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Ethnic Differences in Perceived Impairment and Need for Care

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Abstract

Latino children in the U.S. have high rates of unmet need for mental health services, perhaps due to biased perceptions of impairment and need for care by parents and providers. We tested this argument using an experimental vignette design. Vignettes described children with problems that varied on severity (mild vs. serious), nature of the problem (internalizing vs. externalizing), as well as gender and ethnicity (Latino vs. Anglo). Raters were Latino and Anglo parents (N=185) and providers (N=189). Vignettes with Latino names were viewed as more impaired by both parents and providers, and this effect was significantly stronger in Latino vignettes with less severe problems. Severity and Latino features of vignettes also interacted with judgments of need for service. At higher severity, vignettes with Anglo names were judged to need service more than vignettes with Latino names, despite the same judged levels of impairment. Results are discussed in the light of the unmet need for Latinos.

Keywords

Vignette methodology; ethnicity research; mental health services; and impairment

Latino children living in the United States have the highest rates of unmet need for mental health services compared to white children (Hough et al., 2002; Kataoka, Zhang, & Wells, 2002; Yeh, McCabe, Hough, Dupuis, & Hazen, 2003). Similar results are found when comparing island Puerto Rican children to non-Latino children from three US mainland communities (Flisher et al., 1997; Leaf et al., 1996). It has been hypothesized that the same factors that initially inhibit Latinos from becoming engaged in mental health services continue to operate after treatment with the effect of lowering the retention rate (Alegría et al., 2008; Dworkin & Adams, 1987). This underutilization of mental health services by Latino children cannot be explained by lower need, as there is epidemiological evidence that prevalence of mental health disorders, levels of severity and functional impairment of Latino youth are comparable to non-Latino white youth (Canino & Roberts, 2001; Canino et al., 2004; Garland et al., 2005; Roberts, 2000). Yet, there is little understanding of the factors

that may explain this disparity in service use for both island Puerto Rican and mainland Latino children.

One possible explanation is that attitudes towards mental health care may vary across ethnic groups, both among parents and providers. For example, Roberts, Alegría, Roberts, and Chen (2005a) suggested that a lack of parental recognition of the child's mental health problems may contribute to explaining underutilization of mental health services in Latino children. Roberts and colleagues (2005a) compared non-Latino white, Latino (mostly Mexican American) and African American parents' perception of their adolescents' mental health problems, and life satisfaction. Even after adjusting for clinical need profile of the child, child's level of impairment, and sociodemographic characteristics of the parents (age, gender and education level), minority parents rated their adolescents' mental health and life satisfaction as better than their non-Latino white counterparts. Minority parents overall perceived fewer emotional or behavioral problems in their children, as compared to non-Latino parents with the same level of need for care. The authors concluded that parents' ethno-cultural background might affect both their interpretation and response to their children's mental health symptoms.

Nevertheless, recognition of a problem is not enough. Following recognition of the problem, parents must conclude that the child can benefit from mental health service. This is the most significant factor associated with service use in all populations (Horwitz, Leaf, Leventhal, Forsyth, & Speechley, 1992). There is some evidence that the transition from problem recognition to intention to bring the child to treatment may be especially difficult for internalizing disorders, and that disparities may be especially large for these disorders (Gudiño et al., 2009). Low-income and mainland Hispanic youth bear a disproportionate burden of both anxiety and depression compared with high-income and non-Hispanic white children (Essau, Conradt et al., 2002; Goodman, Schwab-Stone et al., 2000; Roberts, Ramsay-Roberts, & Xing, 2006; Twenge, & Nolen-Hoeksema, 2002), and although Latino youths have the highest rate of suicide attempts, they are also less likely to be identified by a primary care physician as having a mental disorder (Katoaka et al., 2002), or to receive services for their mental health problems than children and youth of other ethnic groups (Masi & Cooper, 2006). Therefore, the study of mental health services for Latino youth warrants the differentiation of patterns of disparities for internalizing versus externalizing symptoms.

There is also some evidence that the ethno-cultural background of providers might affect their assessments of children (Bird et al., 1996; Bird et al., 2001; Wu et al., 2001). Island Puerto Rican providers have been found to be less likely to rate children as impaired compared to mainland providers (Bird et al., 1996). Bias or inconsistency in the assessment of a mental health disorder poses a potentially serious problem for effective clinical practice and service delivery. Decades of service use research document that the ethnicity or race of the client is associated with diagnoses and rates of psychiatric service use (Lopez, 1989; Neighbors, Trierweiler, Ford, & Muroff, 2003; Snowden, 2003). These findings have contributed to the growing uncertainty about whether differential base rates in diagnosis by race or ethnicity are due to biased judgments (Alegría & McGuire, 2003; Kataoka et al., 2002; Schulman & Hammer, 1988). However, there is no research that examines whether non-Latino white providers as compared to Latino providers are more likely to rate children with comparable impairment or need, with a higher level of severity, or whether this perception of severity is influenced by ethnicity. Studying the interplay between characteristics of the clinician and the race/ethnicity of clients could also shed some light on some of these issues and improve the accuracy of diagnostic decision making.

One reason that so little is known about the attitudes of different groups toward symptom recognition and treatment recommendation is that the apparent attitudes are typically confounded with the social context of the adults expressing the attitude. In many cases ethnic minorities live in economically disadvantaged communities where disparities in the receipt of children's mental health services may be attributable to a number of practical or attitudinal barriers (Slade, 2004). Thus, if parents or providers from contrasting groups have different attitudes, it is difficult to know the source of the differences. Therefore, to look at attitudes without confounding from natural contexts, we employed a vignette study design, which allowed us to manipulate the perceived ethnicity of hypothetical youth who are described as having serious or mild mental health problems, with internalizing or externalizing features. To examine the utility of this design, we asked select groups of parents and providers to assess whether the youths described in the vignettes: had mental health problems, whether they needed services or whether they needed medication, for perceived problems. The parents were selected from mental health treatment centers in Puerto Rico and the mainland U.S. to be sure that they would have a clear idea about available mental health services for children. Providers were also recruited from both Puerto Rico and the U.S. mainland, and some were Latino and others were non-Latino.

If group differences in attitudes can help explain the service disparities of Latino children, we expect: a) that Latino parents and Latino providers will rate vignettes with less severity and need of mental health service than non-Latino parents and providers, b) that this differential rating of vignettes as less severe will be even more noticeable for vignettes that named Latino children, and c) that the ratings of need for mental health services between Latino and non-Latino parents will differ depending on the nature of the symptoms (internalizing vs. externalizing). We expect Latino parents to rate internalizing symptoms as less in need of service than non-Latino parents.

Methods

Design Overview

We developed vignettes that described youth who varied systematically in terms of ethnic background, gender, nature of possible problem (internalizing vs. externalizing) and severity of the problem (mild vs. serious). After crossing these features in a 2*2*2*2 design, we had 16 vignettes. We developed two additional calibration vignettes that either had no psychological problem or had an extreme level of severity. Parents and providers were both asked to rate six vignettes – the two calibration vignettes plus four experimental vignettes. We used an incomplete block design on the vignettes to provide a balanced representation of the sixteen possible vignette permutations and the set of four vignette patterns represented all possible permutations. This balanced design allows the main effects of the four vignette factors to be estimated using both within and between rater variation, but interactions among the factors were estimated primarily based on between-rater variation. We examined the effect of varying four aspects of the vignettes on perceptions of impairment and need for services by parents and by providers.

Sample and Procedure

The parents in this study were recruited from outpatient child and adolescent mental health clinics where they had brought their own child for treatment. We used this source of parents because they were likely to be conversant about problems that children face and were familiarized with the possibility that treatment was available for childhood mental health problems. Three different groups of parents of children in the 9 to 17 age range were recruited: 1) Parents in Puerto Rico (n=63), 2) Latino parents in Boston, MA (n=65), 3) Non-Latino parents in Boston (n=57). Over 90% of all parents who were approached agreed

to participate. They were paid \$30 for their participation. Interviewers in Boston were half of Latino ethnicity and half of Anglo ethnicity; all were bilingual. Parents in Boston were given a choice of interview in either language, 23% of the parents in the Latino sample choose English as their language of preference for the interview. Table 1 summarizes the characteristics of parent participants from each site. Non-Latino white parents were older, more educated, mostly married and higher economic status than their Latino counterparts. These differences are adjusted in analyses of vignette ratings.

Providers were recruited in several ways. First, we invited 320 mental health providers who belonged to professional mental health or service organizations to participate via mailed surveys and 82 responded. This method yielded 43% of the provider sample. Second we approached attendees at national professional meetings. Finally, we asked provider participants to refer to us other colleagues as potential participants. Of those who were contacted personally approximately half responded. These recruitment efforts led to three provider groups: 1) Mental health providers recruited in Puerto Rico (n=69), 2) Latino providers recruited in various locations in the US (n=53), and 3) Non-Latinos providers recruited in the US (n=67). Table 2 summarizes the characteristics of provider participants. Almost 90% of non-Latino white providers recruited in the US reported serving Latino children in their practice. The provider groups differed from each other only in terms of the distribution of professional training; more Non-Latino providers were social workers, whereas more providers from Puerto Rico were psychiatrists. Adjustments for this variable are made in the analyses of vignettes.

Because the literacy of many of the parents was unknown, we had trained interviewers carry out face to face interviews. Vignettes and questions were presented on paper and read to each parent. Parents were also given the opportunity to additionally read the vignettes on their own. Interviewers recorded all responses. Interviewers were all female and had on average a masters degree in psychology or a related field.

Vignette Development

Our goal was to develop eight vignettes that represented two varieties of internalizing disorder (depression and social phobia) and two varieties of externalizing disorder (ADHD and ODD) and that varied from mild to serious in severity. In addition we developed two calibration vignettes that defined the rating poles. One was a mixture of internalizing and externalizing with severe impairment and the other was no disorder with no impairment.

We approached this goal with a two step process. The first step employed a group of four expert child clinicians, and the second step used a separate panel of 16 experts to rated impairment of the vignettes using the Children's Global Assessment Scale (C-GAS); the reliability of the average severity rating was .99. From the draft vignettes written by the first group we selected one from each of the four disorder groups (depression, social phobia, ADHD and ODD) that met our definition of mild severity, which was that it received an average C-GAS score in the range 70 to 51. This range refers to children who have "*some problems*" - most people who do not know the child very well would not notice the problems, but the people who know the child will be concerned; or children who have "*some noticeable problems*" - in some situations the problems are noticeable to anyone, but in other situations the child seems fine. We also selected from the draft vignettes one from each of the four disorders that met our definition of serious, which was that it received a C-GAS score in the range 31 to 50. C-GAS specifies that the 50 to 31 range includes children who have "*obvious problems*" - several problems that cause trouble in most situations, at home, at school, or with friends; or one very disruptive problem, or children who have "*serious problems*" - very seriously disturbed at home, at school, with peers, and/or with society at large, major functional impairments and unable to function in some situations

(Shaffer et al., 1983). We required that the calibration vignette of a normal child have a C-GAS rating in the range 100-81 and the severe calibration vignette have an average C-GAS rating of 30 or less. The average of the C-GAS scores for the mild vignettes was 62.1 and for the serious it was 38.7. The severity of the internalizing and externalizing disorders was also comparable, 50.37 for internalizing and 50.44 for externalizing.

After selecting vignettes to represent two levels of severity for each of the four disorders, we created variation in gender and ethnicity by using two names of each gender that are common in English and Spanish. These were Ann/Anna, Mary/Maria, Michael/Miguel and John/Juan. Each gender name was described as younger (7, 8) or older (11, 14) and the ages were balanced over ethnicity. For the calibration vignettes, we chose names that are common in both Anglo and Latino cultures with the same spelling: David for the severe vignette and Angela for the normal vignette.

The vignettes were developed in English and translated into Spanish by an independent translator, and then reviewed by a group of mental health researchers. Translation protocols used were similar to those that have been used for the translation of diagnostic instruments (Matias et al., 2003; Canino & Bravo, 1994). The process involves translation by a bilingual team of professionals, and back translation to assure the translated version retains the original meaning. The complete set of vignettes in both languages is available by writing the senior author.

We used an incomplete block design to provide a balanced representation of the vignette content in a block of four vignettes that were rated by each participant. Each block had one instance of each name stem (e.g. Ann/Anna) and one age, but two instances of internalizing (depression, social phobia) and two instances of externalizing (ADHD, ODD). Half of each type of disorder, and half were mild and half were serious. This resulted in blocks that were balanced in terms of contrasts between the four factors (gender, ethnicity, nature of symptoms, and severity of symptoms) as well as name stem and age. The between-person design was balanced with respect to the order of presentation of vignettes and the order of presentation was randomized across participants (both parents and providers).

Measures

Parents and providers were asked to rate the vignettes with a series of Likert-type questions that addressed perception of impairment and need for services. These rating questions were adapted from ratings used by Roberts, Alegria, Roberts, and Chen (2005b) when investigating parents' perceptions of their adolescent's mental health problems. Respondents were asked how much the vignette child needed mental health services, how much of a problem did they think the child had in doing things with friends and in getting along with others, and how much they thought the child needed medication. Responses were recorded on 10 point scales that had anchor terms that ranged from low concern (1) to high concern (10). For example, perception of impairment was coded on a scale from 1= "not at all a problem", to 10= "very much a problem".

Analytic Strategy

Ratings were analyzed using generalized estimating equation (GEE) methods (Diggle, Liang, & Zeger, 1994), with the assumption that residuals from the repeated measures followed an exchangeable covariance pattern. The analytic model included dummy codes for within-person vignette variables (Latino vs. Anglo, female vs. male, internalizing vs. externalizing, and serious vs. mild severity), and quantitative and categorical codes for between-person variables. In addition to the ethnic group of the raters, adjustments were made for demographic group differences (gender, education, marital status, SES, and age for

parents; professional training for providers) and for the tendency to use higher or lower levels of the rating scale. This latter tendency was adjusted using the rating that was made on the anchor vignette that described severe psychopathology. Analyses were conducted using the GENMOD procedure of SAS version 9.1 (SAS Institute, Inc., 2003).

We carried out main effects analyses in parents and providers separately, and then we explored interactions between vignette ethnicity and the other three vignette factors (severity, type of disorder and child's gender). We also explored interactions between vignette ethnicity and ethnicity of parents or providers. Interactions for ethnicity and severity were considered primary hypothesis to the proposed study. Omnibus tests of parent and provider ethnic group differences were tested using large sample chi square tests based on Type III score statistics. For parent analyses we adjusted for age, education and income, and for provider analyses we adjusted for professional specialty.

Results

Parent Ratings

The GEE analysis provides a description of the 2×2×2×2 vignette factorial design (serious vs. mild condition, male or female youth, Latino vs. Anglo youth, internalizing vs. externalizing symptoms) while taking into account that raters judged only four vignettes each. Table 3 provides a summary of findings from the parent ratings for three sets of judgments: a) whether the vignette child was socially impaired, b) whether the child should be referred to treatment, and c) whether the child might benefit from medication therapy. In the top portion of the table we present results from a main effects model, which describes the average effects of gender, ethnicity, severity and psychopathology type variation in the vignettes. The intercept describes the average rating for the reference vignette (male, Anglo youth with mild externalizing symptoms) and the main effects describe average contrasts of the ratings across serious vs. mild, internalizing vs. externalizing and so on. In the bottom portion of the table we present results from models that include interaction terms. The interactions effects are essentially contrasts of contrasts, showing for example how the Latino effect differs across levels of symptom severity.

Severity, gender and psychopathology type—Illustrating a kind of manipulation check, all three ratings varied with the described severity of the problems: youth who were described to have more severe behavior problems were judged to be more impaired ($b(se)=1.46(0.18)$), more in need of service ($b(se)=1.48, se=0.16$) and more in need of medication ($b(se)=1.45(0.20)$) than youths who were described to have less severe problems. In addition, females were rated to be less in need of medication than males described with exactly the same problems ($b(se)=-0.58(0.24)$), and there was a similar statistical trend observed for need of service ($b(se)=-0.30(0.18)$, $p<.10$). Children described as having internalizing problems were also viewed as being less impaired ($b(se)=-1.35(0.18)$), less in need of service ($b(se)=-1.56(0.15)$) and less in need of medication ($b(se)=-2.13(0.16)$) than children with externalizing problems. These effects were observed in spite of the fact that the internalizing vignettes were carefully matched to be equal in severity to the externalizing vignettes.

Ethnic Variation of Vignette Youths—Contrary to our hypothesis, youths with Spanish names were rated as having more impairment than those with English names (e.g. Carlos vs. Carl) ($b(se)=0.46(0.20)$), and there were no reliable effects for need of service (95% CI: $-0.28, 0.37$) or need for medication (95% CI: $-0.41, 0.41$). The confidence bounds of these two effects suggest that the data are consistent with small effects in both the predicted and opposite directions. We did find evidence, however, of interactions between vignette

ethnicity and severity for both impairment ($z = 3.76, p < 0.001$) and need of service ($z = 4.18, p < 0.001$). As shown in Figure 1 Panel A, the tendency for Latino vignettes to be viewed as more impaired was due to high impairment ratings for Latino vignettes in the mild impairment condition. Whereas the Latino effect was significant in the mild impairment condition ($z = 3.60, p < 0.001$), it was not significant in the serious impairment condition ($z = 0.43, p = 0.66$). Panel A also reveals that severity of symptoms had little impact on ratings of persons with Spanish names. Panel B shows the comparable interaction for ratings of need for service. Similar to Panel A, the slope for severity is steeper for Anglo names than Spanish names, but the direction of differences between Spanish and English names varied from mild to serious severity. Among vignettes representing mild severity, the Latino vignettes were rated to be slightly more in need of service, although this was not significant ($z = 1.61, p < 0.11$). Consistent with our original hypothesis, among vignettes representing serious severity, those with Latino names were rated to be less in need of service than those with Anglo names ($z = -2.59, p < 0.01$).

Tests of Ethnic Group of Parent Raters—There was no evidence that different parent groups (Puerto Ricans in PR, Latinos in Boston, or Non-Latinos in Boston) rated youths described in the vignettes as systematically more or less impaired ($\chi^2(2) = 1.32, p = 0.52$), in need of service ($\chi^2(2) = 2.94, p = 0.23$), or in need of medication ($\chi^2(2) = 1.08, p = 0.58$). We also did not find any evidence that parent ethnic group interacted with the vignette ethnicity (results not shown, but available from authors). All of the parents tended to give relatively high ratings for social impairment and need for service. A significant interaction was observed between parent ethnic group and type of psychopathology. Latino parents, both US and Puerto Rican rate greater social impairment ($\chi^2(2) = 6.63, p = 0.04$), need for mental health services ($\chi^2(2) = 7.91, p = 0.02$) and medication ($\chi^2(2) = 6.41, p = 0.04$) for vignettes describing externalizing vs. internalizing symptoms.

Effects of adjustment variables—Because the three parent ethnic groups differed on gender, education, marital status, SES, and age, adjustments were made for these variables when analyzing the average vignette ratings. We also adjusted for rater's use of the scale as indicated by the rating of a severe calibration vignette. For ratings of impairment, only age ($\chi^2(2) = 6.54, p < 0.05$) and calibration ($\chi^2(1) = 12.85, p < 0.001$) were significant, with older parents rating vignettes as more impaired. For need for service, age ($\chi^2(2) = 10.96, p < 0.005$) and marital status ($\chi^2(2) = 6.12, p < 0.05$) were significant. Older parents rated vignettes as needing more service, as did divorced/separated/widowed parents. For medication need, education ($\chi^2(1) = 4.64, p < 0.05$) and calibration ($\chi^2(1) = 15.84, p = 0.001$) were significant. Parents with less than high school diplomas were more likely to rate vignettes as in need of medication.

Provider Ratings

Table 5 presents analogous results for provider reports, with the top portion of the table presenting the model for main effects and the bottom portion presenting results from models that include interaction terms.

Severity, gender and psychopathology type—Like the parents, providers attended to the severity of the vignettes. Vignettes that were constructed to be serious in severity were rated to be more impaired ($b(se) = 1.84 (0.15)$), more in need of service ($b(se) = 1.43, se = 0.13$) and more in need of medication ($b(se) = 1.36 (.21)$) than the mild severity vignettes, and these differences were similar in magnitude to the effects reported above for parents. Also like the parents, females were rated to be less in need of service ($b(se) = -0.28(0.13)$) than males described with the same exact problems, and children described as having internalizing problems were viewed as less impaired ($b(se) = -0.62 (0.14)$), less in

need for service ($b(se) = -0.65(0.12)$) and less in need for medication ($b(se) = -1.73(0.14)$). Again, these effects were seen even after precise matching of severity between internalizing and externalizing vignettes.

Ethnic Variation of Vignette Youths—Similar to the parents, providers consistently rated Latino vignettes as being more impaired ($b(se) = 0.97(0.13)$) than identical vignettes with Anglo names. Providers also rated Latino vignettes to be more in need of service ($b(se) = 0.45(0.12)$), but not different in their need for medication (95% CI: $-0.44, 0.37$). Again like the parents, the vignette ethnicity effect interacted with severity for both impairment ($z = 9.80, p < 0.001$) and need of service ($z = 6.78, p < 0.001$), and the patterns of the interaction replicated what was found with parent raters. Panel C Figure 1 shows that vignettes with Spanish names were rated by providers to be more impaired in the mild severity condition ($z = 9.06, p < .001$) but not in the serious severity condition. Consistent with the effects for parents, the ethnic effect for need for service changed sign as severity moved from mild to serious (see Panel D). For vignettes with mild severity Latinos were judged to be more in need of service ($z = 3.24, p < 0.005$) whereas for serious severity Latinos were judged to be less in need ($z = -2.47, p < .02$).

In addition to the interactions with severity, we found evidence of an interaction between type of psychopathology and vignette ethnicity with regard to social impairment ratings ($z = 4.07, p < 0.001$). Even after adjusting for severity, the vignette ethnicity effects were smaller for internalizing disorders than for externalizing disorders (Panel E).

Tests of Ethnic Group of Provider Raters—The two groups of Latino providers (PR and US mainland) had similar mean ratings for the three sets of judgments and were therefore combined in the analyses for Table 5. No significant differences were observed between Latino vs. Non-Latino providers ratings for youths described in the vignettes as impaired ($\chi^2(2) = 2.64, p = 0.10$), or in need of service ($\chi^2(2) = 0.05, p = 0.82$). A trend was observed for Latino providers to rate less need of medication than non-Latino providers ($\chi^2(2) = 3.06, p = 0.08$). Similar to parent findings, we did not find any evidence that provider ethnic group interacted with the vignette ethnicity or that provider ethnic group interacted with type of psychopathology (results not shown, but available from authors).

Effects of adjustment variables—Because the provider ethnic groups differed on professional training, adjustments were made when analyzing the average vignette ratings. We also adjusted for rater's use of the scale as indicated by the rating of a severe calibration vignette. No differences were observed in ratings of social impairment. Psychiatrists gave significantly higher ratings for need for service and need for medication, than social workers ($\chi^2(2) = 15.14, p < 0.001$) and ($\chi^2(2) = 16.37, p < 0.001$) respectively. Psychologists did not differ from social workers in their rating for these latter two judgments.

Discussion

In contrast to our expectations, both parents and providers rated vignettes that mentioned Latino names to be more impaired and in need of service than the same vignettes with Anglo names. This effect, however, was concentrated in the mild severity condition. In fact, the severity manipulation had little effect on vignettes with Spanish names, whereas it had consistent effects for children with Anglo names in both parent and provider groups. The pattern of results, which was shown in Figure 1, revealed that parents and providers both perceived Latino and Anglo children with severe problems to be equally impaired. This similarity in perceived impairment among Latinos and Anglos with serious severity was in sharp contrast to perceptions of need for service. Latinos with a more severe condition were judged as *less* in need of service than identical vignettes with Anglo names and serious

severity. This result is congruent with the now well documented underutilization of mental health services for Latino children. By assigning significantly lower need of services to Latinos children in contrast to Anglo children who were previously judged to be equal in impairment, parents and providers show a pattern of judgments that would lead to unmet need.

The overall pattern of results are striking, especially when viewed together: a) Parents and providers view children with mild problems as more impaired if they are Latinos, and b) Latino children with more severe problems are less in need of services if they are impaired. It seems unlikely that our participants would endorse these statements explicitly, since they appear to be inconsistent. One might think that such inconsistent beliefs could be due to unfamiliarity with mental health service systems, but this explanation can not apply here. The providers are clearly experts in mental health, and the parents are all persons who have brought their own children to a mental health treatment center. How is it that they could have these beliefs for generic children described in vignettes?

It is possible that the results arose from implicit forms of prejudice and stereotypes that can operate without conscious intent or awareness (Devine, 2001; Green et al., 2007; Greenwald & Banaji, 1995). Even those who explicitly renounce prejudice can have automatic biases that may be activated spontaneously from memory, without the perceiver's intent. Given that Latinos are underrepresented and often negatively stereotyped in stories related to crime and violence in the media (Rivadeneira, Ward, & Gordon, 2007), the depiction of the Latino child in the vignette could be laden with the unconscious bias of gravity and importance and might therefore influence a higher severity judgment. We did not include measures of implicit biases, such as the IAT (Greenwald, McGhee, & Schwartz, 1998), in this study but clearly this is a needed future direction.

The fact that Latino parents followed the same pattern as other parents assigning lower need for services to Latino children in the serious condition deserves special consideration. These caregivers, who are already engaged in a treatment plan for their own children, are likely to be aware of children's psychiatric symptoms. They may, however, be uncertain about the prognosis of treatment, especially for Latinos. Alegría et al. (2004) identified impairment as a diffuse signal to the caregiver, where they know "something is wrong" but do not know whether treatment would be beneficial. Accordingly, a caregiver's decision to seek care requires an awareness of the impact of symptoms on the child's functioning and a perceived benefit of mental health care.

A possible interpretation for provider judgments for impairment ratings might be related to patterns of disparity in service for Latino children. If mostly severe Latino children make it into treatment, this might lead practitioners to believe that Latino patients are generally more severe than Anglo patients, based on their biased sample of patients. Latino parents delay taking their children to services until their symptomatology is more severe. Therefore, providers might be rating Latino children as more impaired based on their own subconscious bias primed by prior clinical practice experience (Cohen & Cohen; 1984). Subconscious bias occurs when a person's membership in a target group automatically activates a cultural stereotype in the respondent's memory regardless of the level of prejudice (Devine, 2001). Why we would then also observe lower need for services for the Latino versus the Anglo child from providers, is of great importance and will require further investigation.

A result that replicated across all samples indicated that when the child was described as having an internalizing disorder, lower ratings were given for need for mental health services, medication and impairment. These findings emerged despite efforts to have the internalizing and externalizing vignettes balanced in terms of impairment. Our expert

research clinicians assigned an average C-GAS of 50.37 to the internalizing vignettes and 50.44 to the externalizing vignettes. We also found an interaction such that Latino parents rated greater need for services and medications, to externalizing symptoms when compared to internalizing symptoms of equal severity. In a prior epidemiological study in Puerto Rico, meeting criteria for a disruptive disorder appeared to be an important factor in predicting caregivers taking their children to mental health services, rather than school services (Alegría et al., 2004). The key was that the parent could identify behavior problems common to disruptive disorders as problems requiring professional mental health care. Teachers are possibly facilitators in this respect, in that disruptive disorders impact them directly and they might play an important role in informing the problematic behaviors to the parents, and in explaining potential consequences of such behaviors. In another study using race methodology to test teacher evaluations of student behavior, Chang and Sue (2003), found that teachers rated externalizing disorders significantly more serious and more likely to result in consultation and referral than internalizing conditions. Internalizing disorders such as depression or anxiety might only be identified by the child and not teachers or parents, explaining observations of lower ratings for these children.

In addition, we also found that parents saw girls as needing fewer medications, and providers assigning girls less need for mental health services than boys; a trend also observed in parents. Previous studies by our group have documented that boys used significantly more mental health services than girls (Cabiya et al., 2006) and that they also met the criteria for disruptive disorders at a greater rate than girls (Canino et al., 2004). Several investigators have hypothesized that boys are more likely to be referred for services because they exhibit higher rates of disruptive behavior and such behaviors are viewed as more difficult to manage by parents and teachers (Green, Clopton, & Pope, 1996; Zwaanswijk, van der Ende, Verhaak, Bensing, & Verhulst, 2003). Public policies should target the development of community resources such as parent education programs that identify internalizing problems that are more common in girls and difficult for parents, teachers and even providers to identify.

Limitations

There are several notable limitations to the inferences that can be made from our results. First, we assessed ratings of mental health severity and need using vignette methodology. Rating a vignette and asking about mental health concerns might be quite different than noticing those same symptoms described in everyday life. While this is a limitation, there are several studies that suggest that vignette information may still be valuable. Some reports support the use of case vignettes to assess clinical decision making by physicians (Jones, Gerrity & Earp, 1990; Schulman, Ohishi, Park, Glick, & Eusemberg, 1999). In two studies of the external validity of case vignettes, assessments made on the basis of written case descriptions correlated highly with those made on the basis of examinations of patients with equivalent symptoms seen in person (Kirwan et al., 1983a, 1983b). Vignettes also offset some other problems in obtaining information, such as social pressure to adjust explicit attitudes to follow norms and conventions. They also allow strict control of the amount and order of information provided about each hypothetical child. Nonetheless, we worried about how artificial the vignettes might seem. To provide an insight into the vignette rating process, we asked a sample of parents to complete open ended questions about what they were thinking when they were rating each vignette. Typically parents reported that the child depicted in the vignette reminded them of their own children or of others they knew.

Related to the possible artificiality of vignettes was a concern expressed by one reviewer that the placement of the child's name in the first vignette sentence could overstate the importance given to the ethnicity variable. The impact of the placement of **ethnic** information in the vignette is an empirical question that we can not address here, but we

believe that the child's gender and ethnicity would be among the first bits of information an adult (whether another parent or a provider) would perceive and thus the name conveying this information did have a prominent place in our design.

Another important limitation of the present report is that we collected judgments from a non-probabilistic convenience sample both for parents and providers. The parents had at least one child receiving mental health services. Although this focus assured us that parents would be knowledgeable about mental health symptoms or treatment, it clearly resulted in a sample that is not representative of all parents who might notice symptoms in their own child. While acknowledging that further research is needed with representative samples, we speculate that the ethnic effects observed in these parents who had overcome possible barriers to help seeking would be smaller than those observed with a representative sample of parents. Nevertheless, we recognize that probable differences exist between parents who have had personal knowledge with both the mental health system and with having their own child suffer from a mental illness in comparison to those that have not experienced either situation. Therefore an important extension of this study is to generalize the results to parents in general.

Similarly, the provider sample was not formally representative of all providers. Not only were there selection effects in the group that chose to provide data, the vast majority of our US provider sample provided services to Latinos as part of their practice. Would US providers that do not treat Latino children as part of their practice have the same severity rating for Latino child vignettes? This would be an informative question to pursue.

We also acknowledge as a limitation that Latinos are not a homogeneous group and that extending this study to other Latino nationalities i.e. Mexican-Americans, would be an added contribution. Therefore, future research with a population sample of providers and parents, with attention to demographic characteristics of both groups sampled will help address pending questions.

Clinical Implications and Conclusion

The goal of this research was to provide information about parental and provider attitudes towards Latino and Non-Latino children without confounding from natural contexts. Our results pinpoint a disconnect between ratings for impairment and the need for mental health services for Latino children. Among the vignettes describing most severe pathology, both parents and providers rated children with Latino names with less need for services. The size of these effects ranged from 0.79 for parents, to 0.58 for providers on a ten point scale. These would be considered small effects when compared to the overall variation of the need for service ratings according to the conventions of Cohen (1988). Nonetheless, this small bias can contribute to disparities when applied to large numbers of children, and it is a bias that can presumably be reduced by making persons aware and by formal training of practitioners. The potential threat from having these biases, especially with regard to providers, are that the activation could in turn result in an automatic self-fulfilling prophecy by leading to behaviors on the perceiver's part that are likely to be reciprocated in a stereotype-confirming manner (Chen & Bargh, 1997). Further research is needed to probe the source of these apparent biases and inform as to the possible consequences.

This study also provides strong evidence that suggests that parents and even providers have a difficult time recognizing internalizing symptoms, because they are less disruptive to others. Strategies that encourage the self-referral of these children to care should be contemplated as a means to decrease the underutilization of mental health services.

Developing public health intervention designed to guide and informs caregivers in order to link symptoms, severity and the benefits of mental health treatment are also encouraged.

High rates of unmet need, for Latino children have not only been previously documented in the literature, but can also be reproduced in an experimental study using vignette methodology. Our efforts should concentrate in moving forward to explain the reasons behind this disparity, in order to achieve our ultimate goal: an improvement in the existing gap between Latino and non-Latino children for mental health services.

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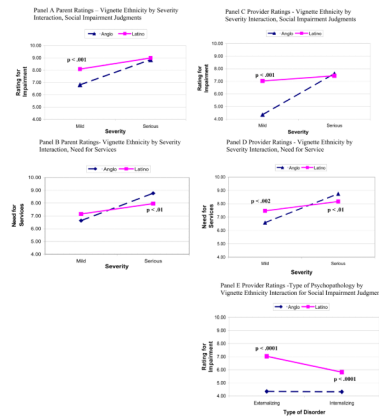


Figure 1. Five Panels of Interactions of Vignette Ethnicity with Social Impairment, Need for Service, and Type of Psychopathology for Parents and Providers
 Interaction plots showing how the effects of severity of disorder on ratings of impairment and need for service varied with vignette ethnicity for both parents and providers and how the effect of type of disorder on ratings of impairment varied with vignette ethnicity for providers.

Table 1

Demographic Characteristics of Parent Participants

Parent Characteristics	Puerto Rico				US			
	Latino N=63		Latino N = 65		Non-Latino N= 57			
	N	%	N	%	N	%	N	%
Gender*								
Male	2	3.17	5	7.69	10	17.54		
Female	61	96.83	60	92.31	47	82.46		
Education***								
≤ High school	36	57.14	38	58.46	12	21.05		
More than High school	27	42.86	27	41.54	45	78.95		
Marital Status***								
Never Married	11	17.46	19	29.23	3	5.26		
Married/Living as a couple	24	38.10	24	36.92	38	66.67		
Separated/divorced/widowed	28	44.44	22	33.85	16	28.07		
Economic Status***								
Live very well/comfortably	24	38.10	18	28.13	35	63.64		
Live from check to check	19	30.16	29	45.31	18	32.73		
Almost poor/poor	20	31.75	17	26.56	2	3.64		
Age***								
Up to 35 years	29	46.03	16	24.62	5	8.77		
36-45	21	33.34	35	53.85	22	38.60		
46 and above	13	20.63	14	21.54	30	52.63		
Place of Birth								
United States	4	6.45	13	20.00	50	87.72		
Puerto Rico	55	88.71	23	35.38	0	0		
Other Spanish Speaking Country	3	4.84	29	44.62	0	0		
Other Non-Spanish Speaking Country	0	0	0	0	7	12.28		

Child Characteristics

Parent Characteristics	Puerto Rico				US			
	Latino N=63		Non-Latino N= 57		Latino N = 65		Non-Latino N= 57	
	N	%	N	%	N	%	N	%
Age (Range 9–17 years)								
Mean (years)		11.74		12.50		12.50		12.66
Time in Mental Health Treatment								
Mean (years)		3.06		2.98		2.98		3.13

Note: Chi-square test for general association.

p ≤ .001

**
p ≤ .01

*
p ≤ .05

Table 2

Demographic Characteristics of Provider Participants

	Puerto Rico		US	
	N	%	N	%
Gender				
Male	21	30.88	15	28.30
Female	47	69.12	38	71.70
Occupation ***				
Child/Adolescent Psychologist	23	33.33	25	47.17
Child/Adolescent Psychiatrist	32	46.38	9	16.98
Social Worker	13	18.84	12	22.64
Other	1	1.45	7	13.21
Amount of children Service (per week)				
< 10 children/adolescents	24	35.82	23	43.40
Between 10 and 50 children/adolescents	31	46.27	27	50.94
Between 51 and 100	10	14.93	3	5.66
More than 100 children/adolescents	2	2.99	0	0
Service Latinos in Practice	-	-	52	98.11
Received Cultural Competency Training	-	-	48	90.57
Age				
26-35 years old	17	25.00	19	36.54
36-45 years old	17	25.00	16	30.77
46-55 years old	20	29.41	12	23.08
56+ years old	14	20.59	5	9.62
Place of Birth				
United States	4	5.80	13	25.00
Puerto Rico	60	86.96	8	15.38
Other Spanish Speaking Country	4	5.80	31	59.62
Other Non-Hispanic Speaking Country	1	1.45	0	0

Note: Chi-square test for general association.

*** $p \leq .001$,

** $p \leq .01$,

* $p \leq .05$

Table 3

Parent sample estimates for social impairment, need for services, and need for medication.

	Parent Ratings		
	Social Impairment	Need for Service	Need for Medication
Serious (vs. Mild)	1.46 (0.18)***	1.48 (0.16)***	1.45 (0.20)***
Female vs. Male	-0.13 (0.20)	-0.30 (0.18)	-0.58 (0.24)**
Latino vs. Anglo Vignette	0.46 (0.20)*	0.04 (0.16)	0.00 (0.21)
Internalizing (vs. Extern)	-1.35 (0.18)***	-1.56 (0.15)***	-2.13 (0.16)***
US Latino vs. PR Parents	-0.32 (0.32)	0.02 (0.31)	-0.37 (0.36)
US Non-Latino vs. PR Parents	-0.40 (0.38)	-0.54 (0.36)	-0.15 (0.40)
Intercept	7.41 (0.49)***	8.54 (0.45)***	6.38 (0.52)***
Interaction Model			
Serious (vs. Mild)	2.03 (0.23)***	2.14 (0.24)***	1.48 (0.26)***
Female vs. Male	-0.14 (0.26)	-0.20 (0.26)	-0.44 (0.32)
Latino vs. Anglo Vignette	1.28 (0.35)***	0.53 (0.32)	0.34 (0.37)
Internalizing (vs. Extern)	-1.12 (0.39)***	-2.08 (0.32)***	-2.30 (0.37)***
US Latino vs. PR Parents	-0.10 (0.34)	0.08 (0.32)	-0.48 (0.40)
US Non-Latino vs. PR Parents	-0.72 (0.40)	-0.96 (0.38)**	-0.60 (0.44)
Latino Vignette *gender	0.03 (0.36)	-0.21 (0.37)	-0.28 (0.44)
Latino Vignette *type of disorder	-0.53 (0.38)	0.59 (0.40)	-0.33 (0.44)
Latino Vignette *Severity	-1.14 (0.30)***	-1.33 (0.32)***	-0.06 (0.37)
Parent US Latino* type of disorder	-0.44 (0.45)	-0.13 (0.35)	0.20 (0.40)
Parent US Non-Latino* type of disorder	0.60 (0.42)	0.86 (0.35)**	0.87 (0.36)*
Intercept	7.01 (0.52)***	8.43 (0.49)***	6.38 (0.57)***

GEE estimates were adjusted for order of vignette, severe anchoring vignette, as well as gender, education, marital status, SES and age. Bold entries are significant (* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$)

Table 4

Provider sample estimates for social impairment, need for services, and need for medication.

	Social Impairment	Need for Service	Need for Medication
Serious (vs. Mild)	1.84 (0.15)***	1.43 (0.13)***	1.36 (0.21)***
Female vs. Male	0.13 (0.14)	-0.28 (0.13)*	-0.22 (0.26)
Latino vs. Anglo Vignette	0.97 (0.13)***	0.45 (0.12)***	-0.04 (0.21)
Internalizing (vs. Extern)	-0.62 (0.14)***	-0.65 (0.12)***	-1.73 (0.14)***
Latino Vignette vs. US Providers	0.31 (0.19)	0.05 (0.21)	-0.41 (0.24)
Intercept	5.13 (0.27)***	6.84 (0.27)***	5.21 (0.34)***
Interaction Model			
Serious (vs. Mild)	3.26 (0.21)***	2.16 (0.18)***	1.22 (0.26)***
Female vs. Male	-0.29 (0.23)	-0.34 (0.21)	-0.26 (0.34)
Latino vs. Anglo Vignette	2.68 (0.30)***	0.88 (0.27)***	-0.22 (0.37)
Internalizing (vs. Extern)	-0.03 (0.19)	-0.90 (0.18)***	-1.73 (0.20)***
Latino Vignette vs. US Providers	0.24 (0.19)	0.09 (0.21)	-0.41 (0.24)
Latino Vignette *gender	0.61 (0.33)	0.12 (0.27)	0.08 (0.37)
Latino Vignette *type of disorder	-1.18 (0.29)***	0.49 (0.27)	0.01 (0.35)
Latino Vignette *Severity	-2.85 (0.29)***	-1.46 (0.21)***	0.27 (0.29)
Intercept	4.35 (0.31)***	6.59 (0.29)***	5.30 (0.36)***

GEE estimates were adjusted for order of vignette, severe anchoring vignette, as well as professional training. Bold entries are significant $p \leq 0.05$; (***) $p \leq 0.001$; (**) $p \leq 0.01$; (*) $p \leq 0.05$.