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ค่าเกณฑ์เฉลี่ยและคุณสมบัติของเครื่องมือ : แบบประเมินจุดแข็งและจุดอ่อนฉบับภาษาไทย

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บทคัดย่อ

วัตถุประสงค์ เพื่อศึกษาค่าเกณฑ์เฉลี่ยและคุณสมบัติของเครื่องมือแบบประเมินจุดแข็งจุดอ่อน (Strengths and Difficulties Questionnaire: SDQ) ทั้ง 3 ชุด ได้แก่ ชุดผู้ปกครอง ชุดครู และชุดประเมินตนเอง เพื่อประเมินคุณลักษณะด้านบวกและด้านลบเกี่ยวกับพฤติกรรมของเด็กและวัยรุ่น ซึ่งข้อคำถามมีความสัมพันธ์กับภาวะอาการทางคลินิก

วัสดุและวิธีการ สุ่มตัวอย่างแบบแบ่งเป็นชั้นภูมิ จำนวนทั้งสิ้น 13 จังหวัด ประกอบไปด้วย กลุ่มตัวอย่างคือนักเรียนอายุตั้งแต่ 5-16 ปี จำนวน 9,491 คน เก็บตัวอย่างด้วยชุดแบบประเมิน 3 ชุด คือ ชุดประเมินโดยผู้ปกครอง ครู และตนเอง วิเคราะห์ค่าความสอดคล้องภายใน Cronbach's alpha และค่าสัมประสิทธิ์สหสัมพันธ์แบบเพียร์สัน ทดสอบสมมติฐานความแตกต่างระหว่างเพศเปรียบเทียบพื้นที่ชนบทและเขตเมือง และวิเคราะห์ปัจจัยเพื่อดูความเหมาะสมของโครงสร้างข้อคำถาม การวิเคราะห์ข้อมูลได้จัดแบ่งคะแนนออกเป็น 3 กลุ่มคือ กลุ่มปกติ กลุ่มเสี่ยง และกลุ่มมีปัญหา

ผล การประเมินค่าเกณฑ์เฉลี่ยของ ระดับคะแนนมีปัญหา ในแบบประเมินจุดแข็งและจุดอ่อนฉบับภาษาไทยนั้น ชุดประเมินโดยผู้ปกครอง ครู และตนเอง มีค่า 19-40 17-40 และ 19-40 ตามลำดับ ซึ่งสูงกว่าฉบับที่มีการศึกษาในประเทศแถบตะวันตกเล็กน้อย ดังนั้นจึงควรมีการใช้จุดตัดคะแนนเพื่อคัดแยกเด็กมีปัญหาออกจากเด็กกลุ่มอื่น ๆ โดยใช้เกณฑ์เฉลี่ยของไทย ในด้านความเชื่อมั่นพบว่ามีค่าความสอดคล้องภายในในระดับสูง ปัจจัยด้านอายุ เพศ มีลักษณะความสัมพันธ์สอดคล้องกับฉบับภาษาอังกฤษ และฉบับแปลอื่น ๆ

สรุป แบบประเมินจุดแข็งและจุดอ่อนฉบับภาษาไทยทั้ง 3 ชุด มีค่าเกณฑ์เฉลี่ยและจุดตัดคะแนนเพื่อจำแนกกลุ่มเด็ก โดยมีความสอดคล้องในระดับสูง

คำสำคัญ : ค่าเกณฑ์เฉลี่ย แบบประเมินจุดแข็งและจุดอ่อน (SDQ) ความผิดปกติทางจิตในเด็ก

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Normative data and psychometric properties of the Thai version of the Strengths and Difficulties Questionnaire (SDQ)

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Abstract

Objective: To study normative data and psychometric properties of the Thai Strengths and Difficulties Questionnaire (SDQ; parent-, teacher-, and self-rated forms), which addresses positive and negative aspects of children's and adolescents' behaviour and generates clinically relevant scale scores.

Materials and Methods: Using multistage random cluster sampling method, data were collected in 13 provinces from parents, teachers, and as self-reports of 9,491 children aged between 5 and 16 years. Evaluation methods included scale reliability analyses (Cronbach's alpha), correlations with age and among scales, testing for gender effects, and comparing urban and rural regions. A factor analysis examines the specific scale structure of the Thai parent-rated SDQ. Bandings are recommended to identify normal, borderline, and abnormal score ranges.

Results: Problem scores were higher than those observed in Western countries, stressing the necessity to establish national norms. Thai SDQ norms identify probable behaviour problems if the total difficulties score is 19-40 in the parent-rated form, 17-40 in the teacher form, and/or 19-40 in the self-report. Internal reliabilities were satisfactory for all but one subscale. Age and gender effects on SDQ scores as well as correlations between subscales were well in line with the English original and its many other translated versions.

Conclusion: The Thai SDQ was shown to possess sufficiently favourable psychometric properties. Thus, this instrument promises to be a useful assessment and screening tool, as in other parts of the world. Ongoing validation studies and cross-cultural comparisons will provide further culture-specific findings.

Key words : child psychopathology, normative data, screening instrument, Strengths and Difficulties Questionnaire (SDQ)

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Introduction

The Strengths and Difficulties Questionnaire (SDQ) is a brief 25-item rating instrument assessing positive and negative aspects of the behaviour of children and adolescents. Filled out by parents, teachers, or as self-report by children aged 11 years or older, its five subscales address emotional symptoms, conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, with the four problem subscales yielding a total difficulties score (TDS).

Shortly after the publication of the original English SDQ[1], translations in several languages became available, and worldwide application for screening, clinical, and research purposes[2] has since been facilitated by authorized versions in over 50 languages, all of which can be downloaded from www.sdqinfo.org for non-commercial purposes. In contrast to most other instruments assessing child and adolescent psychopathology, its free availability, briefness and ease of completion and scoring, as well as a well-balanced inclusion of positive and negative item wordings have all contributed to growing popularity and widespread use of the SDQ.

Countless studies around the world have demonstrated good psychometric properties of the SDQ, but only few normative data from Asian countries are available[3]. Published reports from Bangladesh, Pakistan, and Sri Lanka are based on smaller samples with limited age ranges, do not include all three informant versions of the SDQ, or have mainly focussed on validity issues. More detailed results of ongoing SDQ projects in Chinese-speaking countries[4], Japan[5], India, and Vietnam will presumably be released in the near future.

In Thailand, a provisional translation of the SDQ forms was introduced several years ago, and a large-scale pilot study was conducted with a community-based sample of school students in Nakorn Nayok province. These initial trials showed that several of the 25 items were not sufficiently understood and/or correctly interpreted by many informants, thus calling for a revision of the original item wordings. Following intense discussions and consultations among a large multidisciplinary panel of child psychiatry, epidemiology, and linguistics experts, the translation and back-translation process for the final Thai SDQ was successfully completed[6]. Formal authorization of the new translation was granted by Robert Goodman, and the revised versions of the Thai SDQ forms were made available on the internet at the official SDQ website.

Since even accurately translated questionnaire items can yield slightly different results

when administered in another culture, it was necessary to establish national norms for Thailand, rather than applying the recommended score bandings and cut-offs previously defined for the original English SDQ.

Using the revised versions of the Thai SDQ, a nationwide screening programme coordinated by the Department of Mental Health (a division of the Thai Ministry of Public Health) collected SDQ data from parents and teachers of students attending state-owned schools, as well as self-reports from the older children. This large community database can now be used to identify high-risk children with probable behavioural or emotional disorders. Children with anomalous SDQ scores can be further examined by school nurses, psychologists, or other health care professionals in order to allow efficient early detection of child psychiatric problems and, if required, facilitate timely initiation of adequate treatment measures or other appropriate interventions.

The present report gives a first summary of the psychometric properties of the parent, teacher, and self-report forms of the Thai SDQ, and provides reference norms and recommended bandings defining normal, borderline, and "abnormal" ranges for the total difficulties score and each of the five SDQ subscales. The observed impact of age, gender, and residential area (urban vs. rural) on Thai SDQ scale scores is addressed in order to allow comparisons with respective results obtained in other countries. To evaluate its internal structure, scale reliabilities presented for all three SDQ forms are supplemented with a more detailed examination of inter-scale correlations and the culture-specific factor structure of the Thai parent-rated SDQ.

Methods

Sample

A large school-based sample comprising approximately 10,000 children and adolescents was included in this study. To ensure sufficient representativeness, the investigated normative sample was randomly drawn from the population of Thai children aged 5-16 years in 2005. The employed multistage random cluster sampling method involved a sequence of 5 selection stages:

- ***province :*** purposive inclusion of metropolitan Bangkok, selection of 12 provinces from all geographical regions of the country
- ***district :*** based on educational service areas, random selection of one urban and one rural district within each of the 12 included provinces
- ***school :*** random selection of one primary school (Pratom level) and one secondary school (Mathayom level) within each included district

- ***class :*** random selection of three classes from each of 6 grade levels (primary: Pratom 1-6; secondary: Mathayom 1-6) within each included school

- ***students :*** random selection of 5 boys and 5 girls within each included class.

The resulting target sample sizes were 180 (6 grades x 3 classes x 10) students in each school, 360 (2 schools x 180) per district, 720 (2 districts x 360) in each province, and 9,360 (13 provinces x 720) students altogether. Size of the metropolitan Bangkok sample was intentionally and appropriately augmented; provinces selected in the first stage were Nonthaburi, Prachinburi, Prachuab Kiri Khan, Suphanburi, Khon Kaen, Nakorn Phanom, Surin, Chiang Rai, Nakorn Sawan, Uttaradit, Pattalung, and Surat Thani.

The total number of all returned parent-and teacher-rated SDQs was 9,516. After discarding a few questionnaires with too many missing items (see below), usable data for 5-to-16-year-olds comprised 9,491 parent SDQs and 9,489 teacher-rated forms, including 750 for 5-year-old children. Out of 4,745 self-reports collected from older children and adolescents, 5 contained an excessive number of missing items and could not be scored.

In order to achieve better comparability with other SDQ studies on schoolchildren, results reported in the present paper are predominantly based on ages 6 to 16 years only. Thus, SDQ data analysed here included 8,741 parent forms (for 4,273 boys and 4,468 girls; mean age: 11.0 years), 8,739 teacher forms (for 4,273 boys and 4,466 girls; mean age: 11.0 years), and 4,740 self-reports (2,327 boys and 2,413 girls; mean age: 13.5 years) from older children aged 11 to 16 years (see Table 1 for a more detailed description of the analysis sample).

Instruments

Data were collected from the children's parents and teachers using the extended versions of the revised Thai SDQ forms. For students aged 11 years or older, the self-report form of the SDQ was also administered.

Scoring of the SDQ was performed according to the standard procedure. Each of the 25 items is rated as being not true (0), somewhat true (1), or certainly true (2), and each of the SDQ subscales consists of 5 items, yielding scores between 0 and 10. Although the wording of 10 SDQ questions addresses positive behavioural attributes, 5 of these item scores are inverted before subscale scores are added up. Thus, four of the subscales represent problem scores (emotional symptoms, conduct problems, hyperactivity/inattention, and peer problems), which in turn

are added to obtain a total difficulties score (TDS) ranging from 0 to 40. The fifth subscale assesses the positive aspect of prosocial behaviour.

In line with the scoring instructions, at least 3 items from each of the 5 SDQ subscales had to be endorsed in order for a questionnaire to be scored and included in the analysis. The entire questionnaire was excluded from all analyses if it contained more than 2 missing items on any SDQ subscale, which was the case for only 25 parent, 27 teachers, and 5 self-report forms. In line with the recommended scoring instructions (see www.sdqinfo.org/py/doc/b3.py?language=Englishqz(UK), subscale scores containing only 1 or 2 missing items were prorated from the available items on the respective subscale and rounded to the nearest integer. Thus, a minimum of 3 valid item scores per subscale was averaged, multiplied by 5, and then rounded to obtain a prorated scale score.

Distributions of raw values obtained for the SDQ scales served as basis for defining cut-offs and recommended bandings to identify ranges of normal, borderline, and "abnormal" scores. It is important to note that placement of cut-offs was guided by applying predefined target rates to the score distributions within this community-based normative sample, and did not involve comparisons with clinical samples. Cut-offs for the TDS were placed with the intention of producing approximately 10% abnormal scores and about 10% cases in the intermediate borderline range[7], roughly corresponding to overall prevalence rates of child psychiatric diagnoses. In contrast, bandings for each of the 5 subscales were selected so as to yield a slightly lower percentage of abnormal and borderline cases (i.e, approximately 85% normal scores and 15% in the combined borderline + abnormal range). As in previous studies[8], the reason for applying more restrictive criteria to the single subscale bandings was to avoid identification of an excessively large total proportion of children with abnormal or borderline values on either one of the five subscales.

Statistical analyses

Data handling and all statistical analyses were carried out using SPSS software. The employed evaluation methods included Mann-Whitney U-tests, Pearson and Spearman's rank correlations, scale reliability analyses yielding measures of internal consistency (Cronbach's alpha), and exploratory principal component analysis. Retest reliabilities could not be established since the normative sample was only examined once. Mainly nonparametric tests were used because of the skewed distributions of some

of the evaluated SDQ scores, but both types of correlations are presented to demonstrate the similarity of obtained results, and to allow direct comparisons with other findings reporting Pearson coefficients. Using one- or two-tailed tests as appropriate and following the usual convention, significance level was set at 5%, even if very small effects reach this level due to the large sample size.

Results

As illustrated in table 1, the analysis sample with valid parent-rated SDQ data (and, having basically identical cell counts and percentages, also the one with valid teacher-rated SDQs) demonstrates well-balanced distributions of gender, living area, and specific age level in years. Together with the employed multistage sampling procedure (see above), this evenness documents that the reported normative results and score bandings are sufficiently representative.

Descriptive information for all SDQ scales of the three informant versions is presented in table 2, based on all available data for 6-16-year-olds and on self-reports by older children aged 11 to 16 years, as throughout this report. Mean scores on all problem scales were consistently higher (and mean prosocial scores were lower) than those reported for comparable Western samples[9,10]. Correlations with age indicate that all problem scores except for the teacher-rated Emotional scale decline with age, and age effects on problem scales appear to be somewhat larger in parent ratings than in the teacher-rated SDQ. Conversely, scores on the positive prosocial scale are slightly higher in older children. In spite of the significant association with age, it should be noted that the magnitude of the coefficients is rather small, and partly reflects age-related differences in clinical prevalence rates. Thus, it seems justified to define only one common set of recommended cut-off scores to determine whether or not a given scale score falls within or exceeds the normal range, irrespective of the child's age.

Recommended cut-off scores and bandings (Table 3) are based on the pre-defined target rates for the TDS (80% normal, 10% borderline, 10% abnormal) and for the five subscales (85% normal, 15% borderline+ abnormal; see Methods section). Since each of the subscales has a limited number of discrete scores, the targeted percentages could only be approximated. For the prosocial subscale, it was not possible to define a borderline range reasonably close to the target percentages. Table 3 also mentions the exact percentage of cases within borderline, abnormal, and the combined borderline+

Table 1 Thai SDQ sample sizes broken down by age, sex, and living area

parent SDQ			age (years)												
			5	6	7	8	9	10	11	12	13	14	15	16	Total
sex	male	N =	379	360	448	397	403	345	403	401	395	386	375	360	4652
		% male	50.5	48.9	51.0	47.9	50.0	45.3	52.3	48.5	48.6	47.7	48.3	49.0	49.0
	female	N =	371	376	431	432	403	416	368	425	417	424	401	375	4839
living area	urban	N =	428	412	513	484	440	418	433	459	451	452	416	431	5337
		% urban	57.1	56.0	58.4	58.4	54.6	54.9	56.2	55.6	55.5	55.8	53.6	58.6	56.2
	rural	N =	322	324	366	345	366	343	338	367	361	358	360	304	4154
Total		N =	750	736	879	829	806	761	771	826	812	810	776	735	9491

abnormal ranges. Slightly different exact actual percentages result when data for 5-year-olds subjects are disregarded, but the choice of recommended bandings for parent- and teacher-rated SDQs is not affected by whether or not this youngest age group is included in the normative sample. Both alternatives are reported to illustrate this point, and to allow direct comparisons with other results which may or may not have included 5-year-olds in their samples.

For each of the three informant versions, scale reliabilities were evaluated by calculating Cronbach's alpha coefficients. Reported in table 4, these analyses at item level are based on slightly smaller samples with valid answers on *all* 25 SDQ items. While most of the scales demonstrate sufficient to high reliability (TDS: alpha = .76 for parent, .81 for teacher, and .70 for self-report forms), the peer problem subscale of the Thai SDQ turned out to be very heterogeneous. Closer inspection revealed that mainly responses to item 23 ("Gets on better with adults than with other children") were the reason, but that the other items on this particular scale also failed to intercorrelate as expected. This lack of satisfactory homogeneity of the peer problem scale was observed in all three informant forms, and remained very similar within parent-rated SDQ subsamples subdivided by gender or living area.

Parent-rated SDQ scores were also examined for possible differences between boys and girls, and between children in predominantly urban vs. rural living environments (Table 5). Small but highly significant sex effects match those known from other

Table 2 Thai SDQ : Scale means, standard deviations (SD), and correlations with age (parent and teacher-rated SDQ for 6-16 year-olds, self-report SDQ for ages 11-16)

SDQ form :	parent SDQ (N = 8741)			teacher SDQ (N = 8739)			self-report (N = 4740)		
	Mean	(SD)	r	Mean	(SD)	r	Mean	(SD)	r
total difficulties score	11.0	(5.1)	-.17 ***	9.1	(5.2)	-.07 ***	12.1	(4.6)	-.19 ***
emotional	2.5	(1.9)	-.02 *	2.0	(1.8)	.00 ns	2.9	(1.9)	-.07 ***
conduct	2.0	(1.6)	-.11 ***	1.5	(1.7)	-.04 ***	2.7	(1.4)	-.15 ***
hyperactivity	3.5	(2.2)	-.18 ***	3.0	(2.3)	-.06 ***	3.4	(1.9)	-.08 ***
peer problems	3.0	(1.5)	-.15 ***	2.6	(1.5)	-.10 ***	3.2	(1.6)	-.22 ***
prosocial behaviour	7.0	(1.8)	.04 ***	6.8	(2.1)	.04 ***	6.7	(1.7)	.22 ***

***p ≤ .001 ; * p ≤ .05 ; ns = not significant (one-tailed Spearman's rank correlations with age in completed years)

SDQ studies[8], with girls showing higher scores on the emotional and prosocial subscales, while boys have higher mean scores on the other problem subscales and, as a result, on the TDS. Differences between subgroups living in urban or rural areas were rather small in magnitude but highly significant. Here, rural environments were associated with slightly higher mean scores on all problem scales and with a lower mean prosocial score.

The internal structure of SDQ parent reports was evaluated by inspecting inter-scale correlations (Table 6) and the pattern of rotated factor loadings when 5 factors are extracted from the 25 items. Although some of the scale scores showed skewed distributions, both Pearson (i.e., linear) and Spearman's rank correlations were calculated, thus allowing comparisons with previous results reporting either one of these coefficients. As seen in the table, all associations occur in the expected direction, are highly significant, and do not depend on whether parametric or rank correlations are regarded.

Results of an exploratory principal components analysis (Table 7), carried out to inspect the culture-specific factor structure of the 25 parent-rated Thai SDQ items, partly replicated the intended SDQ scales but also showed some specific deviations. All items of the prosocial and emotional subscales had their highest loadings on the two corresponding extracted factors 1 and 3. Two of the items of the conduct problems scale were more strongly associated with the factors resembling the hyperactivity-inattention (item 5:

Table 3 Thai SDQ : Recommended bandings (cut-off scores) and exact percentages of children in borderline and high-risk ("abnormal") ranges (parent-and teacher-rated SDQ: ages 5-16 and 6-16, self-report SDQ: ages 11-16)

	recommended bandings			exact % (5-16 years)			exact % (6-16 years)		
	normal range	Border-line	Abnor-mal	Border-line	Abnor-mal	Border-line + Abnor-mal	Border-line	Abnor-mal	Border-line + Abnor-mal
Thai parent SDQ									
total difficulties score	0-15	16-18	19-40	11.5%	8.6%	20.1%	11.1%	8.3%	19.4%
emotional symptoms	0-4	5	6-10	8.2%	7.2%	15.4%	8.4%	7.4%	15.8%
conduct problems	0-3	4	5-10	10.6%	7.6%	18.3%	10.2%	7.3%	17.4%
hyperactivity/inattention	0-5	6	7-10	8.6%	9.4%	18.0%	8.1%	8.9%	17.1%
peer problems	0-4	5	6-10	10.8%	6.0%	16.8%	10.4%	5.9%	16.3%
prosocial behaviour	5-10	---	0-4	---	6.1%	6.1%	---	6.1%	6.1%
Thai teacher SDQ									
total difficulties score	0-13	14-16	17-40	10.5%	9.8%	20.3%	10.3%	9.8%	20.1%
emotional symptoms	0-3	4	5-10	10.4%	9.6%	20.0%	10.5%	9.6%	20.1%
conduct problems	0-3	4	5-10	7.1%	6.1%	13.2%	7.1%	6.1%	13.1%
hyperactivity/inattention	0-5	6	7-10	5.3%	7.5%	12.8%	5.2%	7.4%	12.6%
peer problems	0-4	5	6-10	7.4%	3.3%	10.6%	7.4%	3.2%	10.7%
prosocial behaviour	5-10	---	0-4	---	9.3%	9.3%	---	9.2%	9.2%
Thai self-report SDQ				**exact % (11-16 years)**					
total difficulties score	0-15	16-18	19-40	14.0%	8.9%	22.9%			
emotional symptoms	0-4	5	6-10	9.9%	9.2%	19.1%			
conduct problems	0-4	5	6-10	7.2%	3.9%	11.1%			
hyperactivity/inattention	0-5	6	7-10	6.5%	4.5%	10.9%			
peer problems	0-4	5	6-10	12.3%	8.0%	20.3%			
prosocial behaviour	5-10	---	0-4	---	5.5%	5.5%			

"tempers" now on factor 2) or prosocial subscales (item 7: "obedient" now on factor 1).

The most striking departure from the original SDQ scale structure was seen in the last extracted factor (5) with its lowest percentage of explained variance: Here, the extracted factor did not correspond to the intended peer problems subscale at all. Going by the highest-loading items (item 23: "better

Table 4 Thai SDQ : Scale reliabilities for 6-16-year-olds without any missing items (Cronbach's alpha; parent-rated SDQ results also subdivided by sex and living area)

sample :	parent SDQ					teacher SDQ	self-report SDQ
	overall	boys	girls	urban	rural	overall	overall
	N=8345	N=4077	N=4268	N=4708	N=3637	N=8515	N=4596
total difficulties score	.76	.76	.76	.77	.75	.81	.70
emotional	.63	.62	.64	.64	.62	.69	.63
conduct	.57	.59	.55	.56	.58	.67	.36
hyperactivity	.71	.71	.70	.74	.67	.79	.65
peer problems	.17	.19	.14	.18	.13	.21	.20
prosocial behaviour	.68	.67	.68	.68	.66	.79	.65

Table 5 Parent-rated Thai SDQ : Gender effects and comparisons between urban and rural living areas (means (SDs) in subsamples; age: 6-16 years)

subsample :		boys	girls	sex	urban	rural	liv.area
		N=4273	N=4468	effects	N=4909	N=3832	effects
total difficulties score		11.4	10.6	***	10.5	11.6	***
	(SD)	(5.2)	(5.1)		(5.1)	(5.1)	
emotional		2.4	2.6	***	2.4	2.7	***
	(SD)	(1.9)	(2.0)		(1.9)	(1.9)	
conduct		2.2	1.9	***	1.9	2.1	***
	(SD)	(1.6)	(1.5)		(1.5)	(1.6)	
hyperactivity		3.8	3.2	***	3.4	3.6	***
	(SD)	(2.2)	(2.1)		(2.3)	(2.1)	
peer problems		3.1	2.9	**	2.9	3.2	***
	(SD)	(1.6)	(1.5)		(1.5)	(1.5)	
prosocial behaviour		6.7	7.2	***	7.1	6.7	***
	(SD)	(1.8)	(1.8)		(1.8)	(1.8)	

*** $p \leq .001$; ** $p \leq .01$ (Mann-Whitney U-tests, two-tailed)

Table 6 Parent-rated Thai SDQ : Inter-scale correlations (age: 6-16 years) (top right: Pearson's correlations/bottom left: Spearman's rank correlations)*

N = 8741	TDS	emotional	conduct	hyperact.	peer probs	prosocial
total difficulties score		.71	.74	.79	.57	-.35
emotional	.70		.34	.34	.29	-.11
conduct	.72	.34		.55	.24	-.37
hyperactivity	.79	.34	.54		.22	-.31
peer problems	.56	.28	.24	.22		-.21
prosocial behaviour	-.34	-.11	-.37	-.30	-.21	

* given the large sample size, all coefficients are highly significant ($p \leq .001$; one-tailed)

with adults", item 21: "thinks first", item 25: "good concentration"), this fifth factor extracted from parent-rated Thai SDQ items could best be interpreted as reflecting a culture-specific positive dimension tentatively labelled "mature self-control" ("Mee kwarm pen poo yai" or, in short, "Poo yai" in Thai). As seen in the table, introduction of this specific dimension obviously draws two of the hyperactivity-inattention items (items 23 and 25, see above) away from the factor (2) corresponding to their original scale.

These findings seem to demonstrate that, in the Thai context, the items of the original peer problem subscale do not have enough in common to form a factor of their own. Instead, they are distributed and more strongly linked to either prosocial behaviour (item 11: "has good friend", item 14: "popular"), emotional problems (item 6: "solitary"), or else constitute the core of a more salient new positive dimension describing spiritual strength, mental maturity, and independence.

Discussion

Using data collected from a large and representative nationwide sample of 6- to 16-year-old school children, this report provides reference norms for the three (parent, teacher, and self-rated) forms of the Thai SDQ and gives a first account of their psychometric properties.

As in previous cross-cultural studies with other diagnostical instruments[11], mean Thai SDQ scores were higher than those reported for Western countries. Although such differences in scale means stress the

Table 7 Factor analysis of Thai parent SDQ (rotated component matrix) (set to extract 5 factors, varimax rotation, all loadings with absolute values ≥ .30 reported, highest loadings of each item in bold) Total variance explained by 5 factors = 42.7% (for N = 8741 aged 6-16 years)

	extracted component (= related SDQ scale) and % of explained variance after rotation				
parent SDQ item	1 (=prosocial +) 11.1 %	2 (=hyper +) 10.8 %	3 (=emotional +) 9.0 %	4 (=conduct parts) 6.0 %	5 = "poo yai" 5.7 %
1	.579				
4	.627				
9	.622				
17	.604				
20	.541				helps others .424
2		.768			
10		.730			
15		.680			
21 *		-.365	= *doesn't* think first		thinks first .505
25 *	good concentr. .304	-.383	= *poor* concentration		good concentr. .469
3			.448		
8			.708		
13			.499	unhappy .388	
16			.581		*not* clingy -.347
24			.653		
5		tempers .490		←	
7 *	obeys .454	*doesn't* obey -.313		←	
12				.583	
18		lies, cheats .393		.504	
22				.746	
6			solitary .545		
11 *	good friend .378				*no* good friend -.342
14 *	popular .593				
19				picked on .306	
23					better with adults .544

* these items are reverse-scored before scale scores are calculated, thus *negative* loadings are expected

necessity to establish national norms, other scale properties such as factor structure, reliability measures, or age and gender effects are more relevant criteria when examining the equivalence of different translations of a given instrument. Most of the obtained results closely resemble those observed for the English original and its many other translated versions: Age and gender effects on SDQ scores as well as correlations between subscales are well in line with previous findings.

While the TDS and the other subscales show satisfactory reliabilities, the peer problem scale of the Thai SDQ turned out to be heterogeneous. The underlying reason for the low internal consistency coefficients obtained for this particular scale was revealed in a factor analysis performed to explore the internal structure of the 25 parent-rated items. The pattern of loadings indicates that, from a Thai perspective, the five items of the peer problem subscale have much less in common than in Western cultures, and are instead associated with behavioural aspects addressed by *other* SDQ scales. It is worth noting that the factor corresponding to this scale is usually the last one to be extracted, thus explaining a rather small proportion of the overall variance[7,8]. As demonstrated here, different culture-specific values and standards can lead to a slight rearrangement of the original items, yielding a positive fifth factor describing mature and independent self-control qualities. Interestingly, the major loading on this culture-specific factor belonged to the rather ambiguous item 23 "Gets on better with adults than with other children", which may have been interpreted differently by Thai respondents.

These deviations suggest that, in a Thai cultural context and when regarded all by itself and without consideration of the other scales, the clinical significance of the SDQ peer problem subscale may be rather limited. Thus, whenever Thai SDQ scores are used to make predictions of a child's probable psychopathological status, the presence of borderline or even "abnormal" scores on only this particular peer problem subscale (and *not* on the other problem scales) should go without consequences. Irrespective of this culture-specific feature, individual scores on the other subscales and especially the TDS score of a child can be expected to indicate and predict behavioural problems of Thai children just as reliably and efficiently as they have been shown to do in other cultural environments. However, supporting evidence remains to be gathered in ongoing or planned well-designed validation studies.

Outlook and Conclusion

In order to take proper advantage of the unprecedented body of normative SDQ data which is now available from Thailand, this initial Thai SDQ report needs to be supplemented by further analyses, including closer inspection of scale structure using confirmatory factor analyses. In addition, more detailed evaluation of the teacher-rated and self-report forms, examination of retest reliabilities and cross-informant agreement, and systematic expansion of previous cross-cultural compari-

sons of normative data collected in different countries and continents[9,10] are required.

Such cross-cultural comparisons are only meaningful if adequate (e.g., age and gender) subsamples are selected from the available national calibration databases, so it is necessary to integrate raw data from different nations and samples in a common repository. Further attention should also be devoted to determining whether cross-cultural differences in ratings of children's behavioural strengths and difficulties reflect the child's behaviour per se, or rather stem from culture-specific application of different standards, expectations, and social norms by parents, teachers, and even the adolescents themselves[12].

In summary, the Thai version of this popular instrument appears to be similarly efficient and useful as assessment tool as its English original. The establishment of national norms is hoped to further encourage and facilitate its application in clinical diagnostics, screening programmes, and child psychiatric research settings. As in other parts of the world, the SDQ may thus contribute its share towards further improvement and development of mental health services in Thailand and, eventually, a healthy and sane next generation.

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