–97]	1/11	9 [1–36]	2/13	15 [3–41] <sup>b,c</sup>
No MH need	8/26	31 [16–49]	18/188	10 [6–14]	26/214	12 [9–16] <sup>b</sup>
All children	9/28	32 [18–49] <sup>a,c</sup>	19/199	10 [6–14] <sup>a</sup>	28/228	12 [9–17]

Univariate permutation tests

n/N n utilizing services/N in cell

<sup>a</sup> Groups compared in test of main effect of maternal report:  $p = .001, .02, .003$ , respectively

<sup>b</sup> Groups compared in test of main effect of teacher report: NS, NS, NS, respectively

<sup>c</sup> Groups compared in test of differential effect of maternal versus teacher report:  $p = .08, .10, .06$ , respectively

and school services, and for MH need involving internalizing and total problems, no children received outpatient services. No inpatient or residential services were reported.

Research Questions and Hypotheses

*Research Question 1: Utilization Rates Among Young Latino Children of Immigrants with MH Need*

Among all children in the sample ( $n = 228$ ), 12.3 % utilized services in the prior year, of which 5.7 % were only

outpatient (mostly from a MH professional) and 5.3 % only school-based, while 1.3 % were both outpatient and school services; thus, 53.6 % of services received were school-based. No inpatient or residential services were reported. Among children with MH need ( $n = 65$ ), 50 (76.9 %) did not receive services. Specifically, 34/46 children reported by mothers (73.9 %), 22/26 of those reported by teachers (84.6 %), and 6/7 children reported by both (85.7 %) did not receive services (see Table 3). Hence, only a small fraction of children with MH need utilized services. Figure 1 displays unmet MH need by reporter.

### Research Question 2: The Effect of Reporter on Utilization Rates

Table 4 lists the rates of MH service utilization depending on who (mother or teacher) reported MH need. Children with MH need reported by mothers were more likely to receive services than those whose need was reported by teachers (multivariate permutation tests:  $p = .03$ ); teacher reports were not associated with service utilization in any of the analyses (multivariate permutation tests encompassing all types of need simultaneously, see Table 4; and univariate permutation tests for each type of mental health need individually, see Table 5). In contrast, mother reports of MH need were associated with service utilization (although the rates of service utilization were still low) in almost all analyses (see Tables 4 and 5). The smaller number of teacher reports could in theory lower the likelihood of significant findings. To consider this possibility, we performed post hoc power analyses of these tests. Using a  $p < .05$  false-positive level, we estimated that despite the lower sample size resulting from the lower number of teacher reports, multivariate permutation tests would still have more than 85 % power to detect differences in service utilization rates linked to teacher reports of MH need, if these differences were as high as those observed for mother reports.

Children with any type of mother-reported MH need were approximately three times more likely to utilize services compared to children without MH need (likelihood ratio between 2.6 and 3.4; 27–32 % vs. 9–10 %;  $p < .001$ ; see Table 4). In contrast, teacher reports of MH need were not associated with MH utilization, namely children with need were as likely to receive services as those without need ( $p = .32$ ). Of note, between 9 to 12 % of children with no MH need received services (see Tables 4 and 5).

### Research Question 3: The Effect of Type of Mental Health Need (Externalizing/Internalizing/Total Problems) and Reporter on Service Utilization

Univariate permutation tests listed in Table 5 revealed similar patterns for each type of MH need in which mother reports (but not teacher reports) were associated with service use. Children with any type (externalizing, internalizing, or total problems) of mother-reported MH need were more likely to utilize services than those without mother-reported MH need ( $p = .001$ ,  $.02$  and  $.003$ , respectively). In contrast, teacher reports' associations with service utilization were NS for each type of MH need.

**Hypothesis 1 and 2:** When comparing service utilization across reporters and types of MH need, there was a trend for children to receive services when MH need was

**Table 6** Cross-informant bivariate Pearson ( $r$ ) cross-product correlations between teacher and mother reports of problems

	Mother		
	Internalizing problems	Externalizing problems	Total problems
<i>Teacher</i>			
Internalizing problems			
Pearson $r$	0.12	0.062	0.122
Sig. (two-tailed)	0.104	0.403	0.101
$N$	183	183	183
Externalizing problems			
Pearson $r$	0.034	0.226**	0.212**
Sig. (two-tailed)	0.646	0.002	0.004
$N$	183	183	183
Total problems			
Pearson $r$	0.017	0.136	0.155*
Sig. (two-tailed)	0.815	0.067	0.036
$N$	183	183	183

\*  $p \leq 0.05$  (2-tailed)

\*\*  $p \leq 0.01$  (2-tailed)

reported by mothers and not by teachers ( $p = .08$ ,  $.10$  and  $.06$ , respectively). This trend is contrary to Hypothesis 1 (namely, it is mother reports of externalizing problems that are more strongly associated with service utilization than teacher reports;  $p = .08$ ) and consistent with Hypothesis 2 (namely, that mother reports of internalizing problems are more strongly associated with service utilization, not teacher reports;  $p = .10$ ).

### Research Question 4: Cross-Informant Correlations of MH Need

Table 6 lists cross-informant correlations between CBCL and TRF were NS for internalizing problems and low for externalizing ( $r = .23$ ;  $p \leq .01$ ) and total problems ( $r = .21$ ;  $p \leq .05$ ). This lack of convergence between teacher and mother reports is also illustrated in Table 2. As a result, very few children were reported to have a MH need by both the mother and the teacher.

## Discussion

The current mental health system in the United States has been described as inadequate to meet the needs of youth (Burns et al., 1995; New Freedom Commission on Mental Health, 2003). Our study provides additional evidence to support this claim, with 76.9 % of the young Latino children in our sample with a MH need (84.6 % if the need was reported by teachers) not utilizing services. To meet MH

need in young Latino children, teacher and/or parent reports of child MH need must be associated with MH service utilization. In our study, this is not the case, suggesting that it is unlikely that teacher and mother reports on MH need lead to services. The findings also suggest that adults do not share their views of the child and, therefore, do not work together on facilitating services. Teacher reports of child MH need were not associated with higher rates of service utilization; and the rate of school-based services was lower (53.6 %) than has been previously reported (70–80 %) (Rones & Hoagwood, 2000) and for neither mothers nor teachers was school MH service use clearly higher than outpatient MH service use. Collectively, these findings suggest that schools are not effectively leveraging MH services for these young Latino children.

While service utilization was higher, overall, in children reported by their mother as having a MH need, most of these children (73.9 %) still did not have their MH need met. Service utilization was associated with mother reports more strongly ( $p = 0.03$ ) than with teacher reports. Of interest, these patterns were similar for externalizing, internalizing, and total problems, failing to replicate prior findings suggesting that teachers' reports of externalizing problems are the strongest predictors of service referral (Stanger & Lewis, 1993) (rejecting Hypothesis 1 based on this literature), which suggests that even the most disruptive and visible behaviors reported by teachers in our sample did not lead to service use. Consistent with Hypothesis 2, mothers' reports of internalizing problems showed small but significant associations with service use, and this was also the case for externalizing and total problems.

Why are teacher reports not associated with receiving services? We can speculate about three possible types of barriers: (1) No access to services. Services do appear to be somewhat available in our study, yet when available, school MH professionals may be few, with their work being spread across multiple schools in the district. (2) Failing to see "emotional/behavioral problems" as a "mental health need," despite available services. This could be due to not viewing the child as impaired enough to warrant services, with services "reserved" for more school-disruptive cases, for example, in older children. Other potential barriers are fear of child stigmatization, lack of education in child mental health, or an inability to focus on an individual child due to a large classroom, multiple demands on the teacher, or language barriers. (3) "Mental health need" is perceived as such, but advocacy for referral does not occur, despite available services. This could result from pessimistic views or lack of knowledge about how to access services. Teachers may feel that it is not their responsibility to make a MH referral. Fears of stigmatization, or communication or cultural barriers with the child or parents, particularly when pursuing informed

consent, may also play a role. Because teachers and school staff have a unique role as developmental consultants to the family, any shortcoming when it comes to the MH of children will hinder early detection and services.

Why do mother reports have such low (if still significant) associations with service utilization? The three types of barriers discussed above potentially apply to mothers as well, but they are likely to occur in concert with overwhelming cultural, linguistic, and educational barriers that play a major role in the utilization gap. In addition, risk factors prevalent in this population and our sample are also potentially associated with low service referral and utilization. These include low maternal education, poverty, and undocumented status. Low maternal education may undermine understanding of needs and systems and communication with teachers. Poverty is associated with higher levels of family stress, extra jobs that limit schedule flexibility, lack of child care, and lack of health insurance, while undocumented status may lead to additional stress and, in addition, legal and employment concerns for the parents and fear of the educational and health systems. These factors in concert could contribute to low levels of service utilization.

Mother–teacher cross-informant agreement was low for externalizing problems, in contrast to a moderate association in the literature on children this age (Kerr et al., 2007), and nonsignificant for internalizing (Research Question 4), in contrast to low but significant associations in a prior study (Kerr et al., 2007). While this was not a systematic comparison, this lower level of mother–teacher cross-informant agreement raises the question of whether there is a connection with low MH service utilization. This lack of agreement may be the genuine reflection of children's behavioral expressions differing between home and school, and of different perceptions of the same behaviors by adults. Studies have suggested that cultural differences between teachers and parents may play a role (De Los Reyes & Kazdin, 2005), and the characteristics of teachers in the study (only 25 % Latino, only 39 % spoke Spanish) suggest a very different cultural background than that of the Latino parents. Such low levels of agreement are concerning, as they may also reflect lack of communication and other obstructing factors (see above), as well as parents and teachers not sharing their views of the child, ultimately leading to less advocacy on behalf of the youngster. This could eventually lead to a delay in service referral, diagnosis, and treatment.

## Limitations

While the smaller number of child reports by teachers compared to mothers could lead to a lower likelihood of

statistically significant findings, this is unlikely given: a) a direct test comparing the differences in utilization among children with MH need reported by mothers and those whose need was reported by teachers was significant ( $p = .03$ , Table 4) despite the more limited power of these analyses; and b) post hoc power analyses indicate that if the differences in utilization associated with teacher reports were as high as those associated with mother reports, our analyses would have had enough power (above 85 %) to detect these differences despite the lower number of teacher reports. A second possible limitation is that the SACA was administered only to mothers (the same adults whose reports of psychopathology were associated with service utilization) arguably resulting in same-reporter bias. However, the SACA is considered a reliable and unbiased measure of actual services received across settings and 53.6 % of the children received services at school (of which teachers should be aware), which should reduce the strength of any bias argument. Another limitation is that a single type of instrument (adult report) was used as an indicator of MH need. As a result, there could be other dimensions of MH need not captured by these reports. Other possible dimensions of MH need, such as symptoms of psychological trauma (e.g., due to exposure to community violence), may not be well captured by the CBCL and TRF. A significant portion of children with no apparent MH need (between 9 and 12 %) received services. And while we do not know the specific reasons, genuine psychological problems not captured by our measures could have led parents to seek services for their children.

## Conclusions

This work provides potentially useful insight into the unmet MH need of the fastest growing segment of the US child population, young Latino children of immigrant parents. These findings could be potentially useful for other at-risk immigrant child populations. School factors leading to disparities should be studied, with a focus on child MH awareness, the presence of biases and fears of stigmatization, and perceived and real barriers to making a successful referral to MH services, all within the school setting. Teacher–parent communication is often limited in the case of language minority families. The low levels of adult cross-informant agreement relative to prior reports on young children from community settings seem to attest to this lack of communication and cultural discrepancies. Mothers and teachers literally see the child in a radically different light, and this seems to be true even for children with the disruptive problems. While MH services in schools are viewed as a critical component in rebuilding our MH system for children (New Freedom Commission

on Mental Health, 2003; Stephan et al., 2007), our findings suggest that they are underutilized in this important at-risk group. Our study supports the view that well-integrated school-based MH services may encourage and facilitate teachers' MH identification and referral efforts, while also improving communication and cooperation between parents, teachers, and MH professionals.

**Acknowledgments** This research was supported by the US National Institute of Mental Health (K01 MH01947-01A2) and an Early Investigator Grant from the American Academy of Child and Adolescent Psychiatry (C.Toppelberg, PI, for both). The first author expresses his special gratitude to Stuart Hauser, MD, PhD (deceased), who provided him with inspiration, insight, and support over many years of work together. The authors also thank the teachers and schools that devoted time, energy, and space for the research; and very specially, the children and families for their generous support and participation.

## References

- Achenbach, T. M., & Rescorla, L. (2001). *Manual for the ASEBA school-age forms & profiles: Child behavior checklist for ages 6–18, teacher's report form, youth self-report: An integrated system of multi-informant assessment*. ASEBA.
- Alegria, M., Canino, G., Lai, S., Ramirez, R. R., Chavez, L., & Rusch, D. (2004). Understanding caregivers' help-seeking for Latino children's mental health care use. *Medical Care*, 42(5), 447–455.
- Alegria, M., Vallas, M., & Pumariega, A. (2010). Racial and ethnic disparities in pediatric mental health. *Child and Adolescent Psychiatric Clinics of North America*, 19(4), 759–774.
- Bean, D. L., Rotheram-Borus, M. J., Leibowitz, A., Horwitz, S. M., & Weidmer, B. (2003). Spanish-language services assessment for children and adolescents (SACA): reliability of parent and adolescent reports. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42(2), 241–248.
- Bird, H. R. (1996). Epidemiology of childhood disorders in a cross-cultural context. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 37(1), 35–49.
- Bird, H. R., Gould, M. S., Rubio-Stipec, M., Staghezza, B. M., & Canino, G. (1991). Screening for childhood psychopathology in the community using the child behavior checklist. *Journal of the American Academy of Child and Adolescent Psychiatry*, 30(1), 116–123.
- Burns, B. J., Costello, E. J., Angold, A., Tweed, D., Stangl, D., & Farmer, E. M. (1995). Children's mental health service use across service sectors. *Health Affairs (Millwood)*, 14(3), 147–159.
- Burns, B. J., Phillips, S. D., Wagner, H. R., Barth, R. P., Kolko, D. J., & Campbell, Y. (2004). Mental health need and access to mental health services by youths involved with child welfare: A national survey. *Journal of the American Academy of Child and Adolescent Psychiatry*, 43(8), 960–970.
- Canino, G., Shrout, P. E., Alegria, M., Rubio-Stipec, M., Chavez, L. M., & Ribera, J. C. (2002). Methodological challenges in assessing children's mental health services utilization. *Mental Health Services Research*, 4(2), 97–107.
- Collins, B. A., O'Connor, E., Suárez-Orozco, C., Nieto-Castañón A., & Toppelberg, C. O. (in press). Dual language profiles of Latino children of immigrants: Stability and change over the early school years. *Applied Psycholinguistics*.

- De Los Reyes, A., & Kazdin, A. E. (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin*, *131*(4), 483–509.
- Edgington, E. (1995). *Randomization tests* (3rd ed.). New York, NY: Dekker.
- Goodman, S. H., Hoven, C. W., Narrow, W. E., Cohen, P., Fielding, B., & Alegria, M. (1998). Measurement of risk for mental disorders and competence in a psychiatric epidemiologic community survey: The National Institute of Mental Health Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) study. *Social Psychiatry*, *33*(4), 162–173.
- Hoagwood, K. E., Olin, S. S., Kerker, B. D., Kratochwill, T. R., Crowe, M., & Saka, N. (2007). Empirically based school interventions targeted at academic and mental health functioning. *Journal of Emotional and Behavioral Disorders*, *15*(2), 66–92.
- Kataoka, S. H., Zhang, L., & Wells, K. B. (2002). Unmet need for mental health care among U.S. children: Variation by ethnicity and insurance status. *American Journal of Psychiatry*, *159*(9), 1548–1555.
- Kerr, D. C., Lunkenheimer, E. S., & Olson, S. L. (2007). Assessment of child problem behaviors by multiple informants: A longitudinal study from preschool to school entry. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *48*(10), 967–975.
- New Freedom Commission on Mental Health. (2003). *Achieving the promise: Transforming mental health care in America*. Rockville, MD: Final Report.
- Polanczyk, G., de Lima, M., Horta, B., Biederman, J., & Rohde, L. (2007). The worldwide prevalence of ADHD: A systematic review and meta-regression analysis. *American Journal of Psychiatry*, *164*(6), 942–948.
- Richters, J. E., & Saltzman, W. (1990). *Survey of children's exposure to community violence: Self-report*. National Institute of Mental Health.
- Rones, M., & Hoagwood, K. (2000). School-based mental health services: A research review. *Clinical Child and Family Psychology Review*, *3*(4), 223–241.
- Stanger, C., & Lewis, M. (1993). Agreement among parents, teachers, and children on internalizing and externalizing behavior problems. *Journal of Clinical Child Psychology*, *22*(1), 107.
- Stephan, S. H., Weist, M., Kataoka, S., Adelsheim, S., & Mills, C. (2007). Transformation of children's mental health services: The role of school mental health. *Psychiatric Services (Washington, DC)*, *58*(10), 1330–1338.
- Thompson, R., & May, M. A. (2006). Caregivers' perceptions of child mental health needs and service utilization: an urban 8-year old sample. *Journal of Behavioral Health Services & Research*, *33*(4), 474–482. doi:10.1007/s11414-006-9021-7.
- Toppelberg, C. O., & Collins, B. (2010). Language, culture, and adaptation in immigrant children. *Child and Adolescent Psychiatric Clinics of North America*, *19*(4), 697–717. doi:10.1016/j.chc.2010.07.003.
- U. S. Bureau of the Census. (2000). *2000 Census of population*.
- Vega, W., & Lopez, S. (2001). Priority issues in Latino mental health services research. *Mental Health Services Research*, *3*(4), 189–200.
- Wood, P. A., Yeh, M., Pan, D., Lambros, K. M., McCabe, K. M., & Hough, R. L. (2005). Exploring the relationship between race/ethnicity, age of first school-based services utilization, and age of first specialty mental health care for at-risk youth. *Mental Health Services Research*, *7*(3), 185–196.