Epidemiology of Behavioral and Emotional Problems Among Thai and American Children: Parent Reports for Ages 6 to 11

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Abstract. Behavioral and emotional problems of childhood may reflect the influence of culture: prevailing values and socialization practices may suppress development of some problems while fostering others. The authors explored this possibility, comparing 360 6- to 11-year-olds in the Buddhist-oriented, emotionally controlled culture of Thailand with 600 American 6- to 11-year-olds. Standardized parent reports on 118 child problems revealed 54 Thai–U.S. differences (p < 0.01), generally modest in magnitude. Thai children were rated higher than Americans on 32 problems, particularly those involving Overcontrolled behavior (e.g., shyness, anxiety, depression). Across cultures, boys showed more fighting, impulsivity, and other Undercontrolled behavior than girls, and several age effects emerged. The findings provide epidemiological comparisons for two distinctly different cultures and contribute to a theoretical model of cultural influence. *J. Amer. Acad. Child Adolesc. Psychiat.*, 1987, 26, 6:890–897. Key Words: behavior–emotional problems, epidemiology, cross-culture, Thailand.

The literature on psychopathology has often linked cultural factors to patterns of disturbed behavior. Although most of the research has dealt with adults (Al-Issa, 1982; Marsella, 1979), culture is likely to be influential well before the adult years. Culturally-mediated values and expectations, and the associated behavior of parents and other adults toward children, may influence the types of behavior problems children show when distressed. One result may be cross-national differences in the prevalence of various child behavior problems.

The study of such differences, and cross-national similarities as well, might be useful in at least two ways. First, the data may enrich our base of general information on the epidemiology of child problems. Second, the research can contribute to theory on child psychopathology, suggesting, for instance, which patterns of child disturbance are most strongly influenced by social forces and which may be shaped by more culture-transcendent forces, such as gender or biological and cognitive development.

The present study, an epidemiological survey of child psychological problems in the United States and Thailand, was intended to enhance the scanty data on the prevalence of child problems across national boundaries. Toward this end, we surveyed the prevalence of 118 clinically significant problems. In addition, we sought to contribute to a theory of cultural influence by focusing on two broad behavior problem syndromes linked theoretically to Thai and U.S. cultural patterns.

The syndromes were the two most frequently identified in factor analytic research with children: Overcontrolled problems (e.g., shyness, somaticizing, depression) and Undercontrolled problems (e.g., disobedience, fighting, impulsivity). These syndromes have been found in more than a dozen factor analytic studies (Achenbach and Edelbrock, 1978) and in research with not only Americans (e.g., Achenbach and Edelbrock, 1983; Gordon and Gallimore, 1972; Touliatos and Lindholm, 1976) but also Britains (e.g., Collins et al., 1962), Sicilians (Peterson, 1965), Japanese (Hayashi et al., 1976), and Greeks, Finns, and Iranians (Quay and Parkeupoulos, 1972).

Here, we explored the possibility of cross-national differences in the prevalence of Over- and Undercontrolled problems. One reason to suspect this possibility is that Thai adults, 95% of whom are Buddhist, are said to be unusually intolerant of such Undercontrolled behavior as aggression, disobedience, and disrespectful acts in children (Gardiner and Suttipan, 1977; Moore, 1974; Suwanthath, 1979). Children are taught, instead, to be peaceful, polite, and deferent—to strive for kengchai, an attitude of self-effacement and humbleness that aims to avoid disturbing others (Phillips, 1965; Suwanthath, 1979).

Thai children are also taught to inhibit and control the outward expression of anger and other strong emotions (Gardiner, 1968; National Identity Office, 1984; Suwanthath, 1974) in ways that seem to involve encouragement of Overcontrolled behavior. As one Thai student put it, “parents train their children not to contest the point that they think is right. So, when I am angry with my parents or any elder brother or sister about their regulation or advice, I must be quiet.” Another student commented, “the elders teach their grandchildren to collect their feelings and not show the anger” (Gardiner, 1968, p. 225). Some researchers (e.g., Boesch, 1977; Sangsingko, 1969; Suwanthath, 1974) have suggested that such Thai customs may foster not only politeness and nonaggression but inhibition and anxiety as well.

If Thais, compared with Americans, are less tolerant of Undercontrolled behavior and more tolerant of Overcon-
trolled behavior, one result may be cross-national differences
in the prevalence of the two types of child problems. Through
a kind of suppression-facilitation process (cf. Draguns, 1973;
Weisz et al., in press) the cultural patterns described above
might make Overcontrolled problems more likely in Thai
than in American children and Undercontrolled problems
less likely in Thai than in American children.

A recent study suggested precisely this pattern of differ-
ences. Weisz et al. (in press) sampled 760 child clinic admis-
sions in Thailand and the United States, recording the referral
problems noted by parents in both countries at the time of
clinic intake. Problems that earlier research had shown to
load on the Overcontrolled syndrome were indeed more
frequently noted for Thai than American children; and Un-
dercontrolled problems were reported more often for Ameri-
can than Thai children. These findings are consistent with the
ideas advanced above. Because the study was based on clinic-
referred children only, however, it cannot tell us about the
prevalence of Over- and Undercontrolled problems among
nonreferred children in the two countries. Moreover, the
clinic data were drawn from unstructured problem reports by
referring parents, based on methods that were not standard-
ized across cultures.

The present study, by contrast, used a standardized research
instrument designed to permit relatively uniform assessment
of child problems across national boundaries, and the study
focused on the general child population rather than clinic-
referred children. The study was thus a systematic epidemi-
ological comparison of the children of two very different cul-
tures on a broad range of behavioral and emotional problems,
and on two broad syndromes of special theoretical interest.
We also explored developmental differences in prevalence
across the age range sampled, and we assessed the extent to
which age might interact with culture.

Finally, we probed for sex differences and interactions of
sex with culture and age. In the United States, more Under-
controlled problems are reported for boys than girls (Achen-
bach and Edelbrock, 1981; Rutter and Garmezy, 1983), and
some have suggested that sex typing and parental behavior
may foster this difference (Maccoby and Jacklin, 1974). In
Thailand, sex-typing seems in some respects almost the re-
verse of U.S. patterns; boys receive more rigorous training
than girls in Buddhist ideals, and all boys (but not girls) are
expected to reside in the temple for a period of priesthood
before marriage. Are such gender differences associated with
a moderating, or reversal, of sex differences found in the
United States; or, are sex differences like those found in U.S.
samples also found in so different a culture as that of Thai-
land? This report examines these questions.

Method

Sampling Procedures

U.S. sample. The American sample was drawn from urban,
suburban, and semirural environments in Washington, D.C.,
Maryland, and Virginia. Census tract and block data were
used to randomly select those families asked to participate; of
those asked, 82.3% took part. For other procedural details,
see Achenbach and Edelbrock (1981).

Thai sample. The Thai sample was obtained from urban,
suburban, and semirural environments in Bangkok and one
district within each of the four major regions of Thailand
(Northwest, Northeast, Central, South). The procedure was
designed to mirror the selection of urban, suburban, and
semirural environments in the United States. Because all Thai
children are required to complete 7 years of elementary
school, and the law is strictly enforced, the schools provided
an appropriate sampling frame for 6- to 11-year-olds. Accord-
ingly, we sampled children from 38 elementary schools across
the five population districts. The 38 included 29 public and 9
private schools, to mirror the proportions of such schools
nationwide. From each school we randomly selected grade
levels, classes, and a maximum of one child from each selected
class, e.g., “the seventh child on the alphabetical class list.”
Parents (or guardians) of the selected children were then asked
to participate; of those contacted, 91.5% took part.

Interview Procedures

All U.S. interviews were conducted in the subjects’ homes
by one of five trained interviewers; Thai interviews were
conducted at home or at the child’s school (depending on
parent preference) by one of two trained Thai interviewers.
The interviewers determined whether the child had been
referred for any mental health-related services during the
previous year. Thai and American children for whom the
answer was yes were not included in the sample. The inter-
viewer then read aloud a standardized problem-report mea-
sure (see below) while the parent followed along on another
copy. As the parent answered each question, the interviewer
recorded the answers.

CBCL. In the United States, the problem-report measure
was the Child Behavior Checklist (CBCL) (Achenbach and
Edelbrock, 1983). It includes questions about child and parent
demographics, questions about the child’s competence in
school and elsewhere, and a list of 118 specific problems (e.g.,
“argues a lot, fears going to school, feels too guilty”). Parents
indicate the degree to which their child shows each problem
by ratings of 0, not true of the child; 1, somewhat or some-
times true; or 2, very true or often true. The test-retest
reliability of these problem items, estimated via intraclass
correlations (ICC) between parent reports at 1-week intervals,
was 0.95 (p < 0.01). The ICC for inter-interviewer reliability
averaged 0.96 (p < 0.01; see Achenbach and Edelbrock, 1981,
1983). Second order principal components analyses of CBCL
narrow-band scale scores (Achenbach and Edelbrock, 1983)
have revealed broad-band Overcontrolled and Undercon-
trolled syndromes, as described above.

TYC. Thai interviewers administering the Thai Youth
Checklist (TYC). This Thai-language measure was designed
to be sufficiently similar in format and content to the CBCL
to permit cross-cultural comparisons, but also to be suffi-
ciently sensitive to Thai culture and child behavior to detect
patterns of particular importance in that country. The TYC
format is the same as that for the CBCL: demographic items,
followed by competency items, then problem items, using a
0–1–2 rating scale. Some competency items are patterned
after those of the CBCL, but most are different (e.g., we added
“taking care of younger siblings,” a role often played by Thai
youth, and we dropped “Is your child in a special class?”.)
because most Thai schools have no special classes.) The 118 CBCL problem items are included in the TYC and are listed in the same order as on the CBCL, except that we divided CBCL item No. 105, "Uses alcohol or drugs" into two TYC items, "Uses alcohol" and "Uses drugs," at the recommendation of Thai judges. (For the present analyses, though, we combined these two TYC items, thus forming, in effect, a single problem item, as on the CBCL.) In addition, 24 other problem items were added to the TYC. Of these, 20 were derived from data on the referral problems of 376 admissions to Thai child guidance clinics (reported in Weisz et al., in press), and four were added at the recommendation of Thai clinicians who reviewed drafts of the TYC.

The TYC was translated into Thai (following Draguns, 1982; Brislin, 1970; Wagatsuma, 1977) using three steps of translation and back translation. One step involved a professional translator. Two steps involved two bilingual Thai clinical psychologists and one bilingual Thai anthropologist. We aimed for linguistic parallelism and for simplicity of expression. The translation was easily understood by most Thai parents. As an estimate of test-retest reliability, we obtained an ICC of 0.81 (p < 0.01) for problem scores derived from 10 parents retested after a 1-week interval. The ICC for inter-interviewer reliability was 0.91 (p < 0.01) for the two Thai interviewers independently interviewing the same 10 parents.

Subjects and Research Design

The total sample included 960 children, 360 from Thailand and 600 from the United States. Within each culture, the sample was perfectly balanced for age and sex. The Thai sample included 30 boys and 30 girls at each yearly age level from 6 through 11. The U.S. sample included 50 boys and 50 girls at each age. Years 6 to 7, 8 to 9, and 10 to 11 were configured into three age groups. The resulting design was a 3 (age group) × 2 (sex) × 2 (culture) factorial, with proportional cell Ns throughout (i.e., 60 per cell in the Thai sample; 100 per cell in the U.S.).

Respondent characteristics. Of the 360 Thai respondents, 60.3% were mothers, 23.8% fathers, and 15.9% others such as foster parents or grandparent guarantors. In the U.S. sample of 600, the corresponding figures were 83.5%, 13.7%, and 2.9%. All of the Thai sample were pure Asian and ethnic Thai, except for one who had a Caucasian parent. The U.S. sample was 80.3% white, 17.8% black, and 1.9% other. Given the central role of religious traditions in Thai culture, we asked Thai parents to indicate their religious affiliation, if any. Consistent with nationwide statistics, 95.5% of our sample was identified as Buddhist, 3.1% as Muslim, and 1.4% as Christian.

A search for Thai socioeconomic status (SES) classification schemes based on parent occupation revealed five systems, all developed for masters theses in Thai universities; unfortunately, we were unable to find information on the validity of these systems, nor was information on coding procedures provided in sufficient detail for us to use the systems with confidence. We therefore applied Hollingshead's (1957) SES system to all parent occupations. The mean rating on Hollingshead's 7-step scale was 3.86 for the U.S. sample (S.D. = 1.72), slightly higher than the midpoint of 4 (on this scale, 1 = highest SES and 7 = lowest SES). The Thai mean was 4.73 (S.D. = 1.80). The Thai figures should be viewed with caution, because they reflect the use of an American system in a culture for which it was not designed.

Results

We tested group differences in (1) scores for total problems (i.e., the sum of all 1 and 2 ratings across all problem items); (2) ratings on each of the 118 specific problem items; and (3) composite scores for Over- and Undercontrolled problems. Because of the numerous statistical tests involved, it was important to reduce the risk of chance findings; accordingly, we accepted as significant only those group differences that reached $p = 0.01$. Moreover, because our large sample afforded very high statistical power, it was important to evaluate the magnitude as well as the statistical significance of effects; thus, we interpreted all significant effects using Cohen's (1977) criteria for magnitude. Cohen classifies ANOVA effects as small if they account for 1% to 5.9% of the variance, medium if 5.9% to 13.8%, and large if $> 13.8%$.

Total Problem Scores

We first performed a $3 \times 2 \times 2$ (age × sex × culture) ANOVA on the total problem score, i.e., the sum of all 1 and 2 ratings on the 118 problems that were identical for the TYC and CBCL, plus “other physical problems” and “additional problems.” The analysis revealed a main effect of culture, $F(1, 948) = 12.37, p < 0.001$. Thai children had higher problem scores than American children, but the difference was only 3.4 points on a 240-point scale (means: 24.2 and 20.8). The effect of culture accounted for 1.28% of the variance in total problem scores, so it was “small” by Cohen's (1977) criteria. No other main or interaction effects were significant (all $F < 1.7$; all $p > 0.20$).

Individual Problems

The next analysis involved a series of $3 \times 2 \times 2$ (age × sex × culture) ANOVAs, each focused on the ratings for one of the 118 problems common to the CBCL and TYC. The results are summarized in Table 1.

Cross-national differences. Thai-U.S. differences were significant for 54 of the 118 problems. By Cohen's criteria, 39 of the differences qualified as small, four as medium, and two as large. The other nine accounted for less than 1% of the variance. Five of the six effects that qualified as medium or large showed Thai children to have higher problem scores than American children, and four of those five involve some form of somatic difficulty (Table 1). These include: No. 24 Doesn't eat well, No. 49 Constipated, No. 51 Feels dizzy, and No. 102 Underactive, lacks energy. A broader look, focused on all 54 differences, revealed higher ratings for Thai children on 32 of the problems and higher ratings for American children on 22 of the problems.

Age differences. As Table 1 shows, 14 of the 118 problems showed significant age effects. Of these, 13 qualified as small by Cohen's (1977) criteria, and none qualified as medium or large. Of the 14 age effects, three resulted from significant increases in problem prevalence with age (i.e., linear trend significant at < 0.01): No. 51 Feels dizzy; No. 61 Poor
<table>
<thead>
<tr>
<th>Type</th>
<th>Problem</th>
<th>Nationality</th>
<th>Sex</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>Acts too young (U &gt; T)</td>
<td>(2)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>UG</td>
<td>Behaves like opposite sex</td>
<td>–</td>
<td>G &gt; B (1)</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Brags (U &gt; T)</td>
<td>(3)**</td>
<td>B &gt; G (3)**</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Can’t concentrate</td>
<td>–</td>
<td>B &gt; G (2)**</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Hyperactive</td>
<td>–</td>
<td>B &gt; G* (&lt;1)</td>
<td>–</td>
</tr>
<tr>
<td>M</td>
<td>Confused (T &gt; U)</td>
<td>(2)**</td>
<td>B &gt; G* (&lt;1)</td>
<td>–</td>
</tr>
<tr>
<td>M</td>
<td>Daydreams (U &gt; T)</td>
<td>(5)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Demands attention (U &gt; T)</td>
<td>(&lt;1)**</td>
<td>B &gt; G** (1)</td>
<td>D* (1)</td>
</tr>
<tr>
<td>U</td>
<td>Destroys own things</td>
<td>–</td>
<td>B &gt; G** (2)</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Doesn’t eat well (T &gt; U)</td>
<td>(6)**</td>
<td>–</td>
<td>D** (2)</td>
</tr>
<tr>
<td>U</td>
<td>Poor peer relations (U &gt; T)</td>
<td>(2)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Easily jealous (U &gt; T)</td>
<td>(3)**</td>
<td>D* (1)</td>
<td>–</td>
</tr>
<tr>
<td>OB</td>
<td>Fears (T &gt; U)</td>
<td>(5)**</td>
<td>–</td>
<td>D* (1)</td>
</tr>
<tr>
<td>O</td>
<td>Fears own impulses (T &gt; U)</td>
<td>(2)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>M</td>
<td>Feels alone (U &gt; T)</td>
<td>–</td>
<td>G &gt; B* (1)</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Feels persecuted (U &gt; T)</td>
<td>(&lt;1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>Accident prone (T &gt; U)</td>
<td>(5)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Gets in many fights</td>
<td>–</td>
<td>B &gt; G** (1)</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Hangs around bad peers (U &gt; T)</td>
<td>(1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Impulsive</td>
<td>–</td>
<td>B &gt; G** (2)</td>
<td>–</td>
</tr>
<tr>
<td>OG</td>
<td>Likes to be alone (U &gt; T)</td>
<td>(1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Lying or cheating (T &gt; U)</td>
<td>(1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>Bites fingernails (U &gt; T)</td>
<td>(3)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Nightmares</td>
<td>–</td>
<td>G &gt; B* (&lt;1)</td>
<td>D* (1)</td>
</tr>
<tr>
<td>OB</td>
<td>Constipated (T &gt; U)</td>
<td>(13)**</td>
<td>G &gt; B* (&lt;1)</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Too fearful or anxious (T &gt; U)</td>
<td>(2)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Feels dizzy (T &gt; U)</td>
<td>(15)**</td>
<td>–</td>
<td>I* (&lt;1)</td>
</tr>
<tr>
<td>–</td>
<td>Overeating</td>
<td>–</td>
<td>–</td>
<td>I* (1)</td>
</tr>
<tr>
<td>–</td>
<td>Overweight</td>
<td>–</td>
<td>–</td>
<td>I* (1)</td>
</tr>
<tr>
<td>O</td>
<td>Headaches (U &gt; T)</td>
<td>(&lt;1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Nausea, feels sick (U &gt; T)</td>
<td>(&lt;1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>OB</td>
<td>Problems with eyes (U &gt; T)</td>
<td>(&lt;1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>OB</td>
<td>Skin problems (U &gt; T)</td>
<td>(&lt;1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Stomachaches, cramps (U &gt; T)</td>
<td>(1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>Picks nose, skin, other (T &gt; U)</td>
<td>(3)**</td>
<td>–</td>
<td>D* (1)</td>
</tr>
<tr>
<td>U</td>
<td>Poor schoolwork (T &gt; U)</td>
<td>(B)**</td>
<td>B &gt; G** (1)</td>
<td>I* (1)</td>
</tr>
<tr>
<td>UB</td>
<td>Prefers younger children (T &gt; U)</td>
<td>(5)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Refuses to talk (T &gt; U)</td>
<td>(2)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Screams a lot (T &gt; U)</td>
<td>(1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Secretive (U &gt; T)</td>
<td>(1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Self-conscious (U &gt; T)</td>
<td>(7)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>UB</td>
<td>Sets fires (T &gt; U)</td>
<td>(2)**</td>
<td>B &gt; G* (&lt;1)</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Showing off or clowning (U &gt; T)</td>
<td>(2)**</td>
<td>B &gt; G** (2)</td>
<td>D* (1)</td>
</tr>
<tr>
<td>O</td>
<td>Shy or timid (T &gt; U)</td>
<td>(2)**</td>
<td>–</td>
<td>D* (1)</td>
</tr>
<tr>
<td>O</td>
<td>Sleeps little (U &gt; T)</td>
<td>(&lt;1)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Sleeps much (T &gt; U)</td>
<td>(3)**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>Speech problems</td>
<td>–</td>
<td>B &gt; G* (&lt;1)</td>
<td>–</td>
</tr>
<tr>
<td>O</td>
<td>Stares blankly (T &gt; U)</td>
<td>(1)**</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. Problems are designated with their CBCL item numbers and brief labels indicating item wording. Numbers in parentheses indicate the percentage of variance in item ratings accounted for by each independent variable in those cases where the effect was significant at p < 0.01.

* O, problem loads on Overcontrolled syndrome for both boys and girls aged 6 to 11 (Achenbach and Edelbrock, 1983); U, problem loads on Undercontrolled syndrome for both boys and girls; UB/UG, problem loads on Undercontrolled syndrome for boys/girls only; UB/UG, problem loads on Undercontrolled syndrome for both boys and girls; UB/UG, problem loads on Undercontrolled syndrome for boys/girls only; M, problem loads on both Over- and Undercontrolled syndromes for some age/sex group(s); –, problem does not load on either Over- or Undercontrolled syndrome.

** T > U, Thais had higher mean ratings than Americans; U > T, vice versa.

* B > G, boys had higher mean ratings than girls; G > B, vice versa.

+ I, mean ratings increased with increasing age; D, mean ratings decreased with increasing age; N, mean ratings showed a nonlinear change with age.

* Not significant if one adjusts for the number of p < 0.01 findings expected by chance, using a 0.01 protection level (Feild and Armenakis, 1974; Sakoda et al., 1954).

*p < 0.01; **p < 0.001; ***p < 0.0001. (continued on p. 894)
schoolwork; and No. 53 Overeating. Nine age effects involved age-related declines in prevalence: No. 20 Destroys own things, No. 24 Doesn't eat well, No. 29 Fears, No. 47 Nightmares, No. 58 Picks nose or skin, No. 74 Shows off, No. 75 Shy, No. 108 Wets bed, and No. 109 Whines.

Sex differences. Table 1 also indicates that 21 of the 118 problems showed significant sex effects. Of these, 12 qualified as small in magnitude by Cohen's (1977) criteria, and none qualified as medium or large. Of the 21 sex effects, 14 resulted from higher scores among boys than girls, whereas 7 showed the reverse sex difference (see table).

Culture \times age interactions. The item-by-item analyses revealed culture \times age interactions on eight of the 118 items. Of these eight, shown in Table 2, five resulted partly from the fact that age group differences were significant (<0.01) among Thais but not Americans: No. 21 Destroys others' property, No. 36 Accident prone, No. 51 Feels dizzy, No. 86 Stubborn, and No. 112 Worrying. An exception was item No. 55 Overweight, which increased sharply with age among American children (p < 0.0001) but decreased nonsignificantly with age among Thais. The remaining culture \times age interactions involved no significant (0.01) component effects.

Culture \times sex interactions. As Table 2 shows, six problems showed culture \times sex interactions. On three of the problems, boys and girls differed significantly among Thais but not Americans. On No. 43 Lying, boys were rated higher than girls in Thailand, but the sex difference was not significant in the United States; on No. 49 Constipated and No. 64 Prefers younger children, girls were rated higher than boys in Thailand, but the sex difference was not significant in the United States. On one problem, No. 95 Temper tantrums or hot temper, American boys were rated higher than girls, but Thai boys and girls did not differ reliably. The remaining culture \times sex interactions involved no significant (0.01) component effects.

Culture \times age \times sex. As Table 2 shows, there were no age \times sex interactions, but there was a significant triple interaction on No. 35 Feels worthless or inferior. A breakdown of this interaction revealed only two marginally significant group differences. Among 8- to 9-year-olds (but not among older or younger children), Thai boys were rated lower than both Thai girls and U.S. boys (both p < 0.02).

Composite Over- and Undercontrolled Scores.
To compare groups on Over- and Undercontrolled problems, we computed two composite scores for each child, following a procedure developed in earlier research (Weisz et al., in press). To calculate each child's Overcontrolled score, we summed all 1 and 2 ratings on those problems that fit the empirically-derived Overcontrolled syndrome for that child's age and sex group, in principal components analyses by Achenbach and Edelbrock (1983). This total was divided by

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**Table 1.** Items Showing Significant (p < 0.01) Interactions Involving Culture, Age, and Sex

<table>
<thead>
<tr>
<th>Problem</th>
<th>Nationality</th>
<th>Sex</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stores up unneeded things (T &gt; U)</td>
<td>(2)*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Strange ideas (T &gt; U)</td>
<td>(&lt;1)*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stubborn or sullen (T &gt; U)</td>
<td>(3)<em>&lt;sup&gt;</em>**&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moody (T &gt; U)</td>
<td>(5)<em>&lt;sup&gt;</em>**&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sulks a lot (T &gt; U)</td>
<td>(23)<em>&lt;sup&gt;</em>**&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Suspicious (T &gt; U)</td>
<td>(2)<em>&lt;sup&gt;</em>**&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Swearing/obscenity language (T &gt; U)</td>
<td>(3)<em>&lt;sup&gt;</em>**&lt;/sup&gt;</td>
<td>B &gt; G&lt;sup&gt;*&lt;/sup&gt; (&lt;1)</td>
<td>-</td>
</tr>
<tr>
<td>Talks or walks in sleep (T &gt; U)</td>
<td>(1)*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Teases a lot</td>
<td>-</td>
<td>B &gt; G (2)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>N&lt;sup&gt;*&lt;/sup&gt; (1)</td>
</tr>
<tr>
<td>Thumb sucking (U &gt; T)</td>
<td>(1)<em>&lt;sup&gt;</em>**&lt;/sup&gt;</td>
<td>G &gt; B&lt;sup&gt;*&lt;/sup&gt; (&lt;1)</td>
<td>-</td>
</tr>
<tr>
<td>Too concerned w/neatness (T &gt; U)</td>
<td>(4)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trouble sleeping</td>
<td>(1)<em>&lt;sup&gt;</em>**&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Truancy, skips school (T &gt; U)</td>
<td>(6)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Underactive, lacks energy (T &gt; U)</td>
<td>(1)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Unhappy, sad, depressed (T &gt; U)</td>
<td>(4)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Unusually loud (T &gt; U)</td>
<td>(2)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-</td>
<td>D&lt;sup&gt;***&lt;/sup&gt; (2)</td>
</tr>
<tr>
<td>Wets bed (T &gt; U)</td>
<td>-</td>
<td>-</td>
<td>D&lt;sup&gt;*&lt;/sup&gt; (1)</td>
</tr>
<tr>
<td>Whines</td>
<td>(2)&lt;sup&gt;***&lt;/sup&gt;</td>
<td>G &gt; B&lt;sup&gt;**&lt;/sup&gt; (1)</td>
<td>-</td>
</tr>
<tr>
<td>Wishes to be opposite sex (T &gt; U)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Table 2.** Items Showing Significant (p < 0.01) Interactions Involving Culture, Age, and Sex

<table>
<thead>
<tr>
<th>Problem</th>
<th>Probability</th>
<th>% Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destroys others' property</td>
<td>&lt;0.005&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Accident prone</td>
<td>&lt;0.005</td>
<td>2</td>
</tr>
<tr>
<td>Feels dizzy</td>
<td>&lt;0.01&lt;sup&gt;a&lt;/sup&gt;</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Overweight</td>
<td>&lt;0.005</td>
<td>1</td>
</tr>
<tr>
<td>Stubborn</td>
<td>&lt;0.005</td>
<td>1</td>
</tr>
<tr>
<td>Talks about killing self</td>
<td>&lt;0.01&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Wets self during day</td>
<td>&lt;0.005&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Worrying</td>
<td>&lt;0.005&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Lying or cheating</td>
<td>&lt;0.01&lt;sup&gt;a&lt;/sup&gt;</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Nervous movements</td>
<td>&lt;0.01&lt;sup&gt;a&lt;/sup&gt;</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Constipated</td>
<td>&lt;0.001&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Prefers younger children</td>
<td>&lt;0.01&lt;sup&gt;a&lt;/sup&gt;</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Sees things not there</td>
<td>&lt;0.01&lt;sup&gt;a&lt;/sup&gt;</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Temper tantrums or hot temper</td>
<td>&lt;0.005&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Feels worthless or inferior</td>
<td>&lt;0.005&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
</tr>
</tbody>
</table>

<sup>a</sup> Not significant if one adjusts for the number of p < 0.01 findings expected by chance, using a 0.01 protection level (Feild and Armenakis, 1974; Sakoda et al. 1954).
the number of all problems (of the 118 total) that load on that syndrome for the child's age and sex group, and the resulting proportion scores were multiplied by 100 to convert to percentages; these were the Overcontrolled scores. Undercontrolled scores were computed in an analogous manner. (As noted elsewhere [Weisz et al., in press], a limitation of this procedure is that it is based on principal components analyses of data from American samples. One of our long-term objectives is to apply principal components analysis to TYC data from clinic-referred Thai children, to assess problem patterning, or "syndromes," among Thai children.)

A $3 \times 2 \times 2$ (age $\times$ sex $\times$ culture) ANOVA of Overcontrolled scores revealed only a significant main effect of culture, $F(1,948) = 12.07, p < 0.005$. More Overcontrolled behavior was reported for Thai children than for Americans (means: 19.3 and 16.2). The effect accounted for 1.24% of the variance, and was thus "small" by Cohen's (1977) standards.

When Undercontrolled scores were subjected to a $3 \times 2 \times 2$ (age $\times$ sex $\times$ culture) ANOVA, no effects involving culture were significant. Instead, only the main effect of sex was significant, $F(1,948) = 17.54, p < 0.0001$. More Undercontrolled behavior was reported for boys than girls (means, 26.8 and 21.8). The effect accounted for 1.79% of the variance and was thus "small" by Cohen's (1977) criteria.

**Discussion**

Are cultural differences associated with different patterns of child psychological problems? The findings presented here suggest that the answer may be yes, at least when American and Thai cultures are compared. The cross-national differences identified here were surprisingly modest, however. More than half the 118 problems showed no significant Thai-U.S. difference in prevalence. Moreover, only six of the Thai-U.S. differences that were significant qualified as "medium" or "large" according to Cohen's (1977) variance-accounted-for criteria. The broad similarities between Thai and U.S. patterns are reminiscent of the similarities found by Achenbach et al. (1987) when they used methods similar to those used here to compare Dutch and American children. The similarities found here, though, may be especially important given the substantial dissimilarity between Thai and American culture.

The significant cross-national differences that were identified here offer partial support for the problem suppression-facilitation model, the idea that culturally mediated values, expectancies, and child-rearing practices may suppress the development of certain types of child problems and foster the development of others. Our findings suggest that Overcontrolled problems may be more prevalent in Thai than in American children. The same conclusion emerged from an earlier analysis of child clinic referral problems in Thailand and the United States (Weisz et al., in press). The pattern is consistent with the idea that the traditional, Buddhist-influenced Thai emphasis on quietness, inhibition, and deference may foster development of Overcontrolled problems, at least in comparison with U.S. traditions and practices.

In the present study, as in the clinic referral study noted above, some of the most pronounced Thai-U.S. differences involved problems with somatic overtones. This suggests the further possibility that Thai children may be more likely than their American age-mates to internalize distress in the form of bodily rather than purely psychological "symptoms."

Although the present findings concur with clinic referral findings in some respects, there are also potentially significant differences. First, the clinic referral study revealed higher scores on Undercontrolled problems for American than Thai children, but the present study did not. Second, a number of specific somatic complaints that were most commonly listed as referral problems in Thailand and rarely listed in the U.S. (e.g., headaches) were found here to be slightly more prevalent in the U.S. than the Thai sample.

These differences between present and previous findings offer grist for the theoretical mill, suggesting useful hypotheses about the nature of cultural influence. For example, if headaches are relatively rare among Thai children, but very common as a reason for clinic referral in Thailand, this may indicate that children's headaches are a particular source of concern to Thai adults. A recent study of adult attitudes toward child problems (Weisz et al., 1986) indirectly supports this possibility. The findings indicated that Thai parents, teachers, and clinical psychologists regard both Over- and Undercontrolled child psychological problems as less serious and more likely to improve spontaneously than do corresponding groups of American adults. Perhaps certain somatic complaints, such as headaches, are common referral problems in Thailand despite their low prevalence because they seem more "medical" than "psychological" to Thai adults (some made their way to mental health clinics only after an initial medical clinic referral). The possibility may bear further study. It illustrates the potential heuristic value of a research strategy contrasting epidemiological and clinic-referral findings.

As the preceding discussion suggests, research on child clinic referral must attend to the role of adult attitudes. This is also true of epidemiological research of the type reported here. Parent reports on the incidence of various child problems are certainly influenced by the actual occurrence and intensity of those problems. The parent reports may also be influenced by cultural context, however, in at least three ways. First, the cultural milieu may color adults' judgments about what is appropriate for children at a given age; such judgments could help determine whether parents would report, for example, that their child "talks too much" (item No. 93 on the CBCL and TYC). The amount of talking considered normal by American parents, might well be considered "too much" by parents in a culture where children are expected to be quiet in the presence of adults. Second, cultural milieu may color adults' judgments about what is usual for children at a given age; such judgments could influence the likelihood that parents would report, for example, that their child is "unusually loud" (No. 104). Third, parent reports may be influenced by culture-bound definitions of concepts embedded in the problem items. For example, the Thai definition of "swearing" (No. 90) includes language that would be considered merely impolite in the United States; swearing includes labeling a peer with the Thai term for a monitor lizard (considered a source of bad luck) or insulting a peer's parent. Thus, the fact that Thai parents reported twice as much swearing among their children as did American parents ($p$ for the Thai-U.S. difference $< 0.0001$; 2.6% of variance accounted for) may
reflect, in part, cross-cultural differences in the breadth of the concept of swearing.

The findings revealed several sex differences that cut across these two very different cultures. In particular, our finding that boys were rated as more undercontrolled than girls, regardless of culture, is in harmony with previous findings from western cultures (e.g., Achenbach & Edelbrock, 1981; Rutter & Garmezy, 1983). Moreover, our failure to find any sex difference on total problems agrees with previous evidence (Achenbach & Edelbrock, 1981) discounting the stereotype that boys present more behavior problems than girls; the only sex difference we could find concerned not the number of behavior problems but rather their form. At the level of specific problems, we found sex differences on 21 problems. It is intriguing theoretically that 17 of the 21 replicated sex differences that were also found in the Dutch-U.S. epidemiological comparison (Achenbach et al., 1987), and none of the 21, ran counter to the Dutch-U.S. differences. (Several Dutch-U.S. sex differences were not replicated in the present study, but this may have been caused partly by the fact that the Dutch-U.S. sample included a broader age range, and a larger sample, and thus afforded more statistical power than the present sample.) The similarities suggest sex differences that may be robust across very different cultural settings.

The age differences identified in the present study are difficult to characterize in any general way, but they constitute a potentially valuable base of data, nonetheless. As age-related epidemiological data accumulate for various cultures, we will move even closer to the point that significant inferences about development can be drawn. Such data should eventually help us judge the degree to which age differences observed in a given culture reflect culture-specific factors (such as differential treatment of different age groups by parents and other adults within the culture) versus such culture-general forces as biological and cognitive development. Similar prospects exist, of course, for the accumulating data on sex differences across cultures.

Two goals for future research on Thai-U.S. differences and similarities should be mentioned here. First, the identification of problem syndromes among Thai children (e.g., via principal components or factor analysis of problem reports for disturbed children) could pay rich dividends; the findings could help investigators structure comparisons on dimensions known to be similar across the cultures. Second, future research might profitably include children younger or older than the 6- to 11-year age range; to round out the picture of development across cultures, we will need to add evidence on early childhood and adolescence. Certainly, the evidence presented here, and elsewhere to date, must be regarded as only part of an expanding picture of the interplay of culture, sex, and maturation in the development of child psychopathology.

References


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