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Research paper

Internalizing and externalizing symptoms in Spanish children aged 6-8: Results of a latent profile analysis

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ABSTRACT

Background: Internalizing and externalizing problems are widely addressed in research. However, most studies use variable-centred approaches and ignore the possible co-occurrence of both types of symptoms. This study aimed to identify homogeneous groups of children with similar psychological difficulties and strengths, using latent profile analysis as a person-centred approach.
Methods: The parents of 107 Spanish children aged 6 to 8 years completed the Strengths and Difficulties Questionnaire (SDQ).
Results: The results revealed the existence of four latent groups. The children who belonged to the *high difficulties* group showed the most severe symptoms in emotional problems, peer problems and hyperactivity. The children classified in the *externalizing* group showed high levels of hyperactivity, behavioral problems, and emotional problems. On another hand, the *internalizing* profile grouped children with emotional and peer problems. Finally, the *well-adjusted* group showed an adequate psychological adjustment in all evaluated variables. High difficulties were associated with lower educational attainment of their parents.
Limitations: Data were reported from a single source of information, father or mother. Also, the socio-demographic variables that were related to each one of the four profiles only considered the age and educational level of the main informant.
Conclusions: These data suggest that co-occurrence of symptoms is very high in young Spanish children. It is essential to carry out clinical assessments that include both types of symptoms. Considering externalization and internalization as independent and exclusive phenomena can compromise the effectiveness of psychological treatments and preventive programs.

1. Introduction

The prevalence of psychological problems in children and adolescents is around 13.4 – 22% (Husky et al., 2018; Polanczyk et al., 2015). A recent study conducted with children aged 6 to 11 years from eight European countries found that 18.4% of children reported some internalizing problem, and 7.8% manifested some externalizing problem (Husky et al., 2018). The terms "internalizing" and "externalizing" are widely used to describe two common types of psychopathological problems (Achenbach et al., 2016). Externalizing problems are considered the behavioural symptoms that include hyperactivity, behavioural problems and aggressive behaviour, whereas internalizing problems refer to internal symptoms such as sadness, depression, anxiety, fears, social withdrawal and somatic complaints (Gage, 2013; Willner et al., 2016).

Early development of internalizing and externalizing problems may involve future antisocial and depressive psychopathological problems in child, adolescent and adult populations (Fanti and Henrich, 2010). Moreover, the early presence of externalizing problems can be a risk factor for early substance use in adolescence (Colder et al., 2013). Similarly, there is growing scientific evidence suggesting that children who show early externalizing symptoms are at greater risk of developing future internalizing problems (McElroy et al., 2017; Willner et al., 2016).

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However, despite a multitude of studies aimed at understanding these problems in childhood, the possible co-occurrence of internalizing and externalizing symptoms is often overlooked (Edwards and Hans, 2015; Eisenberg et al., 2009; Gilliom and Shaw, 2004; Oland and Shaw, 2005). The high correlations found between these two apparently independent classifications lead to the suspicion that the comorbidity is higher and more complex than initially believed (Achenbach et al., 2016; Bornstein et al., 2010; Keily et al., 2003; Willner et al., 2016). In this line, Oland and Shaw (2005) informed that studies aimed at evaluating internalizing symptoms may not have considered the presence of simultaneous externalizing problems, and vice versa. Fanti and Henrich (2010) added that this co-occurrence of symptoms develops at early ages, which can lead to different patterns of mixed symptomatology (Achenbach et al., 2016). Willner et al. (2016) hypothesized that comorbidity or co-occurrence between externalizing and internalizing symptoms could be due to a common underlying trait that increases vulnerability to developing psychological problems. Another possible explanation for the high co-ocurrence is that the presence of externalizing problems is related to greater social problems that, over time, could lead to emotional problems (McElroy et al., 2017).

Most studies aimed at explaining the comorbidity of disorders have used a variable-centred approach (McElroy et al., 2017). This approximation assumes the existence of homogeneity within a sample (Laursen and Hoff, 2006). The scarcity of studies aimed at analyzing the existing heterogeneity in a population limits the study of important phenomena (Rosato and Baer, 2012). According to Stanley et al. (2016), the Latent Profile Analysis (LPA) is more rigorous and objective than other techniques (i.e. cluster analysis) to capture children's symptomatology heterogeneity. LPA identifies patterns of several variables, instead of the relationship between them, and it also captures complex contextual effects that are not possible to identify using traditional techniques (i.e. regression).

Recent studies have focused on identifying the different profiles of psychological symptoms that exist in the child population. Willner et al. (2016) found that American children aged 5 to 7 years, who showed high levels of aggression/oppositional behaviour, presented patterns of symptoms grouped into four categories: externalizing, internalizing, comorbid and well-adjusted. McElroy et al. (2017) conducted a study with 7-year-old children in the United Kingdom and also found four profiles: externalizing, internalizing, high-risk (or comorbid) and normative. In these studies the externalizing profile was represented by higher scores on aggression, hyperactivity, behavioural problems or oppositional/defiant behaviour; the internalizing profile was characterized by greater emotional problems and withdrawal and the well-adjusted group was characterised by very low scores on both internalizing and externalizing symptoms. Children classified in the comorbid subgroup or high difficulties showed both internalizing and externalizing symptoms. In contrast, Ling, Huebner, Yuan, Li, and Liu (2016) found a different configuration in Chinese adolescents. Specifically, the results of their analyses yielded three profiles (high difficulties, uncooperative and well-adjusted). Regarding factors associated with this symptomatology, Husky et al. (2018) found that the mother's educational level and age could be related to the presence of externalizing and/or internalizing problems. However, few studies have tried to identify which risk factors are related to each group of symptoms (Edwards and Hans 2015).

The high co-occurrence of internalizing and externalizing symptomatology in children, the need to carry out studies in different cultures and the scarcity of studies that adopt a person-centred approach (Ling et al., 2016; McElroy et al., 2017) underline the need for further progress in this area. The present study aimed to determine whether there are significant groups of children with similar emotional and behavioural difficulties, as well as strengths, through the use of the Strengths and Difficulties Questionnaire (SDQ) in a sample of young Spanish children. A second objective was to identify possible socio-demographic variables related to each subgroup. According to the literature review, we expected to find at least four symptom profiles in children. Specifically, it was expected to find a structure similar to that found by other authors (externalizing, internalizing, comorbid and well-adjusted) (McElroy et al., 2017; Willner et al., 2016). Also, we expected to identify a profile characterized by the presence of both internalizing and externalizing symptoms. Finally, we hypothesized that the age and educational level of the parents would be associated differently with each group.

2. Method

2.1. Participants

Participants were 107 young children (47.7% were female). The sample was recruited from 22 schools in 19 towns located in the southeast of Spain. Children ranged in age from 6 to 8 years ($M = 6.91$, $SD = 0.80$). Most of them belonged to the middle socioeconomic level. Table 1 details children's and parents' characteristics.

2.2. Procedure

The sample of this study participated in a preventive intervention focusing on social anxiety. To carry out the study, the principals of 22 schools in southeast Spain were contacted. A total of 1400 families were informed of the objectives and conditions of the study. Participation was voluntary. The interested parents filled out an online form. Data were reported by one parent (father or mother). After analyzing the results, the children with a score equal to or higher than 3 in the Emotional Problems subscale of the SDQ - the cut-off point established to indicate borderline or abnormal symptoms (Goodman, 1997)- were selected. A total of 107 parents signed an informed consent after deciding to participate. The Ethics Committee of the authors' institution approved this work (DPS.MO.02.14).

3. Measures

3.1. Sociodemographics

The parents who participated in the study provided socio-

Table 1
Demographic distribution of the sample of Spanish young children ($N = 107$) and their parents according to parental reports

Variable	No	Percent (%)
Children's gender		
Male	56	52.3
Female	51	47.7
Children's age, years		
6	40	37.4
7	37	34.6
8	30	28
Children's siblings		
0	25	23.4
1	66	61.7
2	10	9.3
3	6	5.6
Parents' gender		
Male	19	17.8
Female	88	82.2
Parental Marriage Status		
Married	92	86
Divorced or separated	14	13.1
Single parent	1	0.9
Parental Educational attainment		
No studies/ Primary	20	18.7
Secondary	30	28
College	57	53.3
	M	*SD*
Children's age	6.91	0.80
Parents' age	41.61	4.96

demographic data related to their children (gender, age and number of siblings), as well as information about their marital status, age, and educational level.

The Strengths and Difficulties Questionnaire- Parent version (SDQ-P; Goodman, 1997)

This questionnaire consists of 25 items distributed in 5 subscales: Conduct Problems, Emotional Problems, Hyperactivity/Inattention, Peer Problems and Prosocial Behaviour. The response scale ranges from 0 (*not true*) to 2 (*certainly true*). The range of possible scores on each subscale varies from 0 to 10. The internal consistency of the total SDQ score in this study was excellent (α = .89), according to the criteria established to evaluate the quality of tests (Hernández et al., 2016). The internal consistency obtained in the subscales was: Conduct Problems (α = .80), Emotional Symptoms (α = .74), Hyperactivity (α = 0.82), Peer Problems (α = .86) and Prosocial Behaviour (α = .80).

3.2. Statistical analysis

Latent class modeling. Latent class analysis was chosen, because this type of analysis allows classifying the sample in homogeneous subgroups, despite the heterogeneity that exists in a specific population (Stanley et al., 2016). Thus, it is possible to study the co-occurrence of symptoms and allow advancing in the understanding which traditional classifications erroneously considered as independent and exclusive. This is particularly relevant for the development of internalizing and externalizing problems in early childhood.

Latent class models (i.e., latent profile models) were computed using scale values of the five subscales of the SDQ via Mplus 8 (Muthén and Muthén, 1998-2017). Given that the sample was rather small, we used continuous values of the subscales instead of single-item measures. In addition, as the sample was part of a preventive intervention focusing on social anxiety (pretest data were used), we decided to use all five subscales instead of the two broad categories of internalizing and externalizing problems, to precisely capture between-group differences, as suggested by previous research (Goodman et al., 2010). For model estimation, robust maximum likelihood estimation (command MLR in Mplus) was chosen with 2000 sets of random start values. The estimation process started with one latent profile and continued by increasing the number of latent profiles while comparing model fit.

To identify the best solution, overall model fit, parameter sparseness, classification quality and theoretical tenability of latent profile models are important (Nylund et al., 2007; Tomczyk et al., 2016; Tomczyk et al., 2018). To measure overall fit, the bootstrapped likelihood ratio test (BLRT) compares the estimated model to a model with one less latent group: A significant value indicates a better fit of the estimated model. To achieve reliable estimates, we chose 100 random starts with 50 bootstrap draws for each comparison. Parameter sparseness can be approximated using information criteria, such as the Akaike Information Criterion (AIC) and the sample-size adjusted Bayes Information Criterion (BIC), where a lower value indicates sparseness. Classification quality refers to the distinction between latent groups that can be inspected via average latent class probabilities (ALCP) and entropy. Values of ALCP and entropy range between 0 and 1; the closer to 1, the higher the classification quality. A value of at least .7 is recommended (Nylund et al., 2007). Finally, latent classes and profiles have to possess theoretical tenability in the context of relevant literature and theory. Therefore, the best latent profile solution is selected through a combination of statistical criteria as well as content validity.

Subsequently, for the selected model, scores on the SDQ subscales were compared among latent profiles using analysis of variance (ANOVA) and Scheffé test to determine which groups differed significantly. An analysis by cross-tabulation was conducted to determine whether there were differences in socio-demographic variables (gender, age, number of siblings, family situation and parents' educational attainment) by class membership. Parents' age was analyzed using ANOVA because of the continuous nature of the variable. We reported effect size by eta-squared (η^2) and Cramer's *V*, respectively, to evaluate the clinical significance of the statistically significant findings. Following Cohen (2013), η^2 was interpreted as follows: small (.01 to 0.06), medium (.06 to .14) and large (higher than .14); and for Cramer's *V*: small (.01), medium (.30) and large (.50). The description of the sample, cross-tabulation and ANOVA were run using SPSS v25. All analyses were based on α = .05.

4. Results

4.1. Latent profile models

To identify the best model, statistical criteria and interpretability of latent profiles were considered (see 2.4.1. Latent class modeling for details). Model fit criteria for models with up to six latent profiles are shown in Table 2. Although entropy, AIC and SSABIC favoured a model with six latent profiles, BLRT showed that assuming more than four latent profiles did not significantly increase model fit ($p > .05$). Evidently, the differences in information criteria between two consecutive models were noticeably smaller following the model with four latent profiles. Finally, entropy and ALCP (> .8), as well as theoretical interpretability, were equally convincing for a model with four latent profiles; therefore, we chose this model for further examination.

Across all latent profiles, prosocial behaviour was the highest-rated scale (all mean values > 6) and did not seem to differentiate between latent profiles. However, the remaining four subscales pointed to a clear distinction between profiles.

The first latent profile (*high difficulties;* $n = 17$) was characterized by very high values across all problem behaviours (except for conduct problems) and the lowest values for prosocial behaviour. The second profile (*externalizing;* $n = 16$) was characterized by the highest value for conduct problems, high emotional problems, very high hyperactivity and very low peer problems. The third profile (*internalizing;* $n = 23$) had the second-highest value for peer problems and was almost tied in emotional problems. Conduct problems and hyperactivity were less pronounced. Finally, the fourth profile (*well-adjusted;* $n = 51$) was the largest group and had the lowest values across all four problem behaviours and, at the same time, the highest value for prosocial behaviour. Estimated mean values with confidence intervals and latent profile proportions are shown in Figure 1.

4.2. Association between the subscales of the SDQ and latent classes

The results of ANOVA to analyze possible differences in SDQ subscale scores by latent profiles are summarized in Table 3. All of the *F*-values were statistically significant and the η^2 ranged from .10 to .84, indicating medium to large effect sizes. Children belonging to the *high difficulties* group showed a higher score in emotional symptoms (compared to the Well-adjusted group), higher score in conduct problems (compared to the Internalizing and Well-adjusted groups), higher score in peer problems (compared to the other groups) and a lower score in prosocial behaviour (compared to the Well-adjusted group).

The *externalizing* symptoms group had higher scores in emotional symptoms (compared to the well-adjusted group), conduct problems (compared to the internalizing and well-adjusted groups) and hyperactivity (compared to the Internalizing and well-adjusted groups). Children belonging to the *internalizing* group presented a higher level of emotional symptoms (compared to the well-adjusted group) and peer problems (compared to the externalizing and the well-adjusted groups). The *well-adjusted* group showed a higher score in prosocial behaviour (compared to the High difficulties group), and the lowest score in emotional symptoms (compared to the rest), conduct problems (compared to the high difficulties and externalizing groups), hyperactivity (compared to the high difficulties and externalizing groups), and peer problems (compared to the rest).

Table 2
Model fit criteria for latent profile analyses of psychopathological symptoms measured by the Strengths and Difficulties Questionnaire in a sample of Spanish children (N ==107)

	1 class	2 classes	3 classes	4 classes	5 classes	6 classes
Free parameters	10	16	22	28	34	40
BLRT	-	67.64***	25.18***	**26.48*** **	20.06	14.82
AIC	2399.37	2343.73	2330.54	2316.06	2308.00	**2305.19**
SSABIC	2394.50	2335.94	2319.84	2302.43	2291.46	**2285.72**
Entropy	1.00	0.78	0.78	0.86	0.89	**0.91**
ALCP	1.00	0.95	0.92	0.93	0.92	0.99
		0.92	0.90	0.82	0.96	0.96
			0.89	0.96	0.89	0.83
				0.94	0.91	0.92
					0.91	0.96
						0.97

Note. BLRT bootstrapped likelihood ratio test; AIC Akaike Information Criterion; SSABIC sample-size-adjusted Bayes Information Criterion; ALCP average latent class probabilities; *** $p < .001$; fit criteria indicating the best model are printed **in bold.**

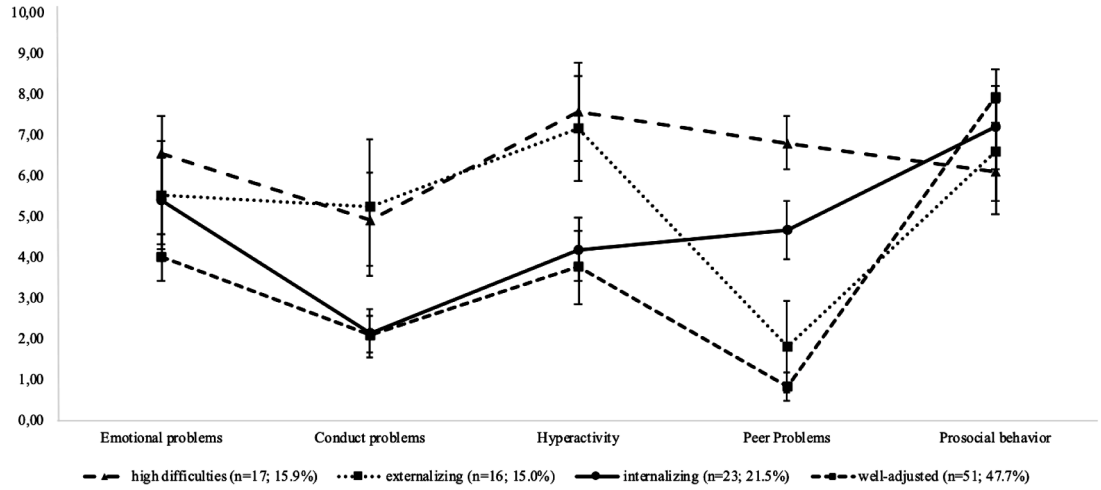

Figure 1. Estimated mean values with 95%-confidence intervals of Strengths and Difficulties Questionnaire subscales as well as estimated proportions of the identified four latent profiles in a sample of Spanish children (N=107). Each scale has a possible range from 0 (low extent of symptoms) to 10 (high extent of symptoms)

Table 3
Analysis of variance of subscales of the Strengths and Difficulties Questionnaire between latent profiles ($M \pm SD$)

	High difficulties (1) n=17	Externalizing (2) n=16	Internalizing (3) n=23	Well-adjusted (4) n=51	F	p	Direction	η^2
Emotional symptoms	6.59 ± 1.80	5.63 ± 2.12	5.35 ± 1.92	3.96 ± 1.63	10.90	<.001	1 > 4 2 > 4 3 > 4	.24
Conduct problems	4.88 ±1.90	5.31 ± 1.44	2.04 ± 1.22	2.08 ± 1.26	35.74	<.001	1 > 4 1 > 3 2 > 4 2 > 3	.51
Hyperactivity	7.53 ± 2.23	7.31 ± 1.70	4.17 ± 1.77	2.67 ± 2.39	21.46	<.001	1 > 4 1 > 3 2 > 4 2 > 3	.38
Peer problems	6.88 ± 1.05	1.88 ± 1.25	4.65 ± 0.98	0.80 ± 0.89	193.40	<.001	1 > 2 1 > 4 1 > 3 2 > 4 3 > 2 3 > 4	.84
Prosocial	6.18 ± 1.87	6.63 ± 1.74	7.30 ± 2.18	7.92 ± 1.98	4.10	.009	4 > 1	.10

4.3. Association between socio-demographic variables and latent classes

Cross tabulation analysis found no differences in children's gender and age, number of siblings of children, and family situation among the four latent profiles (Table 4). There was a statistically significant difference in parents' educational attainment among the four latent profiles, with a medium effect size ($p = .01$, Cramer's $V = .26$). Children belonging to the *high difficulties* groups were more likely to have parents with no studies or primary studies (47.1%) or parents with higher education (41.2%). More than half of the children belonging to the

Table 4
Results of the chi-square associating sociodemographic variables and latent class memberships, N (%)

	High difficulties (1) *n*=17	Externalizing (2) *n*=16	Internalizing (3) *n*=23	Well-adjusted (4) *n*=51	χ^2	*p*
Gender					2.49	.47
Male	9 (52.9)	11 (68.8)	10 (43.5)	26 (51)		
Female	8 (47.1)	5 (31.2)	13 (56.5)	25 (49)		
Age, years					3.86	.69
6	7 (41.2)	5 (31.3)	6 (26.1)	22 (43.1)		
7	7 (41.2)	5 (31.3)	10 (43.5)	15 (29.4)		
8	3 (17.6)	6 (37.5)	7 (30.4)	14 (27.5)		
Siblings					8.67	.46
0	4 (23.5)	3 (18.8)	7 (30.4)	11 (21.6)		
1	9 (52.9)	10 (62.5)	16 (69.6)	31 (60.8)		
2	2 (11.8)	1 (6.3)	0 (0)	7 (13.7)		
3	2 (11.8)	2 (12.5)	0 (0)	2 (3.9)		
Parents' gender					4.45	.21
Male	6 (35.3)	2 (12.5)	4 (17.4)	7 (13.7)		
Female	11 (64.7)	14 (87.5)	19 (82.6)	44 (86.3)		
Parental Marriage Status					7.42	.28
Married	14 (82.4)	12 (75)	21 (91.3)	45 (88.2)		
Divorced or separated	3 (17.6)	4 (25)	1 (4.3)	6 (11.8)		
Single parent	0 (0)	0 (0)	1 (4.4)	0 (0)		
Parental Educational attainment					15.27	.01
No studies/ Primary	8 (47.1)	4 (25)	3 (13)	5 (9,8)		
Secondary	2 (11.8)	2 (12.5)	8 (34.8)	18 (35.3)		
College	7 (41.2)	10 (62.5)	12 (52.2)	28 (54.9)		
					F	*p*
Parents' age	42.08 (5.23)	38.50 (2.71)	43.33 (5.90)	41.64 (4.65)	2.88	.04

externalizing (62.5%) and *internalizing* problems (52.2%) and the *well-adjusted* group (54.9%) had parents with higher education. Parents whose children belonged to the *internalizing* group were significantly older than parents whose children belonged to the *externalizing* group (η^2 = .08).

5. Discussion

The main objective of this study was to identify subgroups of Spanish children with similar difficulties and strengths. A second objective aimed to determine possible factors associated with the different groups.

The Latent Class Analysis, which allows the heterogeneity of a sample to be classified into homogeneous subgroups, revealed that the four-class structure provided the best approximation to the data. To reach these conclusions, the fit to models configured with different numbers of latent classes was analyzed. The four-class model was chosen for various reasons. Firstly, although the results of the six-class model showed a slightly better fit, the BLRT index did not show a significant increase compared to the four-class model. Furthermore, the principle of parsimony and the classification quality, assessed through the AIC, SSABIC and entropy indexes, indicated that the selection of the six-class model did not lead to a substantial improvement over the four-class model. Finally, the existence of four latent profiles is in line with the findings of other researchers in recent years, which would justify the decision at the theoretical level. For example, Willner et al. (2016), in a study with American children aged 5-7 years, and McElroy et al. (2017), in a sample of English children aged 7 years, obtained four different profiles that correspond to those found in this study (*high risk* or *co-morbid, externalizing, internalizing* and *well-adjusted* or *normative*). Obtaining four clearly differentiated profiles provides further evidence of the usefulness of SDQ, which is widely used in both clinical and research settings.

The *high difficulties* subgroup included 15.88% of the children. These children showed the highest scores in emotional problems, hyperactivity and peer problems. McElroy et al. (2017) and Willner et al. (2016) also found that the highest scores corresponded to the *high risk* or *comorbid* subgroup. However, the "anxiety" score obtained by American children was similar for both *comorbid* and *internalizing* profiles (Willner et al., 2016). It should be noted, because of their clinical relevance, that the socio-emotional and behavioural problems manifested by children with co-occurring symptoms are characterised by high persistence (Briggs--Gowan et al., 2006). The high scores obtained and the number of children classified within this profile confirm the alerts that have been made in recent years: the relationship between internalizing and externalizing symptoms may be more complex and more common than expected, especially at early ages (e.g., Bornstein et al., 2010; Fanti and Henrich, 2010).

The children classified in the *externalizing* subgroup (14.95% of the children) obtained the highest score in behaviour problems, compared to the rest of the groups. However, the most common symptoms were hyperactivity and emotional problems. These data are not consistent with those found by McElroy et al. (2017) because the externalizing profile of this sample was fundamentally characterized by the presence of hyperactivity and behavioural problems. Willner et al. (2016) also found that conduct problems and hyperactivity were the most common manifestations of children classified within an externalizing profile. Despite this, Willner et al. (2016) already reported that other researchers did not identify any group of children whose psychopathological manifestation was exclusively externalized. The presence of emotional problems as one of the main psychopathological manifestations in this subgroup led us to consider two possible explanations. Firstly, it could be established that emotional problems originate as a consequence of previously manifested behavioural problems and hyperactivity. Gilliom and Shaw (2004) found that previous externalizing problems were related to the development of internalizing problems over time. Following this line, McElroy et al. (2017) hypothesized that externalizing problems would generate social problems with teachers, parents and peers, which would lead to the development of associated emotional problems. Secondly, we could hypothesize that behavioural problems and hyperactivity/inattention may develop because of the children's difficulties to manage their emotional problems. In this respect, young children could externalize their psychological distress through irritability, tantrums or aggression, for example (Willner et al., 2016). It should be noted that sociocultural variables and socioeconomic conditions can explain the possible differences between English, American and Spanish samples. Although the analyses carried out in a sample of young Spanish children allow us to extend the previous knowledge to a different culture (Ling et al., 2016), more cross-cultural research is needed to study the association between socio-cultural and socioeconomic conditions and children's behaviour.

In addition, we observed that the *internalizing* subgroup was the second-highest number of children (21.50%). This seems to coincide with recent studies conducted with European children, where internalizing problems were found to be more common than externalizing ones (Husky et al., 2018). Children classified in an *internalizing* profile showed mainly emotional problems and peer problems, symptoms that correspond to those traditionally included in this category (Goodman, 1997; Willner et al., 2016).

Finally, almost half of the Spanish children were classified within the *well-adjusted* group (47.66%.) This group was the most numerous, and the children who belonged to it presented an adequate psychological adjustment in all the variables assessed, as expected (Ling et al., 2016; McElroy et al., 2017; Willner et al., 2016).

General considerations of the results found in *high difficulties* and *externalizing* profiles could lead us to consider hyperactivity as an observable symptom or indicative signal of both externalizing and combined problems. Also, the presence of internalizing problems at early ages does not exclude the possible presence of externalizing problems, and vice versa, so a careful and complete clinical assessment should be carried out before rushing to classify children into one category or another (Achenbach et al., 2016). In this sense, it is possible that psychological distress in early childhood manifests indistinctly through externalizing or internalizing symptoms (Willner et al., 2016).

Regarding the associated socio-demographic variables, no relationship was observed between the children's gender and age and their belonging to a particular group. However, significant differences were obtained in some variables related to parents, as expected. In this line, the analyses showed that approximately half of the parents of the children classified within the *high difficulties* subgroup had no studies or had primary studies. In contrast, more than half of the parents of children with *externalizing* and *internalizing* problems had college studies. Moreover, parents' older age was related to the presence of *internalizing* problems in children, and their younger age to *externalizing* problems. Other researchers also found that the mother's age and educational level could be related to the development of externalizing and/or internalizing problems (e.g., Husky et al., 2018). The parents' age and their educational level seem to be directly or indirectly related to the emotional and behavioural management of their children. On another hand, higher age is probably associated with more experience and, therefore, greater skills to manage their children's externalizing problems. However, these hypotheses should be tested in future investigations.

This work is not without limitations. Firstly, it should be noted that the small sample size may have affected the results, hindering the achievement of statistically significant differences that would be obtained in larger samples. Secondly, the sample of this study participated in a preventive intervention focusing on social anxiety, what compromises the generalization of results. Also, the data were reported from a single source of information, father or mother. In this same line, the socio-demographic variables that were related to each one of the four profiles only considered the age and educational level of the main informant. It might be interesting to replicate the analyses by including socio-demographic information of both parents. However, despite the limitations, this study offers some additional evidence for the potential utility of the SDQ to the categorisation of children's capacities and difficulties into four profiles: internalizing, externalizing, high difficulties or well-adjusted. Future studies could aim to replicate these analyses and relate them to the presence of psychopathology in parents. In addition, as a relationship has been found between parental educational styles and the development of externalizing problems (Rinaldi and Howe, 2012), it would be useful to know how parental educational styles and skills relate to different groups (*high difficulties, externalizing, internalizing* and *well-adjusted*). Similarly, longitudinal studies would allow more precise conclusions to be drawn about the continuity of symptoms over time (Oland and Shaw, 2005).

The simultaneous presence of internalizing and externalizing symptoms at early ages reaffirms that it is a mistake to understand these problems as independent and mutually exclusive (Achenbach et al., 2016). Conducting a comprehensive assessment process that includes the detection of both internalizing and externalizing symptoms will allow a better understanding of these disorders, which, in turn, will allow improving psychological treatment plans and preventive programs (Oland and Shaw, 2005). Likewise, an appropriate approach to these problems will significantly reduce the associated psychological problems and, therefore, economic, social and health cost.

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CRediT authorship contribution statement

Alexandra Morales: Investigation, Resources, Writing - original draft. **Miriam Rodríguez-Menchón:** Investigation, Resources, Writing - original draft. **Samuel Tomczyk:** Software, Formal analysis. **Iván Fernández-Martínez:** Writing - review & editing. **Mireia Orgilés:** Conceptualization, Methodology, Funding acquisition, Supervision, Writing - review & editing. **José P. Espada:** Validation, Visualization, Funding acquisition, Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no conflicts of interest.

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