Journal of Consulting and Clinical Psychology
2006, Vol. 74, No. 6, 1098–1107

0022-006X/06/$12.00 DOI: 10.1037/0022-006X.74.6.1098

Culture and Youth Psychopathology: Testing the Syndromal Sensitivity Model in Thai and American Adolescents

John R. Weisz
Judge Baker Children's Center, Harvard University

Bahr Weiss
Vanderbilt University

Somsong Suwanlert
Child Mental Health Center

Wanchai Chaiyasit
Ministry of Health

Current widespread use of the same youth assessment measures and scales across different nations assumes that youth psychopathology syndromes do not differ meaningfully across nations. By contrast, the authors' syndromal sensitivity model posits 3 processes through which cultural differences can lead to cross-national differences in psychopathology syndromes. The authors tested this model in a comparison of Child Behavior Checklist syndromes for adolescents in Thailand and the United States. In support of the model, about half of the Thai–U.S. syndrome comparisons showed poor agreement (kappa $<$ .40), and distinctive Thai syndromes emerged reflecting 3 prominent themes in Thai research literature: delayed maturation, indirect aggression and/or delinquency, and sex problems in boys. Such syndromal dissimilarity carries significant implications for assessment, diagnosis, epidemiology, and intervention across national boundaries.

Keywords: culture, adolescents, syndromes, psychopathology, factor analysis, Child Behavior Checklist

For decades, theorists and researchers have debated whether psychological patterns found in Western countries generalize to other nations (e.g., Bird, 1996; Kleinman, 1977; Rogler, 1989; Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000). For youth psychopathology, a fundamental form of the question is this: To what extent are the basic youth psychopathology *syndromes*—that is, groups of behavioral or emotional problems that co-occur and are correlated with one another—similar across national and cultural boundaries? The question is primary, because comparing two population groups on the prevalence of a particular syndrome is appropriate only to the extent that the syndrome exists in both groups.

John R. Weisz, Judge Baker Children's Center, Harvard University; Bahr Weiss, Department of Psychology and Human Development, Vanderbilt University; Somsong Suwanlert, Child Mental Health Center, Bangkok, Thailand; Wanchai Chaiyasit, Ministry of Health, Bangkok, Thailand.

Additional factor tables for this study may be obtained from either John R. Weisz or Bahr Weiss, or from http://www.vanderbilt.edu/psychological_sciences/weiss.

The study was supported in part by National Institute of Mental Health (NIMH) Research Grants R01 MH38240 and R01 MH49522 to John R. Weisz, NIMH Research Grant R18 MH50265 to Bahr Weiss, and NIMH Senior Research Scientist Award K05 MH01161 to John R. Weisz. We thank Erin Dabbs, Suwattana Sripuenpol, and Kanchana Wanitromanee for their help with the study.

Correspondence concerning this article should be addressed to either John R. Weisz, Judge Baker Children's Center, Harvard University, 53 Parker Hill Avenue, Boston, MA 02120-3225, or Bahr Weiss, Department of Psychology and Human Development, Box 512 Peabody, Vanderbilt University, Nashville, TN 37203. E-mail: jweisz@jbcc.harvard.edu or bahr.weiss@vanderbilt.edu

Learning whether there are cross-national differences in the nature of psychopathology syndromes is important both theoretically and clinically. Learning the extent to which psychopathology is organized into the same syndromes for youth from different nations can tell us the extent to which the same classification system can be used across national boundaries. Syndromes are often the basis for clinical assessment, as illustrated in the groundbreaking work of Achenbach and colleagues (e.g., Achenbach, 1991, 1995; Achenbach & Edelbrock, 1983; Achenbach & Rescorla, 2001), in which syndromes identified for the Child Behavior Checklist (CBCL) and related instruments represent scales for assessment of psychopathology. The CBCL has been translated into over 60 languages, and in countries around the world the translated CBCL is scored with the U.S.-derived syndrome scales (see, e.g., Crijnen, Achenbach, & Verhulst, 1997). Learning whether adolescent syndromes are similar across cultural and national boundaries can help clarify whether it is appropriate for syndrome scales derived from one population group to be used as a standard for other population groups.

Clinical practice and research across national boundaries would be greatly enriched by having a common set of syndrome scales on which youths from all nations could be validly assessed. On the other hand, the fact that one can tally items of any syndrome scale in the individuals of any nation does not necessarily mean that the syndrome is equally valid for each nation. As Bird (1996, p. 40) noted, "a nosological category developed for a particular cultural population [should not be applied] to members of another culture without establishing its validity for that culture" (see also Kleinman, 1977; Rogler, 1989). In the youth psychopathology domain, some researchers have begun to address this issue, focusing most often on the CBCL.

One group, Achenbach and colleagues (Achenbach, Verhulst, Baron, & Althaus, 1987; de Groot, Koot, & Verhulst, 1994; Verhulst, Achenbach, Althaus, & Akkerhuis, 1988), has compared CBCL factor structure in samples from the United States and the Netherlands. Another group (Hartman et al., 1999) assessed CBCL factor structure across seven countries. Findings have differed somewhat across studies, with Achenbach and colleagues reporting similar syndromes across cultures and Hartman et al. (1999) reporting adequate fit of the U.S.-derived model on some model fit indices but not others, as well as poor fit in a simulation study. These comparisons are valuable but have two limitations. First, the samples used in some of this research—for example, most of those in Hartman et al.—have been nonclinical and thus likely to show relatively low levels and limited variability in problem levels, which limits one's ability to form an accurate picture of clinical syndromes (see, e.g., Edelbrock, 1988). Second, the studies have used predominantly Caucasian samples from mainly Western countries, which may not provide as stringent a test of similarity as syndromal comparisons that use more ethnically and culturally distinct samples. Indeed, structuring cross-national comparisons that entail theoretically significant ethnic and cultural differences may be a particularly useful strategy for building an understanding of the relation between culture and syndromes.

As a conceptual framework for such comparisons, we propose here a *syndromal sensitivity model* of culture and psychopathology. According to this model, clusters of behaviors that are addressed very differently in different population groups may be associated with psychopathology syndromes that differ across those population groups through at least three processes, described below. In the present study, we applied this new model to a specific cross-national comparison that has special theoretical significance and a rich literature: We compared adolescents of Thailand and the United States, two countries in which differences in religious and philosophical traditions, notions about childhood and child rearing, and cultural practices all appear relevant to the organization of youth psychopathology (for details, see Cederblad, Pruksachatkunakorn, Boripunkul, Intraprasert, & Hook, 2001, 2003; Wacharasindhu & Panyyayong, 2002; Weisz, McCarty, Eastman, Suwanlert, & Chaiyasit, 1997). Here we describe the three processes of the model that appear especially relevant to Thai–U.S. differences.

The Syndromal Sensitivity Model: Three Processes

Process 1: Cultural Facilitation

When a particular cluster of behaviors is encouraged in one population group more than others, such cultural facilitation will increase the likelihood that the component behaviors will co-occur within that population group. This is not to say that rates or frequency of the behaviors will increase (although this may occur), but rather that the component behaviors will be more likely to co-occur and hence form a syndrome. Certainly not all encouraged behaviors are inherently maladaptive, but some may come to be regarded as maladaptive over time, as when their persistence or pervasiveness interferes with needed forms of maturation and adaptation within a culture. In Thailand, an apt example is found in the research literature on encouragement of dependence on parents. Parenting in Thailand has been found to emphasize extended nurturance and a slower pace of psychological individuation from the family than in the United States and other Western nations; examples range from the later weaning of Thai children to encouraging older adolescents and young adults to live with parents longer than in Western cultures (see Klausner, 1993; Mulder, 1985; Somrongthong & Sitthi-Amorn, 2000; Suvannathat, 1979). According to the syndromal sensitivity model, such cultural facilitation may make behaviors related to dependence or immaturity more likely to co-occur and thus to form a syndrome in Thai youth than in American youth. Of course, some relatively immature behaviors may not be considered problems in a culture that views favorably a slower pace of individuation, but in cases in which immaturity is pervasive and prolonged, parents may find the behaviors to be problems, given the youth's age (e.g., thumb-sucking in public, clinging in fear of separation).

Process 2: Cultural Sanction

In a second hypothesized process, cultural sanction, when a particular cluster of behaviors is verbally disapproved, negatively sanctioned, or actively punished within one population relative to others, direct expression of the behaviors may be discouraged; thus, individuals who are motivated to express the behaviors may do so in relatively indirect or covert ways that are less likely to lead to cultural sanctions. As a consequence, indirect or covert forms of the behavior may be more likely to co-occur and thus to form a syndrome in that culture than in others. An apt illustration of this phenomenon is found in regard to physical aggression and rule breaking in Thailand, a Buddhist country where cultural sanctions against physical aggression and rule breaking are strong. Thai boys and girls are taught, as part of their Buddhist education, to be scrupulously obedient and to avoid causing physical harm to any living thing (Limonanda, 1995; Suvannathat, 1979; Suwanlert, 1974; Thananart, Tori, & Emavardhana, 2000). Extensive research in many cultures has documented that some level of motivation for rule breaking and aggression is common to youths around the world (e.g., Grusec & Lytton, 1988); it seems unlikely that Thai youths would entirely escape such motivation. The cultural sanction process we posit suggests that, given the strong Buddhist-related sanctions in their culture, Thai youths motivated to break rules or to aggress would be more likely than American youths to manifest indirect, covert, or nonphysical (e.g., verbal) forms of rule breaking and aggression, the co-occurrence of which would form a syndrome.

Process 3: Cultural Discord

A third process in the syndromal sensitivity model is cultural discord. We posit that when behaviors related to a core theme generate discordant responses within a particular population group—that is, when contradictory messages are communicated about the acceptability of the behaviors—problems related to conflict or confusion about that core theme may arise, with their co-occurence creating a syndrome. Particularly relevant to our Thai–U.S. comparison is the theme of sexuality, about which Thai adolescent boys (but not girls) receive decidedly discordant messages. Buddhist cultural traditions strongly emphasize modesty and sexual restraint in both girls and boys; but for boys these Buddhist prohibitions clash with secular social pressure to be sexually active as a part of maturation into manhood (Boonchalaksi & Guest, 1994; Ford & Kittisuksathit, 1994; Knodel, 1997;

Limonanda, 1995; Limonanda, Tirasawat, & Chongvatana, 1993). The cultural discord process described above could make Thai boys more likely than American boys to develop co-occurring problems related to sexuality, thus forming a syndrome. Thai girls, lacking the conflicting messages, would not be as likely to develop such a syndrome.

These specific applications of the syndromal sensitivity model were stimulated by and are congruent with findings of a recent factor analytic study. Weisz, Weiss, Suwanlert, and Chaiyasit (2003) compared syndromes of the CBCL as identified in Thai and American children ages 6 to 11. A few syndromes (e.g., somatic problems) showed strong cross-cultural agreement, but most did not. Among the Thai child syndromes that did not have a well-matched counterpart in American children were two involving immaturity—that is, a hyperactive–immature syndrome in Thai boys, and a school problems–immature syndrome in Thai girls. In addition, both Thai boys and Thai girls evinced verbally unpleasant syndromes with no counterpart in U.S. syndromes; these Thai verbally unpleasant syndromes appeared to reflect indirect, nonphysical ways of expressing aggression and rule breaking. Also, Thai boys, but not girls, showed a sex problems syndrome with a counterpart in only one of three U.S. CBCL factor analyses with 6- to 11-year-olds.

The presence of Thai syndromes reflecting immaturity, indirect and nonphysical forms of aggression, and sex problems in boys, is consistent with the syndromal sensitivity model proposed in the present article. However, these findings were not specifically predicted in the study by Weisz et al. (2003), and that study included only preadolescent children. What is needed at this point is a direct test of the syndromal sensitivity model, one within the adolescent age range. Adolescence is a time when youths face new challenges (e.g., coping with puberty, balancing autonomy with a need for parental support) and when risk for a variety of different forms of psychopathology increases, with both social and biological factors likely underlying this increased risk (e.g., Angold & Rutter, 1992; Koenig & Gladstone, 1998; E. F. Walker, 2002). It is possible that at least some of these underlying factors may be culturally universal (e.g., all children transition through puberty), thus potentially increasing the similarity of psychopathology syndromes across cultures during adolescence, as compared with childhood. On the other hand, Ponce (1997) has suggested that in adolescence, developmental and cultural factors interact in their impact on psychopathology in ways that can create distinctive cross-cultural dissimilarities in syndromes. The present study provided an opportunity to build on these ideas, identifying Thai adolescent psychopathology syndromes, comparing these with the syndromes identified in U.S. adolescents, and carrying out an initial test of the syndromal sensitivity model. Of particular interest in relation to the model was whether distinctive syndromes might emerge for Thai adolescents reflecting immaturity, indirect or nonphysical forms of aggression or delinquency, and sex problems in boys.

Method

Participants

American sample. We used results of three U.S. CBCL analyses (see below) for comparison with the Thai data. In the first U.S. analysis, Achenbach and Edelbrock (1983) found factors for 12- to 16-year-old boys and girls; second-order analyses revealed broadband Internalizing and Externalizing factors for both groups. The sample included CBCL parent (or guardian) reports for 900 clinic-referred youths, 50% of each gender; 80% were Caucasian, 19% African American, and 1% other. Achenbach (1991) added to this 1983 sample to produce a sample of 1,704 adolescents, 49.5% boys; 89% were Caucasian, 9% African American, and 2% other. Achenbach and Rescorla (2001) used a larger sample (not overlapping with the 1983 or 1991 samples) of 1,447 adolescent boys and 1,026 adolescent girls; across the full age range of Achenbach and Rescorla's sample, 46% were Caucasian, 22% of African descent, 21% Latino, and 11% mixed or other. Informants who completed the CBCL varied across the various samples and were not consistently reported separately for boys and girls, but in their most recent report, Achenbach and Rescorla (2001) noted that, across ages and genders, 65% of the CBCLs were completed by mothers, 10% by fathers, and 25% by other.

Thai sample. The Thai data included Thai Youth Checklist (TYC, i.e., the Thai translation of the CBCL; see below) reports for 900 adolescents, 90 boys and 90 girls at each yearly age level from 12 through 16 (thus, mean age was 14 years). All youths were referred by clinics, with mental health clinics and programs from urban and rural locations throughout Thailand represented. Data were collected from 1982 to 1999, closely paralleling U.S. data collection for the CBCL factor analyses by Achenbach et al. There was no significant association between year of data collection and problem levels. The sample was 98% ethnic Thai, 95% Buddhist, and 100% Thai language speaking. Some 59% of the TYCs for boys were completed by mothers, 21% by fathers, and 20% by other; 60% of the TYCs for girls were completed by mothers, 18% by fathers, and 22% by other guardians. Thus, the Thai sample was quite similar to the U.S. sample in years of data collection, age and gender composition, and informant profile.

Socioeconomic, educational, and clinical similarity of Thai and U.S. samples. Clinical samples are regularly used in factor analytic studies to ensure sufficient variability in problem levels, because nonclinical samples tend to have low mean problem levels, low variability, and significant skew (e.g., Edelbrock, 1988). However, when comparing clinical samples from different nations, it is useful to check for at least approximate similarity of the samples on demographic, educational, and clinical characteristics. Mean age of the Thai sample was 14.0 years ($SD = 1.4$) compared with 14.0 ($SD = 1.4$) for the U.S. 1983 sample, 14.3 ($SD = 1.7$) for the U.S. 1991 sample, and 15.1 ($SD = 2.4$) for the U.S. 2001 sample. The percentage of boys was 50% in the Thai sample compared with 50% in the U.S. 1983 sample, 50% in the U.S. 1991 sample, and 53% in the U.S. 2001 sample. We were able to obtain information on educational levels only for the 1983 and 1991 U.S. samples. Mean grade level was 6.2 for the Thai sample, compared with 6.3 for the U.S. 1983 sample and 6.2 for the U.S. 1991 sample, with number of repeated grades averaging more than 1.5 in both the U.S. and Thai samples. Mean years of education (including repeats) was 9.0 ($SD = 1.4$) in the Thai sample, 9.0 ($SD = 1.4$) in the U.S. 1983 sample, and 8.9 ($SD = 1.4$) in the U.S. 1991 sample.

We also checked socioeconomic similarity using the Hollingshead (1975) nine-step scale[1] used by Achenbach and colleagues to rate socioeconomic status (SES) on the basis of parent occupation. SES means were 4.0 ($SD = 2.6$) for the Thai parents, 4.4 ($SD = 1.9$) for the Achenbach and Edelbrock (1983) U.S. parents, and 4.8 ($SD = 2.2$) for the Achenbach (1991) U.S. parents. Achenbach and Rescorla (2001) converted the nine-step SES scale to three steps, with two representing middle class, and they found a sample mean of 2.2 ($SD = 0.7$). Thus, mean SES for all the samples was in the middle class range, which corresponds to such parent occupations as skilled manual workers and solo small business owners.

[1] We make no assumption about the validity of the Hollingshead scale for non-U.S. cultures. Our purpose here was simply to determine whether there were large differences in parent occupation across the two national samples. This required that we use exactly the same occupation rating system that had been used previously for the U.S. CBCL samples.

Finally, we assessed clinical similarity of the Thai and U.S. samples by comparing Total Problem raw scores on the checklist measures (see below). The mean was 52.4 (SD = 29.2) for Thai girls versus 53.1 (SD = 25.0) for U.S. girls in the 1983 sample, 53.2 (SD = 26.5) for U.S. girls in 1991, and 63.5 (SD = 30.9) for U.S. girls in 2001. The mean was 56.7 for Thai boys versus 56.3 (SD = 28.4) for U.S. boys in 1983, 53.0 (SD = 28.2) for U.S. boys in 1991, and 63.4 (SD = 32.7) for U.S. boys in 2001. In both the Thai and U.S. samples, Externalizing problems were the most common reasons for clinical referral, and the most common single reason for referral was the same in both countries—poor schoolwork (35% in the Thai sample, 33% in the U.S. sample), which is part of the Externalizing broadband syndrome in both samples. Thus, the Thai and U.S. samples were quite similar in age, gender, educational level (even grade repeats), SES, problem levels, and reasons for clinical referral.

Measures

Child Behavior Checklist (CBCL). The U.S. syndromes were derived from the CBCL (Achenbach, 1991; Achenbach & Rescorla, 2001), a 118-item checklist of specific problems (e.g., "cruel to animals," "feels dizzy"). Parents report whether their child has each problem by circling 0 ("*not true*"), 1 ("*somewhat or sometimes true*"), or 2 ("*very true or often true*"). Internal consistency (Cronbach's alpha) of Total problem scores has ranged from .94 to .97 across the various samples, and one-week test–retest reliability of Total problem scores, via the intraclass correlation coefficient, was found to be .95 (Achenbach, 1991; Achenbach & Edelbrock, 1981; Achenbach & Rescorla, 2001). The construct validity of the CBCL is supported by evidence that items form broadband Internalizing and Externalizing scales, with boys scoring higher than girls on Externalizing problems and girls scoring higher than boys on Internalizing problems; and that Total, Internalizing, and Externalizing scores are markedly higher for clinically referred than for nonreferred youngsters (see Achenbach, 1991; Achenbach & Edelbrock, 1983; Achenbach & Rescorla, 2001). For other psychometric findings, see http://www.aseba.org.

Thai Youth Checklist. Thai factors were derived from the Thai Youth Checklist (TYC), a Thai-language measure designed to parallel the CBCL so as to permit cross-national comparison. The TYC format is the same as for the CBCL: Parents rate each problem item 0, 1, or 2, and the 118 CBCL problems are listed as the first items and in the same order as on the CBCL.[2] CBCL items were translated into Thai via three waves of translation and back-translation (following Brislin, 1970; Draguns, 1982; Wagatsuma, 1977). First a professional translator in Thailand translated the CBCL from English to Thai, then two bilingual Thai clinical psychologists back-translated it into English. Two similar sequences followed, with translation and back-translation carried out by bilingual clinical psychologists and a bilingual anthropologist. We aimed for linguistic equivalence and simplicity of expression. All items refer to behaviors also seen in Thai children, and the translation is readily understood by Thai parents. In the present sample, internal consistency (Cronbach's alpha) of the Total problem scores was .95. In two studies (Weisz et al., 1993, 1987), one-week test–retest ICCs for the Total Problem score were .81 and .83, respectively, and one week test–retest Pearson correlations (which, unlike ICCs, are based only on standardized rank-order differences and not influenced by level differences) were .83 and .86, respectively. The construct validity of the TYC, like that of the CBCL, is supported by evidence that items form broadband Internalizing and Externalizing scales, with boys scoring higher than girls on Externalizing problems and girls scoring higher than boys on Internalizing problems; and, as with the CBCL, Total, Internalizing, and Externalizing problem scores are markedly higher for clinically referred than for nonreferred youths (cf. Weisz et al., 1997, 1993, 1987, 2003).

Procedures

The three sets of analyses carried out by Achenbach and Edelbrock (1983), Achenbach (1991), and Achenbach and Rescorla (2001) provided somewhat different sets of U.S.-derived syndromes to which Thai syndromes might be compared. The Achenbach and Edelbrock (1983) analyses were conducted specifically for parent reports (as distinct from teacher reports and youth self-reports) and separately for each Age × Sex group (e.g., adolescent boys, adolescent girls). The syndromes reported by Achenbach (1991) and Achenbach and Rescorla (2001) reflected an approach designed to yield "cross-informant syndromes," that is, groups of problems found to co-occur in reports by at least two of the three informants (i.e., parents, teachers, youths) and across a majority of gender and age groups. We used all three sets of U.S. syndromes in a sequence of analyses as separate bases for comparison with Thai syndromes, because each set of U.S. syndromes is important in a specific way. The Achenbach and Edelbrock (1983) syndromes are important because they emerged from analyses that were unlikely to be influenced by informant, age, or gender effects, as analyses were separate for each group. The Achenbach (1991) and Achenbach and Rescorla (2001) cross-informant syndromes are important comparison targets because (a) they represent syndromes that replicate across informants, ages, and genders and because (b) they represent the current approach to CBCL assessment that is now used in virtually all clinical settings that use the CBCL, around the world. Beyond these specific reasons, it seemed important to provide a complete comparison in which the Thai syndromes were compared with all possible sets of U.S. syndromes, because comparing Thai syndromes to only one version of the U.S. syndromes would inevitably leave open the possibility that the Thai–U.S. fit would have been different if we had used a different version of the U.S. syndromes.

Results

Data Analyses

To identify syndromes in our Thai sample, we conducted an exploratory factor analysis (EFA), using unweighted least squares factor extraction,[3] with a loading criterion of .30.[4] Like Achenbach and Edelbrock (1983) and Achenbach (1991), in all our analyses we dropped items endorsed by less than 5% of the sample (in Achenbach & Rescorla, 2001, items endorsed by "much less than 5%" [p. 84] were dropped). Following the recommendations of a number of authors (e.g., Glorfeld, 1995), we used several approaches to determine the appropriate number of factors, including

[2] One exception was that, as recommended by Thai experts, we divided the CBCL item "uses alcohol or drugs" into "uses alcohol" and "uses drugs." For the present analyses, we combined these two, with the higher of the two parent ratings used as the score for the composite item. The TYC also includes 24 items added specifically for Thai children and listed after the CBCL items; these were not included in the present study because they had no counterpart in the CBCL.

[3] Because all three analyses of the CBCL used principal component analysis (Achenbach & Rescorla, 2001 also used unweighted least squares [ULS] analysis), we also conducted a set of secondary analyses based on principal component analysis. Using principal component analysis resulted in a few items with low loadings moving on or off factors but with no substantive changes; therefore, to conserve space, we report the ULS analyses only.

[4] To evaluate the extent to which our choice of a .3 factor loading cutoff influenced our results, we computed (separately for boys and girls) overall concordance kappas, varying the cutoff across the range statisticians suggest (from .3 to .4; see, e.g., Gorsuch, 1983). Variation over this range had little effect on results, with concordance kappas for both boys and girls peaking near our cutoff criterion of .30. Thus, our results are conservative; if we had required a higher loading, we would have found even lower concordance between Thai and U.S. factors than those reported in the present article.

parallel analysis (Horn, 1965), scree plots, and Velicer's minimum average partial correlation method (Gorsuch, 1983, 2003). Because research indicates that most psychopathology syndromes are correlated, we used a nonorthogonal promax rotation with no restrictions on factor intercorrelations. To name each factor, we ordered items from highest to lowest loading on the factor, then identified a name that reflected what was common among the items that loaded, with higher loadings given greater emphasis than lower loadings. We carried out a second-order EFA on the factor correlation matrix derived from the first-order EFA.

For the Thai adolescent boys, the criteria suggested seven factors. These were named as follows: 1. Anxious, Depressed, Thought Problems; 2. Aggressive, Destructive; 3. Delinquent; 4. Somatic Problems; 5. Immature; 6. Verbally Undercontrolled; and 7. Sex Problems (first- and second-order factor loading tables for both boys and girls are available from John R. Weisz or Bahr Weiss or at http://www.vanderbilt.edu/psychological_sciences/weiss). Our second-order factor analysis produced Externalizing and Internalizing factors that were correlated .43 with one another. Loading on the Externalizing factor were the first-order factors (a) Aggressive, Destructive; (b) Delinquent; and (c) Immature. Loading on the Internalizing factor were the first-order factors (a) Anxious, Depressed, Thought Problems; (b) Somatic Problems; and (c) Verbally Undercontrolled.

For Thai adolescent girls, the criteria suggested nine factors. These were named as follows: 1. Anxious, Depressed; 2. Overt Delinquency; 3. Verbally Oppositional; 4. Covert Delinquency; 5. Withdrawn; 6. Thought Problems; 7. Somatic Problems; 8. Aggressive, Destructive; and 9. Habit Problems, Immature. Our second-order factor analysis for girls produced Externalizing and Internalizing factors that correlated .37 with one another. Loading on the Externalizing factor were these first-order factors: (a) Overt Delinquency; (b) Verbally Oppositional; (c) Covert Delinquency; and (d) Withdrawn (with a negative loading). Loading on the Internalizing factor were these first-order factors: (a) Anxious, Depressed; (b) Withdrawn; (c) Thought Problems; (d) Somatic Problems; and (e) Verbally Oppositional.

Overall Similarity Between Thai and U.S. Syndromes

To estimate the similarity of syndromal structure for Thai versus U.S. adolescents, we used confirmatory factor analysis (CFA; Bollen, 1989; Byrne, 2005), assessing the degree to which the factor structure for U.S. adolescents provided a good fit for the Thai adolescents' data. The response scale for CBCL and TYC items is ordinal (0-1-2), not interval as is preferable for CFA; so, like other researchers in this area (e.g., de Groot et al., 1994), we used polychoric correlations to estimate the relation between the latent interval-level constructs. We used the SAS program Proc Freq (SAS Institute, 2004a) to estimate polychoric correlations, smoothing the resultant correlation matrices to reduce the likelihood of linear dependencies in the data (Waller, 2003). The SAS procedure Proc Calis (SAS Institute, 2004b) was used for the actual CFA analyses, with maximum-likelihood estimation. We used the normed fit index (NFI), nonnormed fit index (NNFI), and root-mean-square error of approximation (RMSEA) as fit indices, with cutoffs for acceptable fit of greater than .90 for the first two indices and less than .08 for the third (Hoyle, 1995; Kline, 1998). In the models described below, factors were allowed to correlate freely, and error terms were estimated and uncorrelated with each other. The hypothesized factor structure was based on results of three different CBCL analyses, noted next.

Achenbach and Edelbrock (1983) as target. We first evaluated the fit provided by the factors reported in Achenbach and Edelbrock's (1983) study. For the boys, the phi matrix (the interfactor correlation matrix) had two negative eigenvalues, indicating linear dependencies and that the 1983 structure was not appropriate. This was supported by the fit indices (NFI = .29, NNFI = .29, and RMSEA = .13), all of which indicate very poor fit. For the girls, the Achenbach and Edelbrock (1983) structure also provided a poor fit (NFI = .32, NNFI = .31, and RMSEA = .12).

Achenbach (1991) as target. Using the factors reported by Achenbach (1991), we found that for neither gender group did the phi (or any other) matrix produce negative eigenvalues. However, the fit remained poor for both genders: For the boys, NFI = .34, NNFI = .33, and RMSEA = .12; for the girls, NFI = .30, NNFI = .30, and RMSEA = .12.

Achenbach and Rescorla (2001) as target. We next tested the extent to which the Achenbach and Rescorla (2001) syndromes fit the Thai adolescent data.[5] The fit was very poor for both genders: For the boys, NFI = .21, NNFI = .22, and RMSEA = .14; for the girls, NFI = .21, NNFI = .22, and RMSEA = .15.

Comparison of Thai and U.S. Syndromes

Finally, we sought a more detailed comparison of Thai versus U.S. syndromes than the CFA provided. In considering different approaches to this goal, it is important to note that assessment of cross-national similarity is a kind of reliability assessment—that is, reliability and replicability of factors across two national groups. In the past, some researchers have computed cross-national factor correlations (e.g., de Groot et al., 1994) to describe scale-level cross-national similarity. However, in general, the use of Pearson correlations for interrater (or other forms of cross-group) reliability is not recommended (e.g., Allen & Yen, 2001), because Pearson correlations represent standardized rank-order effects; one can thus have substantial correlations even when there are pronounced differences in levels, variances, and so on in the two groups being compared.

Consequently, we used the approach used by Weisz et al. (2003) to describe scale-level similarity—as defined by the items loading on the factor—between Thai and U.S. factors. For each Thai and each U.S. factor solution, we selected Thai and U.S. factor pairs showing the most overlapping items. We then computed kappa coefficients to assess similarity, applying interpretive standards established by Landis and Koch (1977): Kappas of .00–.20 are classified as slight, .21–.40 as fair, .41–.60 as moderate, .61–.80 as substantial, and .81–1.00 as almost perfect. To illustrate, for one

[5] Because items were added to the CBCL for the Achenbach and Rescorla (2001) data set that were not included in the TYS, there were some items included in the Achenbach and Rescorla (2001) syndromes that the TYS did not cover. For the (a) Anxious, Depressed; (b) Somatic Complaints; (c) Social Problems; (d) Thought Problems; and (e) Aggressive Behavior subscales, there were no new items; for the (f) Attention Problems subscale there were two items ("fails to complete activities; inattentive"), for the (g) Rule Breaking Behavior subscale, there were three new items ("drinks alcohol," "breaks rules," "uses tobacco"), and for the (h) Withdrawn, Depressed subscale, there was one new item ("enjoys little").

comparison among boys we compared the items loading on the Thai Aggressive, Destructive factor (based on the Thai EFA reported above) to the items loading on the U.S. Aggressive factor, as reported by Achenbach and Edelbrock (1983). We computed kappa by classifying CBCL and TYC items as to whether they loaded (yes/no) on the Thai factor and on the U.S. factor and by placing each item into one of four cells: (a) on both Thai and U.S. factors, (b) on Thai factor only, (c) on U.S. factor only, or (d) on neither. The kappa value was .52, showing moderate factor agreement across cultures, following the study by Landis and Koch (1977). We repeated this process for all other Thai–U.S. factor pairs based on the Achenbach and Edelbrock (1983) adolescent syndromes, then for all Thai–U.S. factor pairs based on the Achenbach (1991) and Achenbach and Rescorla (2001) adolescent syndromes. For broadband factors (i.e., Internalizing and Externalizing problems), we compared the items loading on the component narrow-band factors for the broadband factors, rather than comparing which narrowband factors loaded on which broadband factors. This was necessary because the latter approach would require the assumption that the narrowband factors were similar across cultures.

Achenbach and Edelbrock (1983) as comparison. First we used the results of the study by Achenbach and Edelbrock (1983) as the comparison target. For the boys, four comparisons across cultures showed moderate agreement, one was fair, and four were slight (Landis & Koch, 1977); one Thai factor had no cross-cultural counterpart among U.S. boys, and one U.S. factor had no counterpart among the Thai boys (see Table 1). Thai factors showing only fair or slight agreement with U.S. factors or having no U.S. counterpart included Immature, Verbally Undercontrolled, and Sex Problems. Cross-cultural agreement kappas for the broadband second-order factors were .50 (moderate) for Externalizing and .39 (fair) for Internalizing.

For the girls, one kappa showed almost perfect factor agreement across cultures, four kappas showed substantial agreement, two were moderate, and two were fair (see Table 2). Thai factors showing only low-level (i.e., fair) agreement with U.S. factors included Covert Delinquency and Habit Problems, Immature. Kappa was .61 (substantial) for the broadband Externalizing factor and .58 (moderate) for the broadband Internalizing factor.

Table 1
Match Between Thai and U.S. 1983 Factors for Boys

Thai no., name	U.S. no., name	κ
1. Anxious, Depressed, Thought Problems	3. Uncommunicative	.48
1. Anxious, Depressed, Thought Problems	5. Obsessive–Compulsive	.12
2. Aggressive, Destructive	6. Hostile Withdrawal	.20
2. Aggressive, Destructive	8. Aggressive	.52
3. Delinquent	7. Delinquent	.51
4. Somatic Problems	1. Somatic Complaints	.51
5. Immature	4. Immature	.30
5. Immature	9. Hyperactive	.12
6. Verbally Undercontrolled	8. Aggressive	.18
7. Sex Problems	—	
—	2. Schizoid	
Externalizing	Externalizing	.50
Internalizing	Internalizing	.39

Note. Numbering of Thai factors refers to the relative size of the factor. Numbering of U.S. numbers also refers to the ordinal position of the factor in terms of its size, not to be confused with its number in Appendix C (Achenbach, 1983). Dashes indicate that there were no Thai or U.S. counterparts.

Table 2
Match Between Thai and U.S. 1983 Factors for Girls

Thai no., name	U.S. no., name	κ
1. Anxious, Depressed	1. Anxious, Obsessive	.60
2. Overt Delinquency	6. Delinquent	.61
3. Verbally Oppositional	7. Aggressive	.55
4. Covert Delinquency	6. Delinquent	.22
5. Withdrawn	4. Depressed, Withdrawn	.67
6. Thought Problems	3. Schizoid	.64
7. Somatic Problems	2. Somatic Complaints	.93
8. Aggressive, Destructive	8. Cruel	.67
9. Habit Problems, Immature	5. Immature, Hyperactive	.33
Externalizing	Externalizing	.61
Internalizing	Internalizing	.58

Note. Numbering of Thai factors refers to the relative size of the factor. Numbering of U.S. numbers also refers to the ordinal position of the factor in terms of its size, not to be confused with its number in Appendix C (Achenbach, 1983).

Achenbach (1991) as comparison. Next we used the results of the Achenbach (1991) study as the comparison target. For boys, two factor pairs showed substantial agreement across cultures, two showed moderate agreement, three showed fair agreement, and one showed slight agreement; one Thai factor had no counterpart among U.S. factors, and one U.S. factor had no Thai counterpart (see Table 3). Thai factors showing only fair or slight agreement with U.S. factors or having no U.S. counterpart included Immature, Verbally Undercontrolled, and Sex Problems. Kappas were .54 for broadband Externalizing (moderate) and .57 for Internalizing (moderate).

For the girls, two kappas showed almost perfect agreement across cultures, three kappas showed substantial agreement, one was moderate, and four were fair; one U.S. factor had no Thai counterpart (see Table 4). Thai factors showing low-level (i.e.,

Table 3
Match Between Thai and U.S. 1991 Factors for Boys

Thai no., name	U.S. no., name	κ
1. Anxious, Depressed, Thought Problems	1. Withdrawn	.37
1. Anxious, Depressed, Thought Problems	3. Anxious, Depressed	.51
2. Aggressive Destructive	8. Aggressive Behavior	.62
3. Delinquent	7. Delinquent Behavior	.51
4. Somatic Problems	2. Somatic Complaints	.71
5. Immature	4. Social Problems	.40
5. Immature	6. Attention Problems	.11
6. Verbally Undercontrolled	8. Aggressive Behavior	.36
7. Sex Problems	—	
—	5. Thought Problems	
Externalizing	Externalizing	.54
Internalizing	Internalizing	.57

Note. Numbering of Thai factors refers to the relative size of the factor. Numbering of U.S. numbers also refers to the ordinal position of the factor in terms of its size, not to be confused with its number in Achenbach (1991). Dashes indicate that there were no Thai or U.S. counterparts.

Table 4
Match Between Thai and U.S. 1991 Factors for Girls

Thai no., name	U.S. no., name	κ
1. Anxious, Depressed	3. Anxious, Depressed	.72
2. Overt Delinquency	7. Delinquent Behavior	.31
3. Verbally Oppositional	8. Aggressive Behavior	.59
4. Covert Delinquency	7. Delinquent Behavior	.37
5. Withdrawn	1. Withdrawn	.87
6. Thought Problems	5. Thought Problems	.76
7. Somatic Problems	2. Somatic Complaints	.87
8. Aggressive, Destructive	8. Aggressive Behavior	.28
9. Habit Problems, Immature	4. Social Problems	.24
—	6. Attention Problems	
Externalizing	Externalizing	.65
Internalizing	Internalizing	.53

Note. Numbering of Thai factors refers to the relative size of the factor. Numbering of U.S. numbers also refers to the ordinal position of the factor in terms of its size, not to be confused with its number in Achenbach (1991). Dash indicates that there were no Thai or U.S. counterparts.

fair) agreement with U.S. factors included Overt Delinquency; Covert Delinquency; Aggressive, Destructive; and Habit Problems, Immature. Kappas for the broadband second-order factors were .65 (substantial) for Externalizing and .53 (moderate) for Internalizing (see Table 4).

Achenbach and Rescorla (2001) as comparison. Finally, we used the results of Achenbach and Rescorla's (2001) study as the comparison target. For the boys, one factor pair showed substantial agreement across cultures, two showed moderate agreement, and three showed fair agreement; two Thai factors had no counterpart among U.S. factors, and two U.S. factors had no Thai counterparts (see Table 5). Thai factors showing only fair or slight agreement with U.S. factors or having no U.S. counterpart included Anxious, Depressed, Thought Problems; Immature; Verbally Undercontrolled; and Sex Problems. Kappas were .49 for broadband Externalizing (moderate) and .42 for Internalizing (moderate).

Table 5
Match Between Thai and U.S. 2001 Factors for Boys

Thai no., name	U.S. no., name	κ
1. Anxious, Depressed, Thought Problems	1. Anxious, Depressed	.35
1. Anxious, Depressed, Thought Problems	2. Withdrawn, Depressed	.28
2. Aggressive, Destructive	8. Aggressive Behavior	.60
3. Delinquent	7. Rule Breaking Behavior	.49
4. Somatic Problems	3. Somatic Complaints	.78
5. Immature	4. Social Problems	.21
6. Verbally Undercontrolled	—	
7. Sex Problems	—	
—	5. Thought Problems	
—	6. Attention Problems	
Externalizing	Externalizing	.49
Internalizing	Internalizing	.42

Note. Numbering of Thai factors refers to the relative size of the factor. Numbering of U.S. numbers also refers to the ordinal position of the factor in terms of its size, not to be confused with its number in Achenbach and Rescorla (2001). Dashes indicate that there were no Thai or U.S. counterparts.

For the girls, two factor pairs showed almost perfect agreement across cultures, two showed moderate agreement, four showed fair, and one slight; one U.S. factor had no Thai counterpart. Thai factors showing only fair or slight agreement with U.S. factors included Overt Delinquency; Covert Delinquency; Thought Problems; Aggressive, Destructive; and Habit Problems, Immature. Kappas for the broadband second-order factors were .56 (moderate) for Externalizing and .34 (fair) for Internalizing (see Table 6).

Syndromal Similarity Across Different U.S. Samples, Compared With U.S. Versus Thai Dissimilarity

Because factor solutions can differ even across different samples from the same population group, it is useful to compare the level of syndromal dissimilarity found in the Thai–U.S. comparisons to what is found across different U.S. samples. For this purpose, we compared the 1991 and 2001 U.S. results (because the 1983 data set was a subset of the 1991 data set, the two were not independent). The U.S. 1991 versus 2001 syndrome comparison yielded the following kappas: Withdrawn = .87, Somatic Problems = .94, Anxious, Depressed = .70, Social Problems = .60, Thought Problems = .53, Attention Problems = .83, Delinquent Behavior = .96, and Aggressive Behavior = .81. Thus, 88% of the U.S. –U.S. comparisons showed substantial or higher agreement, whereas only 20% of the Thai–U.S. comparisons did; and none of the U.S.–U.S. comparisons showed agreement lower than moderate, whereas 45% of the Thai–U.S. comparisons did. The strong similarity between U.S. cohorts stands in sharp contrast to the marked dissimilarity between Thai and U.S. syndromes.

Discussion

Our findings suggest that it may not be appropriate to use U.S.-derived syndromes (or syndrome-derived scales or scoring systems) as a standard for diverse adolescent populations outside the United States without first assessing whether the syndromes fit those other populations. When we compared adolescents of Thailand and the United States, we found a marked syndromal mismatch, using both standard fit indices (NFI, NNFI, and RMSEA) and our kappa approach. With kappa, although 20% (12 of 60) of

Table 6
Match Between Thai and U.S. 2001 Factors for Girls

Thai no., name	U.S. no., name	κ
1. Anxious, Depressed	1. Anxious, Depressed	.47
2. Overt Delinquency	7. Rule Breaking Behavior	.37
3. Verbally Oppositional	8. Aggressive Behavior	.57
4. Covert Delinquency	7. Rule Breaking Behavior	.35
5. Withdrawn	2. Withdrawn, Depressed	.85
6. Thought Problems	5. Thought Problems	.33
7. Somatic Problems	3. Somatic Complaints	.81
8. Aggressive, Destructive	8. Aggressive Behavior	.23
9. Habit Problems, Immature	4. Social Problems	.18
—	6. Attention Problems	
Externalizing	Externalizing	.56
Internalizing	Internalizing	.34

Note. Numbering of Thai factors refers to the relative size of the factor. Numbering of U.S. numbers also refers to the ordinal position of the factor in terms of its size, not to be confused with its number in Achenbach and Rescorla (2001). Dash indicates that there was no Thai counterpart.

our cross-cultural comparisons for the narrowband syndromes met Landis and Koch's (1977) thresholds for "substantial" or "almost perfect" agreement (i.e., kappas ranging from .61 to 1.00); another 45% (27 of 60) showed only "slight" to "fair" agreement (kappas from .00 to .40) or had no cross-cultural counterpart at all. The broadband Internalizing and Externalizing syndromes also failed to show very strong concordance; only 17% (2 of 12) of the comparisons showed substantial or higher agreement across cultural groups.

Several of the specific Thai adolescent syndromes that did not correspond well to U.S. adolescent syndromes fit the specific processes proposed as part of the syndromal sensitivity model. From the literature suggesting that Thai parenting may foster more prolonged dependence and slower psychological maturation than American parenting (see, e.g., Klausner, 1993; Mulder, 1985; Somrongthong & Sitthi-Amorn, 2000), we anticipated—on the basis of the proposed cultural facilitation process—that behavior problems related to dependence or immaturity might form a syndrome in the Thai sample. This was evident in an immature syndrome among Thai boys and a habit problems, immature syndrome in Thai girls, neither of which corresponded to any U.S. adolescent syndrome. Given the strong emphasis in Thai Buddhist culture on avoidance of physical aggression and rule breaking (see, e.g., Limonanda, 1995; Thananart et al., 2000), we anticipated—on the basis of the proposed cultural sanction process—that syndromes might emerge entailing indirect or nonphysical forms of aggression, rebellion, or rule breaking. Consistent with this notion, our findings revealed a verbally undercontrolled syndrome in Thai boys and a covert delinquency syndrome in Thai girls, neither of which was well matched to any U.S. adolescent syndrome. On the basis of the literature documenting the conflicting messages to which Thai boys are exposed regarding sexuality (e.g., Buddhist cultural traditions stressing modesty and sexual restraint vs. social pressure for adolescent boys to engage in sex [e.g., with commercial sex workers; Boonchalaksi & Guest, 1994; Ford & Kittisuksathit, 1994; Knodel, 1997; Limonanda, 1995; Limonanda et al., 1993]), we anticipated—on the basis of the proposed cultural discord process—the possibility of a sex-related syndrome among Thai adolescent boys. We found such a syndrome in the present analyses: The sex problems syndrome included preoccupation with sex, excessive masturbation, wishing to be of the opposite sex, behaving like the opposite sex, and more generally, "sex problems." No sex problems syndrome was reported in any of the three U.S. CBCL adolescent analyses.

The robustness of these distinctive Thai syndromes is underscored by the fact that very similar Thai syndromes were identified in a comparison of Thai and U.S. children (see Weisz et al., 2003). Taken together, the findings support the syndromal sensitivity model—that is, the notion that sets of behaviors addressed very differently by different cultures will be associated with culturally different syndromes—and the Thai-specific syndromes identified here are consistent with three of the processes through which the syndromal sensitivity model is hypothesized to operate: cultural facilitation, cultural sanction, and cultural discord. The findings suggest the potential value of further tests in other cultures of the syndromal sensitivity model and the three hypothesized processes through which the model is thought to operate.

Although syndromal differences may carry important theoretical implications, syndromes that are highly similar across cultures may be important as well. For example, as in previous findings with Thai and U.S. children (Weisz et al., 2003), we found quite similar somatic problems syndromes in Thai and U.S. adolescents. One reason may be that aches, pains, nausea, and other somatic problems co-occur in similar ways across diverse cultures because the etiologies (e.g., child modeling, parental reinforcement of somatic symptoms; see Garralda, 2000; L. S. Walker & Zeman, 1992) operate similarly across cultures. It is also possible that parents in both cultures tend to perceive and report somatic problems as co-occurring because the problems are topographically similar to each other and thus easy to distinguish from the psychological problems (e.g., worrying, sadness) that form the other narrowband syndromes.

Despite Thai–U.S. similarity on the somatic problems syndrome and some others, our overall pattern of findings shows significant dissimilarity across cultures. Such dissimilarity, if replicated in other culture comparisons, has implications for clinical theory, research, and practice across cultural and national boundaries. First, cross-cultural differences in syndromes would raise questions about the feasibility of efforts to develop a universal classification system for all cultures—for example, the *International Statistical Classification of Diseases and Related Health Problems*, 10th edition (World Health Organization, 1992), or "next generation" efforts to produce a culture-transcendent taxonomy (see Hinton & Kleinman, 1993)—because such efforts build on the notion that syndromes or disorders in the taxonomy are similar across cultures. Questions may also arise about the appropriateness of clinical assessments and epidemiologic studies in non-Western societies that have used syndromes and scoring procedures derived from U.S. samples. Certainly there may be many cultures in which youth syndromes match U.S.-derived syndromes well (see, e.g., Achenbach et al., 1987; de Groot et al., 1994; but see also Hartman et al., 1999) and in which the use of common assessment instruments and categories may be quite appropriate. However, our findings suggest that there may also be cultures in which the match to U.S. syndromes is not strong. This suggests that cross-cultural similarity cannot necessarily be assumed but instead should be assessed before applying the syndrome-based categories of one culture to another in assessment, classification, or epidemiologic comparisons.

Our findings are also relevant to youth intervention research. Most evidence-based youth treatments have been developed for use with specific disorders or syndromes (see Weisz, 2004). When a treatment has been developed for a particular syndrome as expressed within a particular culture, it may be appropriate to consider transporting that treatment to a second culture only if the same syndrome has been shown to exist in that culture. Experts on intervention and culture have stressed that treatments found to be beneficial for one ethnic or cultural group may not necessarily be beneficial for other groups (see, e.g., Bernal, Bonilla, & Bellido, 1995; Bernal & Scharron-Del-Rio, 2001; Hall, 2001; Sue, 1998). Here we raise a complementary point—that is, some treatments may not prove so effective when moved from one culture to another, because the syndromes the treatments are designed to address may not exist in both cultures.

Future directions for research are suggested by limitations of the study. First, we compared syndromal structure across only two nations. This highlights the need for information, through future research, on syndromal similarities and differences across other nations, including a focus on nations with high versus low cultural similarity to the United States. Second, our analyses focused on

parent-reported problems of adolescents. It is possible that the syndromes derived—and their cross-national similarity—would be different if youth self-reports were the targets of analysis. Thus, in the future, it would be useful to identify and compare across national samples syndromes derived from youth self-reports and perhaps from other informants, such as teachers, to gauge the extent to which syndromes diverge depending on the perspective of the reporter.

Finally, use of U.S.-derived measures in nations quite different from the United States raises complex questions. Although this approach may miss certain culture-specific features of psychopathology among youth, the search for assessment approaches that can be used across multiple nations and cultures is increasingly important in a world in which large population groups frequently cross national boundaries and international adoption and relocation of children is common. Culture-specific versus culture-general assessment is too complex an issue to be resolved here, but our findings do suggest that use of the same assessment instrument in quite different countries should be preceded by tests of whether the syndromes targeted by the instrument do in fact exist in both countries. Our findings suggest that cultural variations in traditions, beliefs, values, parenting, and socialization practices may influence the ways youth problems co-occur and form into syndromes. If that is the case, then syndromal structure and the processes that shape it may be more variegated across societal boundaries than most theoretical models have yet captured.

References

Achenbach, T. M. (1991). *Manual for the Child Behavior Checklist/4–18 and 1991 Profile.* Burlington: Department of Psychiatry, University of Vermont.

Achenbach, T. M. (1995). Empirically based assessment and taxonomy: Applications to clinical research. *Psychological Assessment, 3,* 261–274.

Achenbach, T. M., & Edelbrock, C. (1981). Behavioral problems and competencies reported by parents of normal and disturbed children aged four to sixteen. *Monographs of the Society for Research in Child Development, 46*(1, Serial No. 188).

Achenbach, T. M., & Edelbrock, C. (1983). *Manual for the Child Behavior Checklist and Revised Child Behavior Profile.* Burlington: University of Vermont, Department of Psychiatry.

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age Forms and Profiles.* Burlington, VT: Achenbach System of Empirically Based Assessment.

Achenbach, T. M., Verhulst, F. C., Baron, G. D., & Althaus, M. (1987). A comparison of syndromes derived from the Child Behavior Checklist for American and Dutch boys aged 6–11 and 12–16. *Journal of Child Psychology and Psychiatry, 28,* 437–453.

Allen, M. J., & Yen, W. M. (2001). *Introduction to measurement theory.* Long Grove, IL: Waveland Press.

Angold, A., & Rutter, M. (1992). Effects of age and pubertal status on depression in a large clinical sample. *Development and Psychopathology, 4,* 5–28.

Bernal, G., Bonilla, J., & Bellido, C. (1995). Ecological validity and cultural sensitivity for outcome research: Issues for the cultural adaptation and development of psychosocial treatments with Hispanics. *Journal of Abnormal Child Psychology, 23,* 67–82.

Bernal, G., & Scharron-Del-Rio, M. R. (2001). Are empirically supported treatments valid for ethnic minorities? Toward an alternative approach for treatment research. *Cultural Diversity and Ethnic Minority Psychology, 7,* 328–342.

Bird, H. R. (1996). Epidemiology of childhood disorders in a cross-cultural context. *Journal of Child Psychology and Psychiatry, 37,* 35–49.

Bollen, K. A. (1989). *Structural equations with latent variables.* New York: Wiley-Interscience.

Boonchalaksi, W., & Guest, P. (1994). *Prostitution in Thailand.* Nakhorn Pathom, Thailand: Institute for Population and Social Research, Mahidol University.

Brislin, R. W. (1970). Back translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1,* 185–216.

Byrne, B. M. (2005). Factor analytic models: Viewing the structure of an assessment instrument from three perspectives. *Journal of Personality Assessment, 85,* 17–32.

Cederblad, M., Pruksachatkunakorn, P., Boripunkul, T., Intraprasert, S., & Hook, B. (2001). Behavior problems and competence in Thai children and youths: Teachers', parents', and subjects' perspectives. *Transcultural Psychiatry, 38,* 64–79.

Cederblad, M., Pruksachatkunakorn, P., Boripunkul, T., Intraprasert, S., & Hook, B. (2003). Sense of coherence in a Thai sample. *Transcultural Psychiatry, 40,* 585–600.

Crijnen, A. A. M., Achenbach, T. M., & Verhulst, F. C. (1997). Comparisons of problems reported by parents of children in 12 cultures: Total problems, externalizing, and internalizing. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 1269–1277.

de Groot, A., Koot, H. M., & Verhulst, F. C. (1994). Cross-cultural generalizability of the Child Behavior Checklist cross-informant syndromes. *Psychological Assessment, 6,* 225–230.

Draguns, J. G. (1982). Methodology in cross-cultural psychology. In I. Al-Issa (Ed.), *Culture and psychopathology* (pp. 33–70). Baltimore: University Park Press.

Edelbrock, C. (1988). Diagnosis and classification. In J. C. Witt, S. N. Elliot, & F. M. Gresham (Eds.), *Handbook of behavior therapy in education* (pp. 99–117). New York: Plenum Press.

Ford, N. J., & Kittisuksathit, S. (1994). Destinations unknown: The gender construction and changing nature of the sexual expressions of Thai youth. *AIDS Care, 6,* 517–531.

Garralda, M. E. (2000). The links between somatization in children and adults. In P. Reder, M. McClure, & A. Jolley (Eds.), *Family matters: Interfaces between child and adult mental health* (pp. 122–134). Philadelphia: Routledge.

Glorfeld, L. W. (1995). An improvement on Horn's parallel analysis methodology for selecting the correct number of factors to retain. *Educational and Psychological Measurement, 55,* 377–393.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Gorsuch, R. L. (2003). *Factor analysis.* In J. A. Schinka & W. F. Velicer (Eds.), *Handbook of psychology: Research methods in psychology* (Vol. 2, pp. 143–164). Hoboken, NJ: Wiley.

Grusec, J. E., & Lytton, H. (1988). *Social development: History, theory, and research.* New York: Springer-Verlag.

Hall, G. C. N. (2001). Psychotherapy research with ethnic minorities: Empirical, ethical, and conceptual issues. *Journal of Consulting and Clinical Psychology, 69,* 502–510.

Hartman, C. A., Hox, J., Auerbach, J., Erol, N., Fonseca, A. C., Mellenbergh, G. J., et al. (1999). Syndrome dimensions of the Child Behavior Checklist and Teacher Report Form: A critical empirical investigation. *Journal of Child Psychology and Psychiatry, 40,* 1095–1116.

Hinton, L., & Kleinman, A. (1993). Cultural issues and international psychiatric diagnosis. In J. A. Costa e Silva & C. Nadelson (Eds.), *International psychiatric diagnosis* (Vol. 1, pp. 111–129). Washington, DC: American Psychiatric Association Press.

Hollingshead, A. B. (1975). *Four-factor index of social status.* Unpublished manuscript, Yale University.

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 32,* 179–185.

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications.* Thousand Oaks, CA: Sage.

Klausner, W. J. (1993). *Reflections on Thai culture.* Bangkok, Thailand: The Siam Society.

Kleinman, A. (1977). Depression, somatization, and the "new cross-cultural psychiatry." *Social Science and Medicine, 11,* 3–10.

Kline, R. B. (1998). *Principles and practice of structural equation modeling.* New York: Guilford Press.

Knodel, J. (1997). An evolutionary perspective on Thai sexual attitudes and behavior. *Journal of Sex Research, 34,* 1–20.

Koenig, L. J., & Gladstone, T. R. G. (1998). Pubertal development and school transition: Joint influences on depressive symptoms in middle and late adolescents. *Behavior Modification, 22,* 335–357.

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33,* 159–174.

Limonanda, B. (1995). Families in Thailand: Beliefs and realities. *Journal of Comparative Family Studies, 26,* 67–82.

Limonanda, B., Tirasawat, P., & Chongvatana, N. (1993). *The demographic and behavioral study of female commercial sex workers in Thailand* (Publication No. 207/36). Bangkok, Thailand: Institute of Population Studies, Chulalongkorn University.

Mulder, N. (1985). *Everyday life in Thailand.* Bangkok, Thailand: D. K. Bookhouse.

Ponce, D. E. (1997). Adolescent psychopathology. In J. Streltzer & W. S. Tseng (Eds.), *Culture and psychopathology: A guide to clinical assessment* (pp. 206–222). Philadelphia: Brunner/Mazel.

Rogler, L. (1989). The meaning of culturally sensitive research in mental health. *American Journal of Psychiatry, 146,* 296–303.

Rothbaum, F., Weisz, J., Pott, M., Miyake, K., & Morelli, G. (2000). Attachment and culture: Security in the United States and Japan. *American Psychologist, 55,* 1093–1104.

SAS Institute. (2004a). *Base SAS 9.1 procedures guide.* Cary, NC: SAS Institute.

SAS Institute. (2004b). *SAS/STAT 9.1 user's guide.* Cary, NC: SAS Institute.

Somrongthong, R., & Sitthi-Amorn, C. (2000). Existing health needs and related health services for adolescents in a slum community in Thailand. *International Journal of Adolescent Medicine and Health, 12,* 191–203.

Sue, S. (1998). In search of cultural competence in psychotherapy and counseling. *American Psychologist, 53,* 440–448.

Suvannathat, C. (1979). The inculcation of values in Thai children. *International Social Science Journal, 31,* 477–485.

Suwanlert, S. (1974). Some personality characteristics of Thai students. In W. P. Lebra (Ed.), *Youth, socialization, and mental health in Asia and the Pacific* (pp. 75–84). Honolulu: University Press of Hawaii.

Thananart, M., Tori, C. D., & Emavardhana, T. (2000). A longitudinal study of psychosocial changes among Thai adolescents participating in a Buddhist ordination program for novices. *Adolescence, 35,* 285–293.

Verhulst, F. C., Achenbach, T. M., Althaus, M., & Akkerhuis, G. W. (1988). A comparison of syndromes derived from the Child Behavior Checklist for American and Dutch girls aged 6–11 and 12–16. *Journal of Child Psychology and Psychiatry, 29,* 879–895.

Wacharasindhu, A., & Panyyayong, B. (2002). Psychiatric disorders in Thai school-aged children: I. Prevalence. *Journal of the Medical Association of Thailand, 85,* 125–136.

Wagatsuma, H. (1977). Problems of language in cross-cultural research. *Annals of the New York Academy of Science, 285,* 141–150.

Walker, E. F. (2002). Adolescent neurodevelopment and psychopathology. *Current Directions in Psychological Science, 11,* 24–28.

Walker, L. S., & Zeman, J. L. (1992). Parental response to child illness behavior. *Journal of Pediatric Psychology, 17,* 49–71.

Waller, N. G. (2003). *MicroFACT 2.1: A microcomputer factor analysis program for ordered polytomous data and mainframes size problems.* St. Paul, MN: Assessment Systems Corporation.

Weisz, J. R. (2004). *Psychotherapy for children and adolescents: Evidence-based treatments and case examples.* Cambridge, England: Cambridge University Press.

Weisz, J. R., McCarty, C. A., Eastman, K. L., Suwanlert, S., & Chaiyasit, W. (1997). Developmental psychopathology and culture: Ten lessons from Thailand. In S. S. Luthar, J. A. Burack, D. Cicchetti, & J. R. Weisz (Eds.), *Developmental psychopathology* (pp. 568–592), Cambridge, England: Cambridge University Press.

Weisz, J. R., Suwanlert, S., Chaiyasit, W., Weiss, B., Achenbach, T. M., & Eastman, K. L. (1993). Behavioral and emotional problems among Thai and American adolescents: Parent reports for ages 12–16. *Journal of Abnormal Psychology, 102,* 395–403.

Weisz, J. R., Suwanlert, S., Chaiyasit, W., Weiss, B., Achenbach, T. M., & Walter, B. (1987). Epidemiology of behavioral and emotional problems among Thai and American children: Parent reports for ages 6–11. *Journal of the American Academy of Child and Adolescent Psychiatry, 26,* 890–897.

Weisz, J. R., Weiss, B., Suwanlert, S., & Chaiyasit, W. (2003). Syndromal structure of psychopathology in children of Thailand and the United States. *Journal of Consulting and Clinical Psychology, 71,* 375–385.

World Health Organization. (1992). *International statistical classification of diseases and related health problems* (10th ed.). New York: World Health Organization.

Received September 24, 2005
Revision received May 15, 2006
Accepted August 1, 2006 ■