Published in final edited form as:

Child Fam Behav Ther. 2015 ; 37(3): 208–223. doi:10.1080/07317107.2015.1071978.

Preliminary Validity of the Eyberg Child Behavior Inventory With Filipino Immigrant Parents

Dean M. Coffey, PsyD,

Keck School of Medicine, University of Southern California, Los Angeles, California, USA

Joyce R. Javier, MD, MPH, and

Keck School of Medicine, University of Southern California, Los Angeles, California, USA

Sheree M. Schrager, PhD, MS

Children's Hospital Los Angeles, Los Angeles, California, USA

Abstract

Filipinos are an understudied minority affected by significant behavioral health disparities. We evaluate evidence for the reliability, construct validity, and convergent validity of the Eyberg Child Behavior Inventory (ECBI) in 6- to 12- year old Filipino children ($N = 23$). ECBI scores demonstrated high internal consistency, supporting a single-factor model (pre-intervention $\alpha = .91$; post-intervention $\alpha = .95$). Results document convergent validity with the Child Behavior Checklist Externalizing scale at pretest ($r = .54, p < .01$) and posttest ($r = .71, p < .001$). We conclude that the ECBI is a promising tool to measure behavior problems in Filipino children.

Keywords

ECBI; Filipino; child behavior; validity

According to the 2010 Census, the Asian population grew faster between 2000 and 2010 than any other racial group in the United States (Hoeffel, Rastogi, Kim, & Shahid, 2012). Filipinos are the second-largest immigrant population in the U.S. and the largest Asian subgroup in California, yet are one of the least understood and researched groups related to health status and needs (Hoeffel et al., 2012; Javier, Huffman, & Mendoza, 2007; Rytina, 2009). They are increasingly referred to as an “invisible ethnic group” (Sanchez & Gaw, 2007) because they are more often aggregated with other Asian American ethnic groups in research studies (Dela Cruz, McBride, Compas, Calixto, & Van Derveer, 2002; Javier et al., 2007).

Filipinos are exposed to multiple adversities, including harsh discipline, severe maternal depression symptoms with rates similar to U.S.-born black mothers, immigration stress, loss of social status, and lower self-esteem due to discrimination, placing young children at risk for future behavioral and mental health problems (Huang, Wong, Ronzio, & Yu, 2007; Runyan et al., 2010; Sanchez & Gaw, 2007). U.S.-born Filipino youth exhibit higher rates of

behavioral health problems, such as substance abuse, depression, and suicide ideation; as well as for high risk behaviors resulting in elevated rates of adolescent pregnancy and HIV/AIDS infections (Javier et al., 2007; Javier, Lahiff, Ferrer, & Huffman, 2010). U.S.-born Filipino youth also attain significantly lower levels of education than their Philippine-born counterparts and other U.S.-born Asian American youth (Ogilvie, 2008). Despite these health disparities, Filipinos are especially unlikely to participate in mental health and preventive care research and interventions (Javier et al., 2007; Yu, Huang, & Singh, 2004; Yu, Zhihuan, & Singh, 2010; Gong, Gage, & Tacata, 2003; Ying & Hu, 1994), making it critical to promote participation in research and validate measures that accurately assess behavioral outcomes in this population.

Los Angeles County (LAC) is the most populous and diverse county in the U.S. and is home to the largest population of Filipino residents (322,110 or 3.3% of LAC) in the United States (U.S. Census Bureau, 2012). With an annual budget for mental health services of over 1.5 billion dollars (Los Angeles County, 2010), the county is similar to other large metropolitan areas in the U.S. facing the challenge of providing effective, high quality mental health services to residents from a large diversity of ethnic and linguistic groups. Since 2010, LAC underwent a transformation in its mental health service delivery that required a large increase in the provision of evidence-based psychological treatments (EBPs; Williams, Rogers, Carson, Sherer, & Hudson, 2012), and the administration of the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) as an outcome measure.

The transformation to the use of EBPs is a laudable effort to translate the science of effective treatments into real world practice that, in theory, will ultimately benefit the children and families receiving these mental health services. A foundational part of this effort is the use of practice-based evidence (outcome measures) to demonstrate the effectiveness of these interventions. LAC gathers the results of the ECBI administered at the beginning and end of treatment, aggregates the data, and reports the results using the Reliable Change Index (Jacobson & Truax, 1991; Wise, 2004), which measures clinically meaningful change while highlighting whether the aggregated results are above or below the clinical cutoff based on the norms in the ECBI manual (Eyberg & Pincus, 1999).

Role of Culture

At its most basic level, standardized assessment of child behavior problems is a process guided by societal and cultural standards for child behavior (Mash & Hunsley, 2007) that results in the development of norms to use as a reference. Interpretations are made based on conformity with or deviation from the norm group. When assessing members of racial minorities and marginalized cultures not included in the norm group, misinterpretation of results may occur due to a failure to consider the historical, social, educational and political context of the group being assessed (Suzuki, Kugler, & Aguiar, 2005). In such cases, caution is advised when utilizing a test with individuals not represented in the norm group, and further study is warranted. Suzuki et al. warn that “one must not assume that because a particular measure is reliable and valid in one cultural context with a particular racial/ethnic group, these statistical properties will then generalize to other populations” (2005, p. 307).

Differences may exist in the perception of child behavior (Reedtz, Bertelsen, Lurie, Handegård, Clifford, & Mørch, 2008) from one culture to another and in perceptions of childhood development (Javier & Aliganga, 2013; Javier, Supan, Lansang, Beyer, Kubicek, & Palinkas, in press). Cultural variations in how parents respond to child behavior questionnaires have been well documented in general by Rescorla et al. (2007) who found in a meta-analysis of studies using the Child Behavior Checklist with large samples from around the world that different societies have different standards for what is acceptable child behavior. In studies specifically examining the psychometric properties of the ECBI in Sweden (Axberg, Johansson Hanse, & Broberg, 2008); Spain (Garcia-Tornel Florensa et al., 1998); Norway (Reedtz et al., 2008); and the U.S. among African American parents of preschoolers (Gross et al., 2007), researchers found a greater tolerance for child misbehavior and fewer behaviors rated as problems by parents outside the U.S. and among African American parents of preschoolers. These studies point to the need for additional investigation when behavioral measures are used with families from different societies and cultures (Mash & Hunsley, 2007; Myers & Winters, 2002). To our knowledge, the validity of the ECBI has not been studied with Filipino or Filipino American samples.

Several cultural factors may influence how Filipino parents respond to surveys about child development, including the historical impact of colonial domination of the Philippines; the stigma (*hiya*) associated with seeking help or mental health services outside of the extended family; and a philosophy of religious fatalism (*bahala na*), leaving problems up to God.

History

The collectivistic indigenous culture of what is now known as the Philippine archipelago of 7,107 islands was significantly impacted by the history of over 400 years of colonial dominance (c.f. Nadal, 2011 for an excellent treatment of this topic). First, colonization by Spain from 1521 to 1898 resulted in the introduction of Catholicism and gender role norms. Today, approximately 85% of Filipinos identify with the Catholic Church. Second, colonization by the U.S. from 1899 to 1946 resulted in the broad acceptance of American educational systems and values, as well as a greater emphasis on individualism and competition, and widespread use of the English language.

This long history of colonization is hypothesized to result in a “colonial mentality” that gives rise to the acceptance of the beliefs and values of the dominating culture as one’s own (David, 2010). This may cause a preference for English when being tested regardless of fluency in English, raising doubts regarding the validity of the assessment in English and interpretations based on English assessment.

Stigma

In addition to the significant impact of colonialism, there may also be a strong desire to avoid having a child and family stigmatized by being labeled as having a mental health problem. This stigma is a significant cultural factor associated with participation in mental health services and parenting programs. It is believed to be related to *hiya* or the fear of bringing shame or embarrassment (Sanchez & Gaw, 2007; Nadal & Mozones, 2010) to the family by accessing help outside the family (Wolf, 1997). This fear of shaming or

embarrassing the family might lead a parent to respond defensively and not to fully disclose child behavior problems on the ECBI. In addition, while it is impossible to describe the typical Filipino family, there are likely strong values supporting conformity with the family group, social desirability, and the duty to honor and support one's family that may impact how Filipino parents rate the frequency of their children's behavior problems and their own abilities to manage those problems (Maramba, 2013).

Religious Fatalism

The passive religious attitude, *bahala na* ("leave it up to God") is thought to be related to a low locus of control (Nadal, 2011) and to the passive acceptance of things as they are in the belief that God intended for them to be this way. This is counterbalanced in Filipino culture by the opposite worldview of *lakas ng loob* or "inner strength" to persevere in the midst of adversity. A parent with a worldview of *bahala na* may not identify a child behavior as a problem, and may prefer to understand it as a difficulty intended by God or an experience to develop perseverance in the midst of adversity.

ECBI Description

The ECBI is a widely used rating scale to evaluate conduct problems in children ages two through 16 years. It is made up of a list of 36 disruptive child behaviors for which the parent is asked to rate the current frequency of each behavior on a Likert Scale from 1 (*never*) to 7 (*always*). These behaviors include hyperactivity, impulsivity, noncompliance, defiance, aggression, and tantrums. The parent is also asked to circle *yes* or *no* for each behavior if it is a problem or not for the parent. Administration requires about 10 minutes and yields data related to two subscales, the Intensity scale (IS) and the Problem scale (PS). The total score of the frequency ratings for all behaviors is used to calculate the IS as a measurement of the severity of conduct problems. The total number of behaviors that the parent rates as problems is used to calculate the PS score as a measure of parental tolerance or intolerance of the child's behavior problems. Both subscales have excellent internal consistency (Eyberg & Pincus, 1999) and good test-retest reliability (Funderburk, Eyberg & Behar, 1989). Boggs, Eyberg, and Reynolds (1990) found evidence supporting the convergent validity of the ECBI using the well-established Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) as the criterion measure with a sample of children ($N = 159$) ages 4 to 16 years old (87% White, 11% Black, and 2% Other). IS and PS scores were significantly correlated with the Externalizing scale of the CBCL ($r_s = .73$ and $.65$, respectively) for a subset of elementary age school children ($n = 107$).

ECBI Psychometric Limitations

The ECBI, however, has a number of limitations with regard to the sample on which it is normed. The primary limitation is that the sample used to produce the norms was drawn from six outpatient pediatric settings in the Southeast United States and was not obtained through standard probability sampling procedures (Achenbach, 2001). This limited sample is not representative of all of the relevant populations receiving mental health services for conduct problems in LAC. The normative sample of children ($N = 798$) between the ages of two and 16 years is described in the manual as 74% Caucasian, 19% African American, 3%

Hispanic, 1% Asian, 1% Native American, and 2% other or mixed ethnicity. Self-identifying Filipino Americans, in spite of their status as the second largest immigrant group in the U.S. behind Mexican Americans (Rytina, 2009) and as the second-largest Asian American subgroup (U.S. Census Bureau 2012), are frequently underrepresented and not clearly identified as participants in research studies. They likewise appear to be underrepresented in the sample used to norm the ECBI.

This normative sample produced a mean IS score of 96.6 and a mean PS score of 7.1, which are substantially higher than those found in most other cultures and countries where the ECBI has been studied (see Table 1). This variation in scores by culture and country as well as the lack of standard probability sampling procedures to produce the norms cast doubt over the validity of results when obtained from previously unstudied minority populations, such as Filipino immigrant parents. As can be seen in Table 1, the means and distributions of the scores vary significantly. This may be a reflection of the variability inherent in a scale that becomes evident when administered in different situations and contexts with diverse groups at different developmental levels (Myers & Winters, 2002).

There remains some controversy as to the factor structure of the ECBI, whether it is a unidimensional measure of child disruptive behaviors supported by a single factor or a multidimensional measure of disruptive behaviors and conduct problems with multiple factors. During the restandardization of the ECBI, Colvin, Eyberg, and Adams (1999) explored the underlying factor structure of the test with results suggesting that a single-factor model provided the best fit for 33 of the 36 test items. Burns and Patterson (2000) explored the ECBI's underlying factor structure in an effort to resolve this controversy with a combined urban and rural sample ($N = 2527$) from four different states. This resulted in the identification and confirmation of three principle factors: 1) *Oppositional Defiant Behavior toward Adults*; 2) *Inattentive Behavior*; and 3) *Conduct Problem Behavior*, later confirmed by Axberg et al. (2008). Norms were developed for each factor, stratified by age and sex. Burns and Patterson concluded that their norms represent "the best available normative information on the ECBI" (p. 576) and that these three factors should occur in other large samples of similar size.

Questions Investigated

The primary purpose of this study was to investigate the reliability and validity of the ECBI as a measure of child behavior problems with a sample of Filipino immigrant parents. Three questions were investigated. First, is the ECBI a reliable screening measure of disruptive child behaviors for use with Filipino populations? We examined the internal consistency of the ECBI Intensity and Problem scales with the expectation that reliability for the IS will be greater than the PS. Specifically, we predict that the identification of any given behavior as a problem for the parent (PS) will be influenced more by the cultural values of Filipino immigrant parents and considerations discussed above, and therefore be rated as problematic less consistently within our sample, than the relatively more objective rating of the frequency of a problem behavior (IS).

Second, is there evidence to support the convergent validity of the ECBI Intensity scale when correlated with the Externalizing scale of the CBCL, as both subscales have in common the measurement of the frequency of disruptive behavior in children? We predict that the CBCL Externalizing scale will be significantly correlated with the ECBI IS. We did not examine the association between the Externalizing scale and PS as these measure different theoretical constructs. Third, do the ratings of Filipino parents on the ECBI better support the single-factor model proposed by Colvin, Eyberg, and Adams (1999) or the three-factor model by Burns and Patterson (2000)? Since the three-factor model had more Asian representation (4% of sample), we predict that our results will support the three-factor model.

Method

Sample

The sample used in this study consisted of 23 self-identified Filipino parents of children ages six to 12 years old living in LAC. All respondents completed the CBCL and ECBI as part of the Filipino Family Initiative (FFI) study carried out in 2011–2012. These surveys were conducted as part of this pilot study examining the feasibility of implementing a 12-week parent training program based on social cognitive learning theory and its effect on parenting practices, parental stress, and child behavior symptoms among Filipino immigrant parents. The intervention was offered as a prevention program to reduce the anticipated cultural barriers to participation that might be associated with having a child with behavior problems or attending a “parent training class” that might imply something wrong with the participants’ parenting.

Parents were recruited over a five month period from churches, schools, and community-based organizations using letters, fliers, and word-of-mouth. Sixty-one parents responded to outreach efforts and were assessed for eligibility. Eligibility criteria included being an English-speaking Filipino parent over the age of 18 years with a child between the ages of six and 12 years old. Parents of children with a developmental disability were excluded from the study and referred elsewhere for the intervention. Of the parents who responded, 60 (98%) met eligibility criteria, and 32 parents (53%) declined to participate.

A total of 28 (47%) consenting parents agreed to join FFI. This response rate is consistent with or even higher than other similar studies (McMenamy, Sheldrick, & Perrin, 2011). The most common reasons for non-participation were scheduling conflicts and inability to commit the time required for participation. Thirty-eight percent of the 32 parents who declined to participate did not provide a reason for non-participation. After providing a complete description of the study to participants, written informed consent was obtained. Participants were paid \$50 for completing the questionnaires at three time points for the CBCL (baseline, 3 months, and 6 months) and two time points for the ECBI (immediately pre- and post- parent training program). Twenty-two parents received the parent training program, five parents withdrew from the study before beginning the parent training program, and one parent withdrew after attending the first session.

Measures

The ECBI is described previously. The Child Behavior Checklist for Ages 6–18 (CBCL; Achenbach & Rescorla, 2001) was chosen as the criterion measure based on its previous use to demonstrate the convergent validity of the ECBI (Boggs et al., 1990). The CBCL is a commonly used 118-item parent questionnaire for rating the frequency of emotional and behavior problems in school age children and was administered by computer pre- and post-intervention. Internal consistency in normed samples is excellent for the Internalizing, Externalizing, and Total Problems subscales (Cronbach's alpha coefficients range between .90 and .97).

Procedure

All procedures, correspondence, and protocols were reviewed and approved by the Institutional Review Board of Children's Hospital Los Angeles. The ECBI was administered at the start and end of the 12-week groups to obtain preliminary data about the reliability and validity of its use with this population. The CBCL was administered as part of a battery of tests prior to the start and at the conclusion of the groups. Although self-reported English fluency was a criterion for participation, interpreters fluent in Tagalog were available for participants who were less acculturated (i.e. recent immigrants to the U.S. who may not have fully understood the nuances of American English).

Analyses

We measured the reliability of the ECBI Intensity scale using Cronbach's alpha for the items on the whole test as well as for the items comprising the three subscales proposed by Burns and Patterson (2000). In this way, we also assessed construct validity by exploring whether our results better support the single factor model proposed by Colvin, Eyberg, & Adams (1999) during the re-standardization of the ECBI or the Burns and Patterson three-factor model (2000). The Kuder-Richardson Reliability Coefficient (K-R 20) was calculated for the binary ECBI Problem scale. We further examined the convergent validity of the ECBI by correlating the raw scores of the IS with those for the Externalizing scale of the CBCL. Primary analyses were conducted on data available at the start of the intervention ($n = 23$). Further analyses used the follow-up data obtained immediately following the completion of the intervention ($n = 22$) in order to confirm estimates of reliability and validity.

Results

Participants

Participants were predominantly first generation immigrants born in the Philippines (86%), although nearly all of their children in the study (91%) were born in the U.S. Self-identified ethnicity among parents was 87% Filipino, 9% biracial Filipino, and 4% Caucasian; one caregiver was born and raised in the Philippines but was not of Filipino descent. The primary languages spoken at home were English (56%) and Tagalog (44%). The mean age of parents in the sample was 43 years ($SD = 9.8$ years); their study children ranged from 6 to 12 years old with a median age of 9 years. Most of the participating caregivers were women (91%), and 52% of the study children were female. Overall, the sample was well educated, with

74% having a college or graduate degree and 91% having at least some college level education. Eighty-three percent were employed full- or part-time. Annual household income was greater than \$45,000 for 61% of the sample, and 87% of participants reported being married or living together. As expected for a prevention intervention, baseline child behavior was in the non-clinical range for almost all participants on the CBCL Externalizing scale ($M = 4.61$; $SD = 4.95$) and on the ECBI Intensity ($M = 88.61$; $SD = 22.35$) and Problem scales ($M = 8.43$; $SD = 6.37$).

Reliability and Construct Validity

Even with fewer than 30 subjects, the ECBI total Intensity scale reliability was excellent (pre-intervention $\alpha = .91$; post-intervention $\alpha = .95$), supporting the single-factor model. The Problem scale reliability was not as low as we presumed it might be (pre-intervention K-R 20 = .89; post-intervention K-R 20 = .88).

We subsequently examined the three-factor model obtained via confirmatory factor analysis by Burns and Patterson (2000) and replicated by Axberg et al. (2008), which included the following factors: Oppositional Defiant Behavior towards Adults (10 items; pre-intervention $\alpha = .82$, post-intervention $\alpha = .90$); Inattentive Behavior (4 items; pre-intervention $\alpha = .90$; post-intervention $\alpha = .94$); and Conduct Problem Behavior (8 items; pre-intervention $\alpha = .78$; post-intervention $\alpha = .75$). These reliability coefficients are in the good to very good range for general research use but were lower than those obtained for the full test.

Convergent Validity

We elected to use the raw ECBI and CBCL scores, as the use of T-scores would reflect an underlying assumption that comparison of Filipino ECBI scores to the published norms for other cultural groups is appropriate. Using the raw scores, there was a strong and significant positive association between the ECBI Intensity scale score and the CBCL Externalizing scale score at pretest ($r = .54$, $p < .01$) as well as posttest ($r = .71$, $p < .001$). Thus, parental ratings of the intensity of child problem behaviors, as assessed by the CBCL and ECBI respectively, corresponded very highly both before and after the parenting intervention.

Discussion

The validation of behavioral measures like the ECBI is an important task in mental health services research for clinicians using the measures and for government entities, which are invested in the use of EBPs and their effectiveness. This is especially true in highly diverse areas like LAC with large immigrant populations. Validity tells us if the interpretations made on the basis of test results are accurate. Evidence from other countries and cultures where the validity of the ECBI has been studied suggests that there are cultural variations in how parents perceive the behavior of their children, which may call into question the validity of typical assessments of problematic child behavior.

This study demonstrates preliminary evidence for the validity of the results and interpretations when using the ECBI with a sample of Filipino immigrant parents. The excellent reliability coefficients observed in this sample suggest that the ECBI items, taken together, are a consistent measure of behavior problems (IS) and parental tolerance of

behavior problems (PS). As predicted, the reliability coefficients of the PS were slightly lower than those for the IS, possibly due to cultural factors that might make it more difficult for a Filipino parent to endorse a behavior as a problem. Nevertheless, these results provide preliminary support for the use of the ECBI with immigrant Filipino parents. The reliability coefficients for the IS are similar to those found in the validity studies described in the test manual (Eyberg & Pincus, 1999) with the norm group while those for the PS are slightly lower as predicted.

Construct validity is demonstrated through the identification of factors or theoretical constructs that underlie the items comprising the measure. These results provide strong support for the single-factor model suggested by Colvin, Eyberg & Adams (1999). Further, when we examined the construct validity of the test items when grouped into the three factors explored and confirmed by Burns and Patterson (2000), the individual factors demonstrated less internal consistency than when all of the items were correlated together. Although these reliability coefficients are good to very good for general research use, there does not appear to be a compelling argument that the three-factor model would provide more consistent results for Filipino parents than the single-factor model. However, we cannot conclude this with certainty until it is confirmed with a larger sample that also includes a sufficient number of children with clinical levels of behavior problems.

For example, of the three factors proposed by Burns and Patterson (2000), the factor with the lowest reliability coefficient among the three in our predominantly non-clinical sample was *Conduct Problem Behavior* (8 items; pre-intervention $\alpha = .78$; post-intervention $\alpha = .75$). This factor consists of the most severe conduct problems on the scale (verbal and physical aggression, lying, stealing, and destruction of property), and we should have expected this factor to display less reliability in our predominantly non-clinical sample. Our reliability coefficients for this factor were only slightly lower than those found by Burns and Patterson for the *Conduct Problem Behavior* factor (Total Boys $\alpha = .82$; Total Girls $\alpha = .77$). Analysis by sex was precluded in our study due to the small sample size.

The ECBI demonstrated very good convergent validity when the raw scores of the IS were correlated with those of the items making up the Externalizing scale of the CBCL. The significant correlations between the IS and the Externalizing scale corresponded to shared variance of 29% at pretest and 50% at posttest. As expected, both tests appear to measure similar theoretical constructs, the frequency of externalized conduct problems.

Overall, the concerns raised regarding the possible impact of cultural values do not appear to have affected the responses of the Filipino parents in the study as much as predicted. However, the significant number of potential participants who declined to participate during the informed consent process ($n = 32$, 53% of those meeting eligibility criteria) may have done so for reasons related to these cultural factors but not disclosed. Nevertheless, the historical and cultural values discussed in this paper should be used as considerations to enhance the assessment of Filipino families in the delivery of mental health services and should not be applied in a stereotypical way to all Filipino families.

Limitations

The primary limitations of this pilot study are related to the small sample size ($N = 23$), which lacks sufficient power to accurately estimate the performance of the larger population of Filipinos and Filipino Americans or examine differences in scale performance by socio-demographic or other characteristics (e.g., sex). As our sample was predominantly parents of healthy children in the non-clinical range, further investigation is warranted with larger samples of Filipino parents representing a broader range of clinical problems and levels of severity found in the general population. The generalizability of these results is further limited by the participants being a self-selected convenience sample of Filipino immigrants residing in LAC that may not be representative of the overall Filipino population in the U.S.

One of the requirements for participation in this study was the participant's self-report of English fluency. The ECBI and the CBCL used in this study were presented in English and were not translated into Tagalog. Although Filipinos' experiences with acculturation and colonial mentality may result in less reliable testing due to the fact that they may not fully understand the nuances of American English, the effects of this limitation were minimized in our study by having a Tagalog interpreter available to participants in case there were questions about test items. For example, the term "dawdling" on the ECBI required further clarification for many parents, especially those who were recent immigrants and less acculturated.

Finally, although our results showed strong support for the single factor model suggested by Colvin, Eyberg & Adams (1999), a larger sample size sufficient to support factor analysis would better answer the question as to whether the three-factor model proposed by Burns and Patterson (2000) is a better fit than the single factor model found by Colvin, Eyberg & Adams (1999).

Conclusions

Despite the limitations of the present study, we believe that these results are promising and provide preliminary evidence for the validity of the ECBI as a brief parent report measure for assessing child behavior problems in Filipino families. It is further hoped that these results shed some light on this growing, yet still largely invisible and often overlooked minority by society in general and within the Asian American community (Nadal & Monzones, 2010).

In the absence of additional empirical data to support the use of the ECBI with clear clinical cutoff points for diverse racial and ethnic groups, LAC is to be commended for its utilization of the Reliable Change Index (Jacobson & Truax, 1991; Wise, 2004) to evaluate treatment outcomes. The Reliable Change Index analyzes outcomes in a way that compares the baseline measurement of behavior problems with the post-treatment results. This effectively uses the treatment group at pre-treatment as the comparison group at post-treatment to determine if clinically meaningful change has taken place as an alternative to the traditional use of a single clinical cutoff score to decide if treatment is effective.

Ultimately, the prevention of complex social problems and health disparities among large numbers of Filipino youth must begin with an understanding of the unique cultural context of the individual family that includes the caregivers' perceptions of their child's behavior and development. The ECBI should be considered a promising tool for the measurement of behavior problems and treatment outcomes for this unique and growing immigrant group.

Acknowledgments

Funding

This research was supported in part by the Southern California Clinical and Translational Science Institute (SC CTSI) (NIH/NCRR/NCATS) Grant KL2TR000131, the NIH Eunice Kennedy Shriver National Institute of Child Health and Human Development Grant 1K23HD071942- 01A1, and the Tikun Olam Foundation. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or the Tikun Olam Foundation.

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Table 1

Summary of ECBI Subscale Scores with Different Populations

Population	N	Age	Intensity scale		Problem scale		Authors
			M	SD	M	SD	
ECBI Manual	798	2–16	96.6	35.2	7.1	7.7	Eyberg & Pincus, 1999
Norway	4063	4–12	89.9	24.6	3.0	4.5	Reedtz et al., 2008
Spain	518	2–12	96.8	26.6	3.93	5.9	García-Tomé et al., 1998
Sweden	841	3–10	88.2	26.0	3.09	5.03	Axberg et al., 2008
U.S.	682	2–4	88.0	30.3	5.7	6.7	Gross et al., 2007