

Psychometric properties of the parent and teacher versions of the Strength and Difficulties Questionnaire (SDQ) in a Spanish sample¹

Pedro Javier Rodríguez-Hernández² (*Hospital Universitario N.S. Candelaria, Spain*),
Moisés Betancort (*Universidad de La Laguna, Spain*),
Gustavo Mario Ramírez-Santana (*Universidad de La Laguna, Spain*),
Ruth García (*Institute of Psychiatry, United Kingdom*),
Emilio J. Sanz-Álvarez (*Universidad de La Laguna, Spain*), and
Carlos De las Cuevas-Castresana (*Universidad de La Laguna, Spain*)

ABSTRACT. The Strengths and Difficulties Questionnaire (SDQ) is a well-known, widely used and well-established brief screening instrument for detecting psychological morbidity in childhood. However, no research has been conducted with Spanish samples to provide data about the validity and reliability of this instrument, or the factorial structure of the questionnaire. The current instrumental study aims to provide the psychometric properties of the Spanish version of the SDQ. A sample of 595 children was evaluated using both teachers and parents as informants. Descriptive statistics for the SDQ are presented. Cronbach's alpha coefficient, was calculated for the full global questionnaire and each of its scales, to examine the internal reliability. Factor analysis with Varimax Rotation was conducted following the original author's recommendations. The factor solution was analyzed using Confirmatory Factor Analysis. Data showed a satisfactory index of reliability as well as a factorial structure of five dimensions with some exceptions for some items. We conclude that our study replicates the data found in other studies in which the goodness of the SDQ as a screening instrument has been studied.

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² Correspondence: Child and Adolescent Psychiatric Unit «Diego Matías Guigou y Costa». University Hospital N.S.Candelaria. Canary Islands (Spain).Email: pedrojavierrodriguezhernandez@yahoo.es

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RESUMEN. El *Strengths and Difficulties Questionnaire* (SDQ) es un instrumento de *screening* ampliamente utilizado para detectar morbilidad psicológica en la infancia. Sin embargo, ningún estudio llevado a cabo en muestras españolas ha aportado datos sobre su validez y fiabilidad, así como sobre la estructura factorial del cuestionario. El presente estudio instrumental tiene como objetivo informar de los aspectos psicométricos de la versión española del SDQ. En este trabajo fueron evaluados 595 niños utilizando a los profesores y los padres como informantes. Se realizaron análisis descriptivos del SDQ. Se calcularon índices de consistencia interna mediante el Alfa de Cronbach, tanto para el cuestionario global como para las distintas escalas del mismo. Igualmente se llevó a cabo un análisis factorial mediante Rotación Varimax siguiendo las recomendaciones de los autores originales del cuestionario. La solución factorial alcanzada fue sometida a un análisis factorial confirmatorio. Los resultados encontrados muestran una consistencia interna elevada y una estructura factorial de cinco dimensiones con excepciones puntuales en algunos ítems. Concluimos que el estudio replica los datos encontrados con otras muestras en las que se ha examinado la bondad del SDQ como instrumento de *screening*.

PALABRAS CLAVE: Cuestionario de capacidades y dificultades. Propiedades psicométricas. Salud mental. Análisis factorial. Estudio instrumental.

In recent years, a growing number of publications have raised awareness of the high prevalence of emotional and behavioral disorder in children and adolescents (Belfer, 2008; Griffin, Guerin, Sharry, and Drumm, 2010; Mansbach-Kleinfeld *et al.*, 2010; Wille, Bettge, Wittchen, and Ravens-Sieberer, 2008). There is an international consensus that 1 in 5 children will suffer some degree of mental health problems during their childhood or adolescence. This estimation has been carried out over different countries and cultures (Malhotra, Kohli, Kapoor, and Pradhan, 2009; Merikangas, Nakamura, and Kessler, 2009; Oschilewsky, Gómez, and Belfort, 2010). However, the percentages of those who make use of mental health services are still relatively low. One of the causes of this low rate is the lack of instruments that can be easily applied to a wide sample in order to detect potential emotionally unhealthy children. This is a significant issue, as preventive policies to detect mental health problems in children could help to avoid possible psychological and psychiatric problems in adolescence (Belfer, 2008; Goodman, Ford, Simmons, Gatward, and Meltzer, 2000; Shivram *et al.*, 2009).

Mental health problems in childhood and adolescence can cause academic and social impairment in the individual and place an emotional burden on families. Therefore, it is necessary to design convincing instruments that permit fast detection of children and adolescents at potential risk of developing psychological disorders. This in turn will allow early interventions to reduce the negative impact (Crone, Vogels, Hoekstra, Treffers, and Reijneveld, 2008; Estévez and Emler, 2011).

The Strengths and Difficulties Questionnaire (SDQ) is a screening instrument broadly used to detect mental health problems from childhood through adolescence (Giannakopoulos *et al.*, 2009; Goodman, Renfrew, and Mullick, 2000; Koskelainen, Sourander, and Kaljonen, 2000; Mullick and Goodman, 2001; Van Widenfelt, Goedhart, Treffers, and Goodman, 2003). The original English version was created by Robert Goodman at the Institute of Psychiatry in London (Goodman, 1997). The main use of the SDQ resides in the possibility of detecting children at potential risk and who could need further assessment or even treatment.

The SDQ is a brief questionnaire with 25 items divided into 5 scales: *Emotional symptoms*, *Behavioural problems*, *Hyperactivity*, *Peer relationship problems* and *Prosocial behaviors*. The total difficulty score is generated by adding the scores from all the scales except the prosocial one. There are three versions of the Questionnaire: parent, teacher and a self-report version. The SDQ presents several advantages when compared with similar screening tools; it is brief, easy to fill out, which increases respondent rates, and it covers the more important psychopathologies in children and adolescents. It can also evaluate different aspects of behavior using the same instrument. Additional advantages include the existence of a self report version and the fact that the same version can be used with different informants, which increases its power of detecting psychological pathologies. Finally, there is a significant correlation between the SDQ and other psychopathology scales such as the Rutter and Achenbach questionnaires (Crone *et al.*, 2008; Goodman, 1997; Goodman and Scott, 1999; Klasen *et al.*, 2000; Vogels, Crone, Hoekstra, and Reijneveld, 2009).

The SDQ in its different language versions has been widely used in a variety of studies (Di Riso *et al.*, 2010; Du, Kou, and Coghill, 2008; Giannakopoulos *et al.*, 2009; Koskelainen *et al.*, 2000; Matsuishi *et al.*, 2008; Mullick and Goodman, 2001; Van Widenfelt *et al.*, 2003; Woerner, Becker, and Rothenberger, 2004). For instance, it has been used as a screening tool in prevalence studies (Mullick and Goodman, 2001; Thabet, Stretch, and Vostanis, 2000; Van Widenfelt *et al.*, 2003; Vogels *et al.*, 2009) and double face studies (Goodman, Ford *et al.*, 2000; Goodman, Renfrew *et al.*, 2000; Mathai, Anderson, and Bourne, 2004) aiming to compare or specify the more important psychometric properties. Recently its use has become widespread as one of the tools used to dimensionally measure child mental health (Goodman and Goodman, 2009). The sound data on the psychometric properties of the parent and teacher versions of the SDQ provides strong support for its use as a screening instrument for research and epidemiological studies. It has also proved useful for clinical purposes (Becker, Woerner, Hasselhorn, Banaschewski, and Rothenberger, 2004; Glazebrook, Hollis, Heussler, Goodman, and Coates, 2003; Mathai, Anderson, and Bourne, 2003; Vostanis, 2006).

The SDQ factor structure and psychometric properties have been widely replicated in samples from United Kingdom, Europe, Asia, USA and Australia (Du *et al.*, 2008; Giannakopoulos *et al.*, 2009; Goodman, 2001; Hawes and Dadds, 2004; Matsuishi *et al.*, 2008; Palmieri and Smith, 2007; Smedje, Broman, Hetta, and Von Knorring, 1999; Woerner *et al.*, 2004). In the original English version, factor analysis using Varimax rotation with a British sample yielded 5 factors in both the parent and teacher versions. The psychometric data indicate a mean internal consistency of .73 as measured with Chronbach's alpha

(Goodman, 2001). Versions in other languages have yielded similar results. In the Swedish version for parents, the factorial structure using Varimax Rotation yielded the same 5 factors. Some items loaded on another scale. For example, one of the items of the peer problems scale loads clearly on the behavioural problems scale and one of the items of the behavioural problems scale loads negatively on the prosocial subscale. In terms of internal consistency (Cronbach's alpha), the alpha coefficients show a range between .51 (peer problems scale) and .76 (total difficulties scale; Smedje *et al.*, 1999). In the Greek self-report version, Confirmatory Factor Analysis with maximum likelihood procedure was used to assess the theoretical model for the SDQ. The proposed five-factor structure was confirmed, although some modifications seem to be necessary in order to increase the fit. The internal consistency reliability shows Cronbach's alpha values between .50 (peer problems scale) and .77 (total difficulties score; Giannakopoulos *et al.*, 2009). In the Chinese versions of the SDQ for parents and teachers, the same five-factor structure was confirmed using Varimax rotation. In the version for parents, some items loaded onto other scales. Two of the peer problem items loaded onto the prosocial component and two of the hyperactivity items loaded onto the behavioural problems scale. For the teacher version, 8 items loaded onto other scales. In terms of internal consistency, Cronbach's alpha coefficients for the parent SDQ scales are between .30 (peer problems) and .76 (hyperactivity) and for the teacher version, between .48 (peer problems) and .83 (prosocial behaviour).

In conclusion, most studies have shown a strong five-factor structure using teachers, parents, and self-report informants. Various studies have found that some scales produce lower ranges of internal reliability mainly due to the few items in each scale (Giannakopoulos *et al.*, 2009; Hill and Hughes, 2007; Palmieri and Smith, 2007). In Spain, the SDQ has been broadly used as a clinical instrument. This extensive clinical use contrasts with the absence of rigorous studies about the internal reliability and factorial structure of the Spanish version of the SDQ. The aim of this research is to increase international evidence about the efficacy of the SDQ as an instrument that measures potential psychopathologies in epidemiological studies. For this propose we followed the recommendations of Carretero-Dios and Perez (2007). In this study, data was collected from teachers and parents and from a wide sample of children from the Canary Islands.

Method

Participants

The sample was obtained from all the children aged 7 to 10 who are residents in the Canary Islands (Spain). The sample was stratified by age using the latest census on children attending school in the Canary Islands (official data recorded by the Canary Island Government).

The sample size was determined according to the following statistical conditions; an expected prevalence of mental health and behavioural problems of 10%, with a maximum error of 3% and a confidence interval of 95%. To facilitate selection of the participants, the sample collection was carried out in two stages: First, schools and classes were randomized. Secondly, we made a randomized selection of the number of

students needed for sample size. In addition to this, we included additional participants in anticipation of possible drop-outs. Gender data was equal during the data collection, given that all schools are of mixed gender and have similar proportions of boys and girls. Under all these conditions, the minimum sample required was 392. The actual selection included 595, incorporating the additional participants. Table 1 shows effect of gender in each scale.

TABLE 1. Mean and Standard Deviation for subscales and total scale for male and female.

	<i>Teachers</i>					<i>Parents</i>				
	<i>Male</i>		<i>Female</i>		<i>Sig</i>	<i>Male</i>		<i>Female</i>		<i>Sig</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Total Scale	11.55	7.02	8.62	5.87	**	12.2	6.3	10.5	6.6	**
Prosocial Scale	7.10	2.31	8.12	1.95	**	7.9	1.8	8.6	1.6	n.s.
Hyperactivity Scale	4.65	3.08	2.95	2.57	**	5.0	2.6	3.9	2.7	**
Emotional Symptoms Scale	2.16	2.18	1.91	1.91	n.s.	2.6	2.3	2.6	2.3	n.s.
Behavioural Problems Scale	2.35	2.31	1.41	1.79	**	2.1	1.9	1.9	1.8	**
Peer Problems Scale	1.95	1.94	1.62	1.68	**	2.5	1.9	2.1	1.7	n.s.

Note. *M*: Mean, *SD*: Standard Deviation, *Sig*: significant, **: $p < .01$, n.s.: non significant. Authorizations from the Canary Islands Education Minister was sought.

Instruments

The SDQ is a questionnaire with 25 items divided into 5 scales. The first 4 scales refer to emotional symptoms, behavioural problems, hyperactivity, and peer relationship problems. The fifth scale refers to prosocial behaviors. Each of the 25 items is rated as being *Not true* (0), *Somewhat true* (1), or *Certainly true* (2), and each of the SDQ scales consists of five items, thus yielding scores between 0 and 10. Four of the SDQ scales represent problem scores which are added to obtain a total difficulties score. The questionnaire can be downloaded from internet for free in many different languages. The official Spanish translations of the parent and teacher versions of the SDQ were used (<http://www.sdqinfo.com>). The parent and teacher versions were translated into Spanish by a bilingual child psychiatrist. After a first translation, the questionnaires were administered to a group of parents and teachers in Spain in order to combat inherent weaknesses of cross-cultural adaptation (for example, semantic and scale equivalence) and with the aim of detecting and clarifying any possible misunderstandings or any unclear pieces of information. To maximize reliability, the tool was then translated back from Spanish into English by an independent expert linguist following the recommendation of the International Test Commission (ITC; 2000).

Procedure

The teachers received the questionnaires from the research team during meetings when the project aims and outline were presented. Each teacher assessed an average

of 25 children. When the children had more than one teacher, the teacher with the highest number of class contact hours with the child carried out the assessment. The teachers were responsible for providing the parents with questionnaires and collecting the completed questionnaires. Where children lived with both parents the questionnaire was filled in by both parents together. In cases where parents were separated or divorced the parent who spent most time with the child was responsible for filling in the questionnaire. In some other cases the questionnaire was filled in by the nearest relative or carer who spent most time with the child. The teachers returned all questionnaires by post. The total questionnaire response rate was 89.41% for the parent version and 100% for the teacher version. The sample included 52% males and 48% females.

Data analyses

For this instrumental study (Montero and León, 2007), data managing and analyses were carried out using R statistical software (<http://www.r-project.org/>). These analyses encompass testing the psychometric properties of the Spanish-SDQ, and a Principal Component Analysis (PCA) over the 25 items scale to verify the factorial structure of our questionnaire. Measures of internal consistency for the whole scale and subscales for teachers and parents were carried out using Chronbach's alpha scores. We ran a PCA in which 5 factors were isolated attending to the Kaiser criterion (eigenvalues greater than 1) and visual inspection of the Scree plot. We used Varimax Rotation, as proposed by the original author (Goodman, 2001) and successive replication in other populations (Du *et al.*, 2008; Giannakopoulos *et al.*, 2009; Smedje *et al.*, 1999; Woerner *et al.*, 2004). Finally, a Confirmatory Factor Analysis with maximum likelihood procedure was done for predicting the theoretical model for the SDQ proposed by Goodman (2001).

Results

Internal reliability for teacher responses

First, the descriptive statistics (Mean and Standard Deviation) and a measure of discrimination (corrected Item-Total Correlation) for the scale was calculated. For teachers, the internal reliability analysis achieved a score of .77 for the total scale. Internal reliability for the other scales ranged from .64 to .85. The lowest internal reliability was located in the peer problems scale. It seems that there is a certain variability in the items that make up this scale, especially for the item 11 «*Tiene al menos un amigo*» («Has at least one good friend») (Woerner *et al.*, 2004; Smedje *et al.*, 1999; see Tables 2 and 3).

TABLE 2. Mean, Standard Deviation and Discrimination indexes for teachers.

<i>Item</i>	<i>M</i>	<i>SD</i>	<i>r item-total</i>
Tiene en cuenta los sentimientos de los otros	1.51	0.56	-.30
Es inquieto/a, hiperactivo/a no puede permanecer quieto/a	0.65	0.75	.57
Se queja con frecuencia de dolor de cabeza, estómago, náuseas	0.31	0.58	.25
Comparte frecuentemente con otros niños	1.47	0.57	-.22
Frecuentemente tiene rabietas o mal genio	0.42	0.65	.49
Es más bien solitario/a y tiende a jugar solo/a	0.32	0.57	.22
Por lo general es obediente, suele hacer lo que le piden los adultos	0.60	0.71	.38
Tiene muchas preocupaciones, a menudo parece inquieto/a..	0.43	0.61	.47
Ofrece ayuda cuando alguien resulta herido, disgustado...	1.53	0.54	-.17
Está continuamente moviéndose y es revoltoso	0.57	0.73	.56
Tiene por lo menos un/a buen/a amigo/a	0.33	0.55	.30
Pelea con frecuencia con otros niños/as o se mete con ellos/as	0.46	0.68	.50
Se siente a menudo infeliz, desanimado o lloroso	0.27	0.53	.45
Por lo general cae bien a los otros niños/as	0.50	0.60	.41
Se distrae con facilidad, su concentración tiende a dispersarse	0.88	0.79	.65
Es nervioso/a o dependiente ante nuevas situaciones....	0.68	0.71	.61
Trata bien a los niños/as más pequeños/as	1.70	0.52	-.25
A menudo miente o engaña	0.36	0.61	.52
Los otros niños se meten con él/ella o se burlan de él/ella	0.25	0.52	.51
A menudo se ofrece para ayudar (a padres, maestros, otros niños)	1.38	0.64	-.21
Piensa las cosas antes de hacerlas	0.86	0.70	.51
Roba cosas en casa, en la escuela o en otros sitios	0.05	0.24	.22
Se lleva mejor con adultos que con otros niños/as	0.39	0.61	.13
Tiene mucho miedos, se asusta fácilmente	0.37	0.57	.21
Termina lo que empieza, tiene buena concentración	0.86	0.77	.58

Note. *M* = Mean, *SD* = Standard Deviation.

TABLE 3. Reliability indexes for each scale and total scale for teachers.

<i>Scales</i>	<i>Alpha</i>
Total Scale	.77
Emotional Symptoms Scale	.71
Behavioral Problems Scale	.75
Hyperactivity Scale	.85
Peer Problems Scale	.64
Prosocial Scale	.83

Internal reliability for parents responses

The descriptive statistics (Mean and Standard Deviation) and a measure of discrimination (corrected Item-Total Correlation) for the scale was calculated. For parent responses the total scale achieved a score of .76. The analysis for subscales showed a range from .58 to .77. In the case of teachers, the scale with the lowest internal reliability was located in the peer problems scale (see Tables 4 and 5).

TABLE 4. Mean, standard deviation and discrimination indexes for parents.

<i>Item</i>	<i>M</i>	<i>SD</i>	<i>r item-total</i>
Tiene en cuenta los sentimientos de los otros	1.67	0.50	-.20
Es inquieto/a, hiperactivo/a no puede permanecer quieto/a	0.88	0.79	.43
Se queja con frecuencia de dolor de cabeza, estómago, nauseas	0.48	0.69	.34
Comparte frecuentemente con otros niños	1.59	0.56	-.21
Frecuentemente tiene rabietas o mal genio	0.75	0.73	.50
Es más bien solitario/a y tiende a jugar solo/a	0.34	0.61	.22
Por lo general es obediente, suele hacer lo que le piden los adultos	0.65	0.62	.27
Tiene muchas preocupaciones, a menudo parece inquieto/a..	0.47	0.62	.43
Ofrece ayuda cuando alguien resulta herido, disgustado...	1.72	0.50	-.08
Está continuamente moviéndose y es revoltoso	0.79	0.79	.49
Tiene por lo menos un/a buen/a amigo/a	0.21	0.47	.14
Pelea con frecuencia con otros niños/as o se mete con ellos/as	0.38	0.61	.38
Se siente a menudo infeliz, desanimado o lloroso	0.37	0.60	.48
Por lo general cae bien a los otros niños/as	0.35	0.53	.18
Se distrae con facilidad, su concentración tiende a dispersarse	1.00	0.78	.56
Es nervioso/a o dependiente ante nuevas situaciones....	0.68	0.70	.52
Trata bien a los niños/as más pequeños/as	1.81	0.44	-.14
A menudo miente o engaña	0.48	0.62	.48
Los otros niños se meten con él/ella o se burlan de él/ella	0.50	0.66	.49
A menudo se ofrece para ayudar (a padres, maestros, otros niños)	1.47	0.59	-.24
Piensa las cosas antes de hacerlas	0.92	0.64	.31
Roba cosas en casa, en la escuela o en otros sitios	0.05	0.23	.20
Se lleva mejor con adultos que con otros niños/as	0.59	0.71	.41
Tiene mucho miedos, se asusta fácilmente	0.66	0.74	.36
Termina lo que empieza, tiene buena concentración	0.85	0.71	.41

Note. *M* = Mean. *SD* = Standard Deviation.

TABLE 5. Reliability indexes for each scale and total scale for parents.

<i>Scales</i>	<i>Alpha</i>
Total Scale	.76
Emotional	.71
Behavioural	.62
Hyperactivity Scale	.77
Peer Problems Scale	.58
Prosocial Scale	.69

Principal Component Analysis for SDQ, teacher sample and parents' sample

The factors were isolated following the Kaiser criterion (eigenvalues greater than 1) and the inspections of the Scree plot. The selected Varimax Rotation criteria increased the difference between isolated factors without losing explained variance for each item. For the teacher analysis, the Kaiser-Meyer-Olkin (KMO) measure yielded a value of .89, with a large value of partial correlation between variables meaning a compact pattern

of correlation for a suitable factor analysis (Field, 2009). Bartlett's Test of Sphericity was significant ($p \leq .05$) rejecting the null hypothesis of an identity matrix. A five-dimensional solution with 59% of explained variance was accomplished (see Table 6 for items loading in each factor).

TABLE 6. Factor loading, communalities and uniqueness for teachers as informants.

	<i>COMPONENTS</i>					
	<i>Conduct Problems</i>	<i>Prosocial Behavioural</i>	<i>Hyperactivity</i>	<i>Emotional Symptoms</i>	<i>Peer Relationship Problems</i>	<i>Communalities/ Uniqueness</i>
Behavioural Problems						
5. Temper	.73					.60/.40
7. Obedient	.49					.60/.40
12. Fights	.77					.66/.33
18. Argue with adult	.57					.50/.49
22. Spiteful	.35					.16/.83
Prosocial Behaviour						
1. Considerate		.72				.62/.37
4. Share		.72				.55/.44
9. Helpful		.81				.67/.32
17. Kind to Kids		.71				.55/.43
20. Helps out		.73				.59/.40
Hyperactivity						
2. Restless	.79		.28			.72/.27
10. Fidgeting	.78		.28			.72/.27
15. Distractible			.78			.79/.20
21. Reflective			.65			.65/.34
25. Persistent			.75			.74/.25
Emotional Symptoms						
3. Somatic				.68		.49/.50
8. Worries				.73		.61/.38
13. Unhappy				.70		.57/.42
16. Clingy			.60	.37		.60/.39
24. Fear				.54		.49/.50
Peer Relationship Problems						
6. Solitary					.64	.57/.42
11. Good Friend					.48	.56/.43
14. Popular	.33				.31	.54/.45
19. Bullied	.51				.48	.54/.45
23. Best with adult					.68	.48/.52

For the parents' analysis, the solution yielded for parents achieved a .85 value of KMO index. Bartlett's Test of Sphericity was significant ($p \leq .05$) rejecting the null hypothesis of an identity matrix. The five-dimensional solution reached 49.2% of explained variance, although the factorial structure posed more difficulties in its replication. We found some items which loaded in more than one factor (see Table 7 for items loading in each factor).

TABLE 7. Factor loading, communalities and uniqueness for parents as informants.

	<i>COMPONENTS</i>					
	<i>Conduct Problems</i>	<i>Prosocial Behavioural</i>	<i>Hyperactivity</i>	<i>Emotional Symptoms</i>	<i>Peer Relationship Problems</i>	<i>Communalities /Uniqueness</i>
Behavioural Problems						
5. Temper	.59					.53/.46
7. Obedient	.44					.42/.57
12. Fights	.60					.43/.56
18. Argue with adult	.48					.42/.57
22. Spiteful	.24				.65	.46/.53
Prosocial Behaviour						
1. Considerate		.66				.48/.51
4. Share		.61				.40/.59
9. Helpful		.63				.42/.57
17. Kind to Kids		.65				.45/.54
20. Helps out		.59				.50/.49
Hyperactivity						
2. Restless	.78		<.20			.65/.34
10. Fidgeting	.79		<.20			.69/.30
15. Distractible			.72			.66/.34
21. Reflective			.63			.55/.44
25. Persistent			.80			.70/.29
Emotional Symptoms						
3. Somatic				.62		.38/.61
8. Worries				.67		.49/.50
13. Unhappy				.68		.51/.48
16. Clingy				.58		.54/.45
24. Fear				.63		.42/.57
Peer Relationship Problems						
6. Solitary				.49	<.20	.39/.60
11. Good Friend		-.46			<.20	.40/.60
14. Popular		-.41			<.20	.35/.64
19. Bullied					.43	.44/.55
23. Best with adult					.61	.52/.47

Confirmatory Factor Analysis with maximum likelihood procedure was done for predicting the theoretical model for the SDQ proposed by Goodman (2001). This analysis was done over the teachers' responses due to the fact that this factorial structure showed a more consistent pattern of correlations compared with the parents' ones. The independence of error terms was specified, and the factors were allowed to be correlated. To test the goodness of fit a number of approaches were used. The Comparative Fit Index (CFI), the Goodness of Fit Index (GFI), the χ^2 Goodness of Fit Test and the Root Mean Square Error of Approximation (RMSEA). For interpreting a good fit of the data, we assumed that the CFI and GFI must to achieve values close to or greater than .95.

For the RMSEA, the value must be close to or less than .05 indicate a good fit, and values as high as .08 indicate a reasonable fit (Hu and Bentler, 1999). CFA was carried out using the EQS 6.0 (Bentler, 1995). Fit indices resulting from the CFA for the five factors hypothesized model were estimated. The resulting values for CFI, GFI and RMSEA were .93, .84 and .073 (.068 - .077), respectively. The χ^2 goodness of fit yield significant [$\chi^2(260)= 1,069.83; p < .05$]. The Alfa reliability coefficient was .77. The range of factors loading was .19 to .76. Being the item «*Termina lo que empieza, tiene buena concentración*» and the item «*Por lo general cae bien a otros niños*» those which the lowest and highest load respectively.

Discussion

The Spanish version of the SDQ for teachers and parents was administered in a sample of 595 children with the aim of establishing its psychometric properties. There was a high response rate which indicates its acceptance in community studies.

With regard to the psychometric properties of this instrument, the values obtained for the internal reliability for teacher responses are similar to those achieved in other studies (Du *et al.*, 2008; Giannakopoulos *et al.*, 2009; Goodman, 2001; Hawes and Dadds, 2004; Matsuishi *et al.*, 2008; Palmieri and Smith, 2007; Smedje *et al.*, 1999; Woerner *et al.*, 2004). Chronbach's alpha and other indexes of reliability were adequate and comparable to other European research studies and those found in the original English version (Goodman, 2001). For parent data we found minor but acceptable values compared to the teacher SDQ. Both samples shared high reliability values in the total difficulties scale and low values for the peer problems scale (Becker *et al.*, 2004; Muris, Meesters, and Van den Berg, 2003; Stone, Otten, Engels, Vermulst, and Janssens, 2010). Some authors assume that scales with fewer items have less internal consistency than more extensive ones (Van Widenfelt *et al.*, 2003). This could explain why the total scale score has a greater reliability coefficient than the individual scales.

Exploratory factor analysis for teacher responses replicated the original questionnaire. However some items yielded a load in a different factor than that predicted. The resulting pattern of main loading was nearly consistent with the factor structure of the original questionnaire (Goodman, 1997; Goodman, 2001). Finally, taking the result from the CFA we assume a replication of the values obtained in the literature that indicate a moderate-adequate fit for the factor structures proposed originally by Goodman (2001). The pattern of the Exploratory Factor Analysis for teachers' reveals that items number 2 («*Restless, overactive, cannot stay still for long*») and number 10 («*Constantly fidgeting or squirming*») loaded in the conduct problems scale instead of the hyperactivity scale. Item number 16 («*Nervous or clingy in new situations, easily loses confidence*») loaded on the hyperactivity scale instead of the emotional symptoms scale. Finally, items 14 («*Generally liked by other children*») and 19 («*Picked on or bullied by other children*») loaded on the behavioral problems scale instead of the peer problems scale. Nevertheless, the factor loading differences in these two items is a mere .2 and .3 respectively.

A closer inspection of items that loaded in other factor than that predicted showed that in the case of item 2 the Spanish translation uses the term «*hiperactivo*» for the term «overactive». This could create a confound, prompting the item to be saturated in both the behavioural problems and hyperactivity scales. In the case of item 10 the translation for «fidgeting» and «squirming» was «*moviéndose*» and «*revoltoso*». In Canary Island culture a child that «moves a lot» and «does not stop» is possibly not seen as a child with hyperactivity. Instead, this could be seen as a behavior problem. So this could be the reason for the load of item 10 in the behavioral problems scale. So it seems that items 2 and 10 must be revised for the Spanish version in the Canary Islands. There is another theoretical reason for the pattern of load found in items 2 and 10. The terms «restless» and «fidgeting» could be understood as relating to a behavioural problem and not a cognitive problem. In the hyperactivity scale, the items 15 (distractible), 21 (reflective) and 25 (persistent) are related to cognitive aspects of the hyperactivity construct. However items 2 and 10 refer to behavioural problems in the hyperactivity construct. This could be the reason why teachers and parents assign these items to behavioural problems instead of hyperactivity. In the case of items 14 and 19, clearly these could be a measure of not just peer problems but problems in general, as in the behavioural problems scale.

Exploratory factor analysis run on parent data showed that, as in the factorial structure of the teacher questionnaire, item 2 and item 10 loaded on the behavioural problem scale instead of the hyperactivity scale. It seems that item 2 and 10 are not performing properly on the hyperactivity scale. This item seems to be evaluating other aspects of behaviour not understood as hyperactivity. Item 6 («Rather solitary, tends to play alone») loaded on the emotional symptoms scale instead of the peer problems scale. In the case of item 6, being a «solitary» child seems to be understood by the parents as an emotional problem, not a problem of behavior with others. Items 11 («Has at least one good friend») and 14 («Generally liked by other children») loaded on the prosocial behaviour scale with a negative Pearson correlation, instead of the peer problems scale. It seems that for our sample of parents, to «Have at least one good friend» and «Generally liked by other children» are more related to prosocial behaviour than to peer relationship problems. If we check the items of the prosocial behaviour scale, these items 11 and 14, are related in a negative sense to this scale -»helps others», «kind to kids», «helpful», «shares with other children» and «considers others feelings». Item number 22 («Steals from home, school or elsewhere») loaded on the peer problems scale, instead of the behavioural problems scale. It seems that parents' understanding of «spiteful» was perceived as related to others in the school rather than being seen as a conduct problem which is exhibited in different contexts. Overall, the data from parents seems to be less clear in the factorial structure proposed for the SDQ. With regard to the items saturation, the peer problems scale only has two items with a proper load. The rest of the items from the scale loaded in other scales. These patterns of results have been found in most of the samples using parents and teachers as informants (Becker *et al.*, 2004; Du *et al.*, 2007; Obel *et al.*, 2004; Stone *et al.*, 2010; Woerner *et al.*, 2004).

Although the current study provides the first evaluation in Spanish of the SDQ, additional research with different samples in Spain are needed in order to accumulate data about the validity and internal factor structure. As a screening instrument suitable for professionals in school contexts to evaluate morbidity, the SDQ fits the psychometric and statistic requisites of this type of instrument. Once children with risk are detected, a proper evaluation with more fine grained instruments is still needed. The Spanish version of SDQ revealed psychometric properties comparable to other versions in different countries. However, testing the predictive role of the scale is necessary in order to test the factorial structure.

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