

Reliability and validity of the Strengths and Difficulties Questionnaire in Greek adolescents and their parents

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ABSTRACT

The Strengths and Difficulties Questionnaire (SDQ) is a brief screening measure of emotional and behavioural difficulties in children and adolescents. The aim of this study was to assess reliability and validity of the Greek version of the SDQ. A representative Greek sample of 1194 adolescents (aged 11 to 17 years) and their parents completed the SDQ along with other measures. Internal consistency reliability was determined by calculation of the Cronbach α coefficient. Varimax Orthogonal Transformation was conducted to test the factor structure of the questionnaire. Validity was further examined by investigating the correlation of the SDQ with the KIDSCREEN questionnaire and its association with demographic factors. The inter-rater agreement between parent and self-reports was analyzed with Pearson's correlation coefficient. Intra-class correlation coefficients (ICCs) were computed to determine test-retest stability. For both parent and the self-report SDQ versions, most items loaded onto their predicted factors in consistency with the originally proposed five-factor structure. Internal consistency reliability was acceptable with a Cronbach α above 0.70 for all SDQ scales except for conduct and peer problems. Inter-rater correlations ranged from 0.33 to 0.45. Test-retest stability was good (ICCs > 0.60). Correlation coefficients between the SDQ and KIDSCREEN questionnaire were significant. Small effect sizes ($d > 0.5$) of the socioeconomic status

were found for all of the SDQ scale mean scores. In conclusion, the SDQ was found to have satisfying psychometric properties and could be suitable for assessing emotional and behavioural problems in Greek adolescents.

Keywords: Adolescents; Emotional and Behavioural Problems; Strengths and Difficulties Questionnaire; Reliability; Validity

1. INTRODUCTION

Validated questionnaires for identifying emotional and behavioural problems and measuring psychopathological symptoms in children and adolescents in community, school and clinical settings are of considerable value. The reason for this is twofold. Firstly, only a few children and adolescents eventually make use of mental health services, although the prevalence rates of emotional and behavioural problems are high internationally. It is notable that levels rise dramatically (for example up to 40%), particularly in disadvantaged areas, when more general difficulties and not specific psychiatric disorders are concerned [1,2]. Therefore, questionnaires with the potential to accurately detect children at risk for developing emotional and behavioural problems are of crucial importance. Secondly, health professionals can use such measures in their practice so as to assess the type, the severity and the impact of the problem, as well as to evaluate the effects of a treatment or preventive intervention [3].

The Strengths and Difficulties Questionnaire (SDQ) is a brief screening instrument developed for the above-

mentioned purposes [4]. It has been translated into more than 40 languages in recent years, meeting the need for a practical, economic and user-friendly instrument [5]. Versions are available for self-reporting by adolescents aged 11 to 16 years, as well as for parents and teachers of children and adolescents aged 4 to 16 years. The SDQ is advantageous compared to related instruments in that it is very short and includes both strengths and difficulties. The psychometric properties of the SDQ have been investigated in numerous studies with community samples in different countries [6-36]. All these studies have consistently shown that the factor analysis of SDQ parent, teacher and/or self-report versions suggests a five-factor structure, *i.e.*, emotional symptoms, conduct problems, hyperactivity/inattention, peer problems and prosocial behaviour scale, that corresponds with the domains of psychopathology and personal strengths it intends to measure.

The reliability of the SDQ can be defined as satisfactory, although it should be noted that the internal consistency of the conduct problems scale in parent and self-reports as well as the peer problems scale in the self-reported version are low, probably due to the limited number of items [10,14,24,27,31,34,37,38]. Test-retest stability of the SDQ is also satisfactory [6,18,25,26,28,33,34], although a study found that test-retest stability was generally lower than it would be expected [38]. Correlations among parent, teacher and self-reported SDQ scores are found to be moderate, yet better than cross-informant correlations of other psychopathology measures [6,26,38-40]. Finally, much evidence has supported the concurrent validity of the SDQ in conjunction with other related established measures as well as its discriminant validity with self-reports discriminating more on ratings of emotional and peer problems, and parent/teacher reports discriminating more on hyperactivity symptoms [25,27,29,32,33,39,41].

The present study aimed at assessing the psychometric properties of the self-reported and parent-reported SDQ in Greece. A representative nation-wide sample of adolescents and their parents completed the questionnaire, along with a number of related measures in order to examine validity issues. The following issues were investigated: 1) the factor structure of the Greek SDQ, 2) its internal consistency; 3) inter-rater and test-retest agreement; 4) the gender and age effects and 5) validity issues such as construct and convergent validity.

2. METHODS

2.1. Participants and Procedure

This study was conducted within the framework of the European project "Screening and Promotion for Health-Related Quality of Life (HRQoL) in Children and Adolescents: A European Public Health Perspective" [42].

The school sampling in Greece was random, multi-staged and performed to take into account distribution of the target population by age and administrative school region. The target population was adolescents aged 11 to 17 years. A sample size of 1800 adolescents was considered necessary to detect a minimally important difference of half a standard deviation (SD) in HRQoL scores within each age strata between children with and without special healthcare needs or a chronic condition. A response rate of approximately 70% was expected, so the initial sample size was set at 2400 children and adolescents. In Greece, ages 11 to 17 years correspond to six secondary school grades.

Approximately 400 students were included from each of the six age groups/grades in order to reach the original target of 2400 adolescents. For example, the total number of students in Greece attending the first grade of the secondary school is 119,055. If an administrative region had a total number of 2174 students attending the first grade of the secondary school, then 8 students were randomly recruited from a school in that region ($(2174 \times 400)/119,055 = 7.6$ students). Each age group/grade had been calculating accordingly, for each sector. Schools in each sector were randomly selected by a computer program and students of each selected school were selected randomly from classroom name lists. A sample of 1900 adolescents (aged 11 to 17 years) and their parents was recruited. A total of 1194 (that is, a 63% response rate) of self-reported (479 boys and 715 girls) and 1194 respective parent-reported questionnaires were returned. Total adolescent sample mean age was 13.6 years ($SD = 1.7$). Regarding the socioeconomic status (SES) characteristics of the sample, 37.59% came from low-income families, 44.96% came from middle-income families and 17.45% from high-income families. Students and parents were asked to complete the questionnaire at home after providing written informed consent. The SDQ was re-administered two to three weeks later to a randomly selected 10% of the sample. Inclusion criteria were adequate reading skills. Previous research on the representativeness of the present sample has reported that non-responder interviews showed no significant differences between responders and non-responders with regard to adolescents' and parents' general perceived health, parents' marital status and highest educational level, and type of residence, indicating that a selection bias is less likely [42].

2.2. Measures

The SDQ contains 25 items (small sentences), categorised into 5 scales of 5 items each: hyperactivity/inattention, emotional symptoms, conduct problems, peer problems and prosocial behaviour [4]. Responses to each

of the 25 items consisted of 3 options: not true, somewhat true, or certainly true. For all scales the items that are worded negatively are assigned scores of 2 for certainly true, 1 for somewhat true, and 0 for not true. Versions for self-report and parent-report were used in the present study. In order to combat inherent weaknesses of cross-cultural adaptation (for example, semantic and scale equivalence) the research team in the present study followed a standardised translation methodology according to international cross-cultural translation guidelines [43].

To assess family income, the Family Affluence Scale (FAS) [44] was used, addressing issues of family car ownership, having their own unshared room, the number of computers at home and times the children spent on holiday in the past 12 months. The FAS was collected in seven categories (from 0 the lowest to 7 the highest) and was re-coded into three groups for the analysis, *i.e.*, low (0 to 3), intermediate (4 to 5) and high family income (6 to 7). The psychometric properties of the FAS are acceptable and support its use as a self-reported adolescents' measure [45].

In order to assess dimensions of children's physical, psychological and social health-related quality of life (HRQoL) that could be associated with emotional and behavioural problems, the KIDSCREEN-52 was used [46]. It is a generic self-reported questionnaire for children and adolescents from 8 to 18 years with good psychometric properties [46]. It is intended to assess HRQoL from the child's/adolescent's perspective and focus on physical, mental and social dimensions of well-being. The KIDSCREEN-52 instrument aims at identifying children and adolescents at risk with regard to their subjective health. It includes ten HRQoL dimensions: 1) physical wellbeing; 2) psychological wellbeing; 3) moods and emotions; 4) self-perception; 5) autonomy; 6) parent relations and home life; 7) social support and peers; 8) school environment; 9) social acceptance and bullying; and 10) financial resources. The KIDSCREEN-52 questionnaire assesses either the frequency of behaviour/feelings or, in fewer cases, the intensity of an attitude. Both possible item formats use a 5-point Likert response scale, and the recall period is 1 week. Total score from each dimension is ranging from 0 to 100, with higher scores indicating higher HRQoL. The Greek version of the instrument has been found to have good reliability [47]. Convergent and discriminatory validity, tested against information about the adolescents' physical and mental health have also been found at satisfactory levels [46]. The KIDSCREEN-52 versions for adolescents and parents were used in the present study.

2.3. Statistical Analysis

Factor analyses of the Greek version of the SDQ were

conducted using Varimax Orthogonal Transformation with number of factors forced to be five. The internal consistency of different SDQ scales was analyzed with Cronbach's α . Alpha coefficient of 0.7 or higher were considered acceptable. The inter-rater agreement between parent and self-report scores was analyzed with Pearson's correlation coefficient. Correlation coefficient between 0.1 and 0.3 were considered low, between 0.31 and 0.5 moderate and those over 0.5 were considered high. Intra-class correlation coefficients (ICCs) were computed in order to assess test-retest stability. A coefficient of 0.6 or higher was considered as evidence for good test-retest stability.

Construct-related validity was evaluated based on previously developed hypotheses regarding family socioeconomic status. It was expected that adolescents coming from disadvantaged socioeconomic background would also report more emotional and behavioral problems. Mean T-values of SDQ scales were computed according to socioeconomic status. Construct validity was assessed by calculating Cohen's effect sizes (ES, d). Effect sizes of 0.2 - 0.5 were considered small, between 0.51 - 0.81 moderate and over 0.8 were considered large. Pearson correlation coefficients were computed to analyze convergent validity between SDQ scale scores and the 10 dimensions of the KIDSCREEN-52 questionnaire. Convergent validity was considered to be demonstrated when correlations between theoretically comparable dimensions were significantly higher than correlations between theoretically different dimensions.

3. RESULTS

Table 1 shows the factor loadings of each item after five-factor solution was forced for parent and self-reported SDQ. For both parent and self-reports, most items loaded onto their predicted factors indicating that the factors produced on the basis of the Greek sample were consistent with the original scales of the SDQ. For self-reports, the first five factors had eigenvalues >1.0 , *i.e.*, 4.4, 2.6, 1.5, 1.3, 1.2, and accounted for 44.1% of the total variance. The item "*Other people my age generally like me*" that was supposed to load on peer problems factor loaded on prosocial behaviour factor, while the item "*I usually do as I am told*" loaded on the emotional symptoms factor instead on the conduct problems factor. Regarding parent-reports, the first five factors had eigenvalues >1.0 , *i.e.*, 4.5, 2.6, 1.7, 1.3, 1.2, and accounted for 44.4% of the total variance. Discrepancies from the original scales of the SDQ were identified in relation to two items. More specifically, the item "*Steals from home, school or elsewhere/I take things that are not mine*" loaded on the peer problems instead for the conduct problems factor and the item "*Gets on better with adults than with other people/I get on better with adults*" loaded

Table 1. Factor loadings of SDQ items in parent (left columns) and self-reports (right columns).

SDQ items	Hypothesized factors					
	Prosocial behaviour	Hyperactivity/inattention	Emotional symptoms	Conduct problems	Peer problems	
Nice to other people	0.59	0.64				
Shares with others	0.59	0.61				
Helpful if someone hurt	0.69	0.68				
Kind to younger children	0.57	0.57				
Volunteers to help	0.68	0.67				
Restless		0.83	0.71			
Constantly “fidgeting”		0.76	0.75			
Has difficulty concentrating		0.59	0.44			
Thinks before doing things*		0.64	0.44			
Has good attention*		0.70	0.75			
Has headaches and stomach aches			0.53	0.43		
Worries a lot			0.58	0.57		
Often unhappy			0.68	0.61		
Nervous			0.56	0.44		
Has fears			0.51	0.43		
Loses temper				0.43	0.60	
Does as told*				-0.46	-0.41	0.23
Fights a lot				0.42	0.52	
Accused of lying				0.49	0.65	
Steals from home and school				-0.20	0.73	0.64
Usually alone					0.56	0.62
Has good friend(s)*					-0.47	-0.47
Popular*	0.49				0.43	-0.13
“Picked on” or bullied					0.69	0.49
Prefers adults			0.44		0.13	0.47

*Reversely coded.

on the emotional symptoms rather than the peer problems factor.

The internal consistency coefficient (Cronbach's α) for the total difficulties score, which includes all scales except for the prosocial behaviour, was 0.78 for parent-reported SDQ and 0.77 for self-reported SDQ (**Table 2**). The Cronbach's α for conduct problems and peer problems were low in both parent and self-reports.

Table 2 presents correlations of parent and self-reported SDQ scales. Prosocial behaviour scale was negatively correlated with other scales as expected. For parent-reports, each scale was correlated significantly with

the other, with correlations ranging from -0.22 (prosocial behaviour and conduct problems scales) to 0.45 (hyperactivity/inattention and emotional symptoms scales). The correlations for self-reported SDQ scales were all significant ranging from 0.19 (hyperactivity/inattention and peer problems scales) to 0.47 (hyperactivity/inattention and conduct problems scales). The correlations of all parent and self-reported SDQ scales with the total difficulties score were significant as well.

In **Table 2** are presented correlations between parent and self-reported SDQ scales. All scales were correlated significantly, with correlations ranging from 0.33 (con-

Table 2. Cross-scale correlations and Cronbach's α of SDQ parent and self-reports, test-retest and inter-rater correlations.

	α	Total difficulties	Emotional symptoms	Conduct problems	Hyperactivity/inattention	Peer problems	Test-retest correlations
Self-reports							
Total difficulties	0.77						0.89
Emotional symptoms	0.73	0.78*					0.83
Conduct problems	0.56	0.63*	0.26*				0.85
Hyperactivity/inattention	0.63	0.79*	0.46*	0.41*			0.76
Peer problems	0.50	0.65*	0.41*	0.26*	0.27*		0.81
Prosocial behaviour	0.72	-0.22*	-0.34*	-0.22*	-0.27*	-0.26*	0.65
Parent-reports							
Total difficulties	0.78						0.84
Emotional symptoms	0.71	0.78*					0.82
Conduct problems	0.57	0.71*	0.38*				0.88
Hyperactivity/inattention	0.70	0.78*	0.44*	0.47*			0.77
Peer problems	0.53	0.57*	0.35*	0.23*	0.19*		0.89
Prosocial behaviour	0.72	-0.29*	-0.27**	-0.30*	-0.21*	-0.27*	0.76
Inter-rater correlations							
Total difficulties	0.45*						
Emotional symptoms	0.41*						
Conduct problems	0.33*						
Hyperactivity/inattention	0.41*						
Peer problems	0.35*						
Prosocial behaviour	0.36*						

* $P < 0.001$; ** $P < 0.05$.

duct problems scale) to 0.45 (total difficulties scale). Correlations did not vary according to different age groups or gender. Test-retest stability analysis showed ICCs above 0.60 in all scales for both parent and self-reports (Table 2).

Table 3 shows means and standard deviations obtained for scale scores of the parent and self-reported SDQ for boys and girls according to different age groups. Results showed that parents reported significantly higher scores for girls compared to boys with respect to total difficulties, emotional symptoms and prosocial behaviour scales ($P < 0.001$).

In relation to age, parents reported significant higher scores for adolescents aged 15 to 17 years than those aged 11 to 14 years on total difficulties ($P < 0.05$) and emotional symptoms scales ($P < 0.001$). No significant interaction was found between sex and age.

As far as self-reports are concerned, girls reported higher mean scores on emotional symptoms ($P < 0.001$)

and prosocial behaviour scales ($P = 0.002$). Age differences revealed that adolescents aged 15 to 17 years compared to those aged 11 to 14 years, reported significantly higher mean scores on all scales except for prosocial behaviour scale, namely, total difficulties ($P < 0.001$), emotional symptoms ($P < 0.001$), conduct problems ($P = 0.007$), hyperactivity/inattention ($P < 0.001$), and peer problems scales ($P = 0.044$). The score on the prosocial behaviour scale was significantly lower ($P = 0.034$) in adolescents aged 15 to 17 years with mean (SD) equal to 7.9 ± 1.9 than those aged 11 to 14 years with mean (SD) equal to 8.2 ± 1.8 . A significant sex \times age interaction was found for the emotional symptoms scale ($P = 0.034$) proclaiming that females had higher scores on the emotional symptoms scale, with the difference being more significant for those aged 15 to 17 years than those aged 11 to 14 years.

Univariate analysis showed statistically significant differences in SDQ scores between adolescents reporting

Table 3. Scale scores (mean \pm SD) of SDQ parent and self-reports across sex and age groups.

	11 - 14 years			15 - 17 years	
	Total	Boys	Girls	Boys	Girls
Parent-reports					
Prosocial behaviour	8.5 \pm 1.7	8.5 \pm 1.5	8.6 \pm 1.5	8.0 \pm 2.1	8.6 \pm 1.7
Hyperactivity/inattention	2.9 \pm 2.2	3.0 \pm 2.3	2.6 \pm 2.1	3.3 \pm 2.2	2.9 \pm 2.2
Emotional symptoms	2.3 \pm 1.9	1.7 \pm 1.8	2.3 \pm 1.8	1.9 \pm 1.9	2.8 \pm 2.1
Conduct problems	2.0 \pm 1.5	2.0 \pm 1.6	2.0 \pm 1.6	2.1 \pm 1.6	2.0 \pm 1.5
Peer problems	1.6 \pm 1.5	1.4 \pm 1.5	1.5 \pm 1.4	1.8 \pm 1.6	1.6 \pm 1.4
Total difficulties	8.8 \pm 5.1	8.3 \pm 5.1	8.6 \pm 5.1	9.0 \pm 5.3	9.2 \pm 5.2
Self-reports					
Prosocial behaviour	8.1 \pm 1.8	7.9 \pm 2.0	8.4 \pm 1.6	7.5 \pm 2.1	8.2 \pm 1.8
Hyperactivity/inattention	3.6 \pm 2.2	3.1 \pm 2.2	3.1 \pm 2.1	3.9 \pm 2.2	4.1 \pm 2.2
Emotional symptoms	3.0 \pm 2.1	2.3 \pm 2.2	3.1 \pm 2.0	2.5 \pm 2.0	3.7 \pm 2.1
Conduct problems	2.0 \pm 1.5	3.0 \pm 1.7	2.8 \pm 1.4	3.0 \pm 1.5	3.1 \pm 1.5
Peer problems	1.8 \pm 1.7	1.9 \pm 2.0	1.7 \pm 1.6	1.9 \pm 1.8	2.0 \pm 1.6
Total difficulties	11.3 \pm 5.2	10.2 \pm 6.5	10.5 \pm 5.0	11.3 \pm 5.4	12.9 \pm 4.9

low versus high family income (**Table 4**) except for conduct problems and prosocial behaviour scores. No significant differences were obtained between adolescents of high versus medium family income. Medium versus low family income differentiated significantly adolescents in scale scores for emotional symptoms, peer problems and total difficulties scores. However, only small ES (d) were found for all SDQ scale mean ($d > 0.5$). The largest effect size was observed for emotional symptoms scale.

Convergent validity analysis showed moderate to high-level correlations for the expected relationships (**Table 5**). The SDQ emotional symptoms scale, as well as the total difficulties score were correlated highest with the KIDSCREEN-52 moods and emotions dimension. Moderate correlations of the SDQ emotional scale were also observed with the KIDSCREEN-52 dimensions of self-perception, psychological well-being, parent relation, physical well-being and social support and peers. The SDQ hyperactivity/inattention scale was correlated highest with the KIDSCREEN-52 dimensions of school environment, moods and emotions and parent relations dimensions. The SDQ peer problems scale was correlated highest with the KIDSCREEN-52 dimensions of peers and social support, moods and emotions and social acceptance and bullying.

4. DISCUSSION

The present study aimed at investigating the psycho-

metric properties of the Greek version of the SDQ in a school-based sample of adolescents and their parents. The main results encourage the use of this widely used questionnaire for Greek adolescents and are catalogued as follows. Factor analysis of the SDQ yielded five factors, in consistency with the proposed structure of the original questionnaire and the hypothesised scales of emotional symptoms, conduct problems, hyperactivity/inattention, peer problems, and prosocial behaviour. The internal consistency of SDQ scales was acceptable. Furthermore, the abovementioned psychometric properties were highly similar for parent and self-report versions. Finally, the parent-adolescent agreement for SDQ scores was reasonable.

The reliability of the SDQ scales also appeared to be reasonable. However, the internal consistency of two scales, viz. conduct problems and peer problems, in both parent and self-reports, was below acceptable limits. Given that SDQ scales except for total difficulties scale consist of only 5 items, this result was not surprising.

While the original five-factor structure of the SDQ was generally confirmed, two items in the conduct problems scale, viz., “*I take things that are not mine*” and “*I usually do as I am told*”, loaded more strongly onto the peer problems scale. Studies outside the UK have also noted unexpected factor loadings for the item “*I usually do as I am told*” [7,21,33,35]. The findings from the present study can therefore be seen as adding to existing evidence, questioning the utility of this item as an indi-

Table 4. Correlations of family income with SDQ self-reports.

Self-reports	Family income						Effect size (low vs. high)
	Low		Medium		High		
	Mean T-value	(SD)	Mean T-value	(SD)	Mean T-value	(SD)	
Emotional symptoms	51.82	(10.04)	49.28	(9.76)	48.60	(9.94)	0.32
Conduct problems	50.49	(10.02)	49.55	(10.28)	50.39	(9.35)	0.01
Hyperactivity/inattention	51.20	(9.35)	50.08	(9.78)	49.21	(10.43)	0.20
Peer problems	51.69	(10.60)	48.91	(9.57)	48.77	(9.14)	0.29
Prosocial behaviour	50.61	(9.40)	49.36	(10.39)	49.63	(10.77)	0.10
Total difficulties	51.67	(9.86)	49.00	(10.07)	49.49	(9.62)	0.22

$P < 0.05$ for mean differences (low vs. high) except for conduct problems and prosocial behaviour scales. Effect size (d): 0.20 = small, 0.50 = moderate, 0.80 = large.

Table 5. Correlations of KIDSCREEN-52 dimensions with scales of SDQ self-reports.

KIDSCREEN-52 Dimensions	SDQ scales					
	Emotional symptoms	Conduct problems	Hyperactivity/inattention	Peer problems	Prosocial behaviour	Total difficulties
Physical well-being	-0.33	-0.12	-0.23	-0.19	0.16	-0.31
Psychological well-being	-0.40	-0.11	-0.25	-0.27	0.16	-0.38
Moods & emotions	-0.58	-0.23	-0.38	-0.35	0.17	-0.56
Self-perception	-0.47	-0.18	-0.30	-0.25	0.17	-0.44
Autonomy	-0.28	-0.12	-0.12	-0.17	0.13	-0.22
Parent relation & home life	-0.34	-0.23	-0.31	-0.23	0.19	-0.38
Peers & social support	-0.31	-0.16	-0.12	-0.40	0.18	-0.30
School environment	-0.22	-0.21	-0.41	-0.18	0.29	-0.37
Social acceptance and bullying	-0.26	-0.11	-0.16	-0.34	0.19	-0.29
Financial resources	-0.26	-0.20	-0.20	-0.25	0.11	-0.26

All correlations were significant at $P < 0.001$. Correlation coefficients: 0.1 - 0.3 = low, 0.31 - 0.5 = moderate, >0.5 = high.

cator of conduct problems in children and adolescents in different cultural settings.

Sex and age effects on the Greek SDQ scores did not agree well with those observed by comparable studies in other countries [6]. Greek parents reported higher levels of hyperactivity/inattention and conduct problems for girls than boys. Also, unlike developmental changes in clinical prevalence rates as detected by epidemiological studies, the hyperactivity/inattention score increased with increasing age. The different factor loadings and specific educational circumstances in Greece, *i.e.*, secondary school adolescents face extremely competitive and stressful university entry exams, may be involved and should be further explored in future research.

The present analysis showed statistically significant differences in SDQ scores between adolescents reporting

low versus high family income, except for conduct problems and prosocial behaviour. Medium versus low family income differentiated significantly adolescents in scale scores for emotional symptoms, peer problems, and total difficulties. However, no significant differences were observed between adolescents of high versus medium family income. Previous research has confirmed the above mentioned finding, suggesting that children and adolescent with lower socioeconomic status score significantly higher on the hyperactivity/inattention and peer problems scales [23,36].

With respect to the relationships between the mainly psychologically oriented SDQ scales and the generic HRQOL dimensions of the KIDSCREEN-52, it can be claimed that correlations between the two instruments were as predicted. The most significant correlations emer-

ged in general between scales and dimensions tapping similar aspects of emotional and behavioural problems, e.g., SDQ peer problems with KIDSCREEN-52 peers and social support, SDQ hyperactivity/inattention with KIDSCREEN-52 school environment, SDQ emotional symptoms with KIDSCREEN-52 moods and emotions, self-perception and psychological wellbeing. Also, it should be noted that correlations were satisfactory, given the substantial difference in length and item contents of the two measures.

It should be acknowledged that the present study has a number of limitations. Firstly, the study relied exclusively on participants from the general population. As a result, the psychometric properties of the SDQ in clinically referred Greek adolescents remain to be established. Secondly, only SDQ parent and self-reports were obtained, without including teacher reports. Teachers are valuable informants, as it is generally acknowledged that they can provide important additional information on the strengths and difficulties of children and adolescents. Thirdly, SDQ scales were not validated against other questionnaires detecting psychopathology. Finally, comparison of SDQ scores with psychiatric diagnoses measured through standardised interviews would certainly have strengthened this study.

Despite these limitations, the present results are encouraging by providing evidence of the psychometric qualities of the SDQ in Greece. Findings are generally consistent with numerous studies elsewhere. However, future studies with teacher reports are needed. Future studies are also needed to validate the Greek version of the SDQ compared with other questionnaires of psychopathology and psychiatric diagnoses.

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