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INTERNALIZING DIMENSIONS PROFILES OF CHILDREN REFERRED FOR EXTERNALIZING BEHAVIOURS IN SCHOOL PSYCHOLOGICAL SERVICES

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Abstract

Externalizing behaviours are among the most common and challenging childhood disorders. These behavioural traits are often associated with less obvious internal states, such as anxiety, depression or personality disorders, which are commonly ignored by mental health professionals. Recognizing and assessing these mood states in terms of anxiety level and depressive symptoms (especially self-esteem) and personality traits may help mental health specialist to design more effective interventions. 24 children aged 8 to 14 referred to school psychological services for disruptive behaviour disorders were compared to a control group, paired by age, gender and intellectual efficiency. Parents and teachers completed the Strengths and Difficulties Questionnaire (SDQ) in order to assess disruptive behaviours. Manifest anxiety, depressive symptoms, personality traits were assessed using respectively the Revised Children's Manifest Anxiety Scale (R-CMAS), the Multiscore Depression Inventory for Children (MDI-C), and the Hierarchical Personality Inventory for Children (HiPIC). Children with externalizing disorders presented many discreet indices of affective distress as higher level of physiological anxiety, sad mood, instrumental helplessness, social introversion, pessimism and lower level of conscientiousness and benevolence. These results should encourage child and adolescent's clinicians to screen for psychological vulnerabilities during a holistic psychological assessment including self-report questionnaires and child interviews in addition to the classical parents or teachers' questionnaires.

Keywords: externalizing behaviours; internalizing disorders; personality

Introduction

Although data vary according to when and where studies were carried out and the diagnostic criteria used, it appears that Attention-deficit/hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), and conduct disorder (CD) affect approximately 7.2% percent of

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children and adolescents and account for over 50% of referrals to child and adolescent mental health services (Thomas, Sanders, Doust, Beller et al., 2015). On average, this means that in a mainstream class of 25 children it is likely that at least one child will suffer from externalizing disorders. In the school context, this is a significant issue that can create barriers to learning.

Most studies suggest that children with one externalizing disorder are at increased risk of having a secondary or comorbid diagnosis (Reale, Bartoli, Cartabia, Zanetti et al., 2017; Waschbusch, Pelham Jr., Jennings, Greiner et al., 2002). Current estimates suggest that approximately 45 to 84% of children with ADHD are likely to present ODD or CD, and vice-versa (Barkley, 2006; Connor, Edwards, Fletcher, Baird et al., 2003; Wilens, Biederman, Brown, Tanguay et al., 2002). It is also well documented that children who exhibit conduct disorders and disruptive behaviours at a young age are likely to continue having similar behaviours throughout their life and will exhibit other difficulties, such as peer rejection, school problems, difficult interactions with parents and teachers in childhood, and low employment, poor academic achievement or antisocial behaviours in adulthood (Renk, 2008; Waschbusch et al., 2002)

Globally, these findings show that externalizing disorders in childhood are connected with severe negative consequences for the child with respect to its psychological wellbeing and psychosocial functioning. Given the significance and longevity of conduct problems, it is crucially important that school psychologists and mental health practitioners gain a comprehensive understanding of these difficulties, which enables them to cope with children with externalizing problems. There is an important impetus in different countries, including Switzerland, towards a more inclusive education system (Farrel & Ainscow, 2002). In this context, understanding how internalizing correlates with externalizing disorders is paramount for public health policy development.

The identification of internalizing variables associated with externalizing disorders will increase our understanding of comorbidity very common in these cases (Cuffe, Visser, Holbrook, Danielson et al., 2015). So far, studies have focused primarily on the comorbidity between externalizing disorders (e.g. ADHD and CD) and fewer studies examine the comorbidity of externalizing disorders and internalizing disorders (Jarrett & Ollendick, 2008). With respect to clinical practice, there is a further need to better understand the interdependence of inner conflicts and personality traits of children with externalizing problems as it might help professionals to adjust assessment, counseling or clinical interventions to account for comorbid conditions.

The purpose of this study is to examine the internalizing profile of children referred to school psychological services for externalizing problems. We will particularly focus our attention on anxiety level, depressive symptoms (especially self-esteem) and personality traits.

Externalizing behaviours and anxiety

Earlier studies, along with reviews of the literature on the overlap of ADHD with anxiety disorders, suggest that about 25-35% of children with ADHD were likely to have anxiety disorders (Bowen, Chavira, Bailey, Stein & Stein, 2008; Tannock, 2000). Up to 21% of children diagnosed with anxiety disorders were likely to have ADHD (Costello, Egger, & Angold, 2004). The association between these two types of disorders is significantly greater than expected by chance alone, with odds ratio ranging from 2.1 to 4.3, with a median of 3.0, even after controlling for the presence of other disorders (Angold, Costello, & rkanli, 1999). Peterson, Pine, Cohen, and Brook (2001) consistently noted a relationship between ADHD and anxiety disorders across four follow-up periods in their longitudinal study of 976 children, suggesting that this is a real comorbidity rather than a coincidence or referral bias.

Schatz and Rostain (2006) proposed that anxiety in ADHD might (1) partially inhibit the impulsivity and response inhibition deficit and (2) make working memory deficits worse. However, a meta-analysis of clinical literature using the stop task in ADHD patients did not find that anxiety increased response inhibition (Oosterlaan & Sergeant, 1998). Thus, enhanced response inhibition in anxious ADHD children may only be revealed in situations with high demands for response inhibition, such as school or home situations.

In a study by Elia, Ambrosini and Berrettini (2008), the comorbid Generalized Anxiety Disorder was equally prevalent in the three classical ADHD subtypes. Another recent study found that the association between ADHD problems and anxiety could be entirely attributed to attention problems, not hyperactivity/impulsivity (Michelini, Eley, Gregory & McAdams, 2015). Potential weakness in the nosological system, ADHD subtypes criteria in particular, may account for these differences. Rather than to consider anxiety comorbid condition as “noise”, that is, as extraneous factors to be controlled for in future ADHD studies, Jensen, Martin and Cantwell (1997) proposed that there may be a separate subtype of ADHD with comorbid anxiety that is pathogenically different than other types of ADHD and specially a second ADHD aggressive subtype. The anxiety subtype may have decreased impulsivity but increased difficulties on attentional measures. To date, the best criteria for grouping these subtypes remain an unresolved issue.

Schatz and Rostain (2006) also argued that anxiety in ADHD might be qualitatively different from more phobic types of anxiety seen in pure anxiety samples. ADHD children with anxiety rarely present fearful and phobic behaviours, but feel very concerned about their competency and performance (Brown, 2000; March, Swanson, Arnold, Hoza et al., 2000). Lufi and Parish-Plass (1995) found that ADHD children presented higher

level on a concentration and social worry scale. They suggested that ADHD children were aware of their problems to a certain extent and that this awareness could cause anxiety. In general, however, relatively little is known about the specific nature of anxiety presented by a number of children with externalizing disorders. Most studies in this field focused on a higher anxiety global factor. Further investigation is then needed to assess the anxiety symptom clusters implicated in behavioural disorders. In fact, different aspects of anxiety may function in different ways in relation to conduct problems. Michelini et al. (2015) suggest that future studies of psychiatric comorbidity should disaggregate anxiety and ADHD problems into their subtypes, taking into account the phenotypic and etiological heterogeneity within each disorder (e.g. ADHD) and broad disorder categories (e.g. anxiety disorders).

Finally, in regard to mentalization theory (Fonagy, Gergely, Jurist, & Target, 2002; Quartier, 2003) and studies on alexithymia (Sifneos, 1973), it is hypothesized that anxiety in children with behavioural disorders will present more as physiological symptoms than as explicit anxiety. As a consequence, this study will focus on physical anxiety such as fatigue, restlessness, irritability, sleep disturbance or nightmare, stomach pain and muscle tension.

Externalizing Behaviours and Self-esteem

Depressive symptoms have frequently been reported in children with ADHD (Jensen, Martin & Cantwell, 1997; Treuting & Hinshaw, 2001) or with Oppositional Defiant Disorder and Conduct Disorder (Lahey, Loeber, Burke, Rathouz, & McBurnett, 2002; Rowe, Maughan & Eley, 2006). Longitudinal studies showed that ADHD in young children robustly predict adolescent depression and/or suicide attempts (Chronis-Tuscano, Molina, Pelham, Applegate et al., 2013). Inversely, externalizing disorders have also been observed in children and adolescents with depressive symptoms (Lundervold, Hinshaw, Sørensen, & Posserud, 2016; Petot, 2008). However, depression is a complex phenomenon, which encompasses a large variety of conditions (Klein, Torpey, & Bufferd, 2008). Therefore, the present study will mainly focus on one of these conditions, which is self-esteem. Self-esteem could be regarded as a multidimensional concept and may be portrayed as different dimensions of self-image in different contexts. Self-esteem is an abstract cognitive and emotional concept of an individual's idea and values about herself, as well as the level at which the individual accepts her idea of her self-image (Edbom, Granlund, Lichtenstein, & Larsson, 2008).

It is generally assumed that children with externalizing disorders have lower self-concepts, self-esteem or self-image than other children, largely due to their difficulties in the academic, social, and behavioural domains (Edbom, Lichtenstein, Granlund & Larsson, 2006). More precisely,

aggressive ADHD children tend to show lower levels of self-esteem than do nonaggressive ADHD children (Treuting & Hinshaw, 2001). Despite the popular belief that children with externalizing disorders think poorly of themselves, there are conflicting research data regarding the relationship between attention deficit hyperactivity disorder or conduct disorders and low self-esteem (Edbom et al., 2008). As observed by Hoza, Pelham, Dobbs, Owens and Pillow (2002), two divergent viewpoints are argued to date in the literature. On the one hand, researchers argue that children with externalizing disorders exhibit a “positive illusory bias” in their self-perceptions; that is, they report higher self-perceptions than are warranted (Gresham, MacMillan, Bocian, Ward, & Forness, 1998; Owens, Goldfine, Evangelista, Hoza, & Kaiser, 2007). On the other hand, others report that they suffer from low self-views or poor self-esteem (Ialongo, Lopez, Horn, Pascoe, & Greenberg, 1994; Mazzone, Postorino, Reale, Guarnera et al., 2013; Treuting & Hinshaw, 2001). These apparently conflictual findings might be the both sides of the coin, so that positive illusory self-concepts might hide a non-recognisable and non-acceptable poor self-esteem (Diener & Milich, 1997). The Hoza et al (2002) study supports this assumption. Results suggested that aggressive and low-achieving ADHD boys tended to overestimate their competence the most in the domains in which they were most impaired.

The contradicting findings might further be explained by the differences in study samples and assessment strategies used in the referred studies. Overall, children with externalizing disorders seem to represent a heterogeneous group with respect to depressive symptoms and self-esteem (Treuting & Hinshaw, 2001). As a result, simple linear correlations method should be avoided in favour of more sophisticated statistic models, including subgroups classification (Magnusson, 1998).

Externalizing behaviours and personality

Until recently, few studies examined personality variables associated with behavioural disorders. To date, most of the research on this topic has focused on a very narrow range of personality constructs. In particular, much of this work has explored the link between extraversion and behavioural disorders (Nigg, 2000), especially the sensation seeking facet of this basic personality dimension. Drug use, binge drinking, high-risk sexual behaviour, accident involvement and risk taking in general were associated with sensation seeking (Zuckerman, 1994). Some authors also believed that individuals with ADHD were underaroused and thus sought external stimulation through increased activity and sensory experiences (White, 1999). However, a study by Blaskey, Harris and Nigg (2008) did not support this assumption. According to their results, ADHD was associated with executive control, but not with sensation seeking, reactive inhibition or

lateralized emotion processing. Further studies are thus needed in this specific area of research.

More generally, several studies of the link between externalizing disorders and personality have used hierarchical three-factor or five-factor models of personality. The five-factor model is currently the most common dimensional approach to personality traits. According to this model, five broad and independent domains are sufficient to describe personality traits. This biological based model postulates that personality traits are expressions of heritability and intrinsic maturation (McCrae, Costa, Ostendorf, Angleitner et al., 2000). The five domains are Neuroticism, Extraversion, Openness to experience, Agreeableness and Conscientiousness (McCrae & Costa, 1999). As mentioned above, Extraversion is frequently positively associated with ADHD in young adult (Braaten & Rosen, 1997). However, this positive link might change depending on age effect. Du Paul, Mc Goey, Eckert, and Van Brakle (2001) found that both parents and teachers of preschoolers with ADHD rated these children as more withdrawn and less cooperative and interactive to normally developing children, which suggests that these children are prone to low levels of Extraversion.

Not surprisingly, Neuroticism is another personality dimension that has received attention in the literature on behavioural disorders (Nigg, 2000; White, 1999). For example, Shea and Fisher (1996) found moderate associations between several measures of emotional lability and impulsivity symptoms in a non-clinical sample of boys (8 to 11 years of age), as well as moderate associations between the same emotional lability measures and hyperactivity symptoms in girls. Cukrowicz, Taylor, Schatschneider and Iacono (2006) observed higher negative emotionality in a group of comorbid conduct disorder/ADHD (11 to 17 years of age) compared to non-comorbid ADHD or CD. Authors concluded that an extreme personality profile might represent a liability toward the occurrence of ADHD and CD with more extreme profiles contributing to the occurrence of both disorders among boys and girls.

Concerning Agreeableness, frequent associations were found between low level of Agreeableness and high level of externalizing, either in children, in adolescence and adulthood (DeWolfe, Byrne, & Bawden, 2000; Huey & Weisz, 1997; Mervielde, De Clercq, De Fruyt, & Van Leeuwen, 2005; Parker, Majeski, & Collin, 2004).

Conscientiousness was found to negatively correlate with behavioural problems (Mervielde et al., 2005) and to be a powerful predictor for externalizing disorders in childhood (Huey & Weisz, 1997) and adulthood (Parker, Majeski, & Collin, 2004; Nigg, John, Blaskey, Huang-Pollock et al., 2002). For example, a group of preschool children with ADHD showed a high level of behavioural disinhibition (Sonuga-Barke, Dalen, Daley, & Remington, 2002), suggesting that low amounts of conscientiousness may be early personality features of this population.

Important questions remain to be answered about the relationship between externalizing disorders and Openness to experience. Shaw and Brown (1991) showed that ADHD children aged 11 to 13 years with IQ's of 115 or above presented higher figural creativity than high-IQ children without ADHD. However, creativity is only one of the facets of Openness to experience and this facet is usually seen as a complex multidimensional ability. There are indeed many different ways in which someone can be creative, and there are almost as many different ways that people try to measure creativity (Kaufmann, 2009). Attentiveness to inner feelings may be altered in children with externalizing disorders considering the poorer mentalization in hyperactive children (Quartier, 2003).

Much of the previous research on the relationship between externalizing disorders and the personality dimensions has focused on preschool children or adolescents and adults (Cukrowicz, Taylor, Schatschneider, & Iacono, 2006; Martel & Nigg, 2006; Nigg et al., 2002; Parker, Majeski, & Collin, 2004; White, 1999). The present study is designed to complete previous work in closing the gap between pre-school children and adolescents, using a new well-established instrument (HiPIC - Mervielde & De Fruyt, 1999, 2002; Mervielde, De Fruyt, Quartier, Rossier, & Bouvard, 2014; Rossier, Quartier, Enescu & Iselin, 2007) and investigating less known personality dimensions such as Imagination and particularly lower-order facets of personality traits (Creativity, Curiosity, Intellect, etc.).

The present study

Rather than focusing on externalizing behaviour, we suggest it to be crucial to assess also comorbid emotional problems of children with externalizing mental health difficulties (Jensen, 2003). This study aims to help child psychologists to increase awareness of the internalizing problems in children with externalizing behaviours. Thus, children are seen and treated not only based on how they behave, but also on how they feel or think. We will particularly focus on physiological anxiety, self-esteem and personality dimensions. This approach seems to be highly valuable as the presence of comorbid depression or anxiety and special personality traits is likely to impede the efficacy of both medical (stimulant medication) and psychotherapeutic treatment for children with externalizing problems (March et al., 2000; Jensen, Martin & Cantwell, 1997). Based on our review of the literature, we hypothesize that children with externalizing disorders may present physiological symptoms of anxiety, depressive thoughts and emotion in terms of a low self-esteem, and personality traits best characterized as representing a high level of Extraversion and a low level of Benevolence and Conscientiousness.

Method

Participants

This cross-sectional controlled study with a convenience sample included 48 children aged 8 to 14 (see Table 1). The 24 participants in the Externalizing Disorders group (EDg) were recruited in school psychology services. Externalizing disorders were measured using the *Strengths and Difficulties Questionnaire*, teachers' version (SDQ; Goodman, 1997). The control group was recruited in three state schools of the same area and was paired by age, gender and intellectual efficiency, as measured by two *WISC-IV* subtests: *Similarities* indicative of verbal comprehension skills and *Matrix Reasoning* for perceptual skills (Wechsler, 2003).

Table 1: Comparisons of the characteristics and severity of problems among Externalizing Disorders and control groups

	Externalizing disorders group (n = 24)		Control Group (n = 24)		Statistical Test	p Value
	Mean	SD	Mean	SD		
Control variables						
Gender (G/B)	1/23		1/23			
Age (in months)	123.5	19.4	125.3	16.9	t(46)=.348	.729
WISC-IV Similarities	11.2	3.0	11.4	3.2	t(46)=.233	.817
WISC-IV Matrix Reasoning	10.1	2.8	9.7	2.9	t(46)=-.564	.575
SDQ teachers^a						
Emotional symptoms	1.68	1.67	2.04	2.10	t(44)=.640	.526
Conduct problems ^b	3.69	2.37	1.12	1.42	t(34)=-4.405	<.001
Hyperactivity/inattention	7.36	2.40	3.96	3.10	t(44)=-.4.138	<.001
Peer relationship problems ^b	1.91	2.20	1.00	1.22	t(32)=-1.753	.097
Prosocial behaviour	5.00	2.60	6.58	2.65	t(44)=2.041	.047

Note. ^a Two participants of the Externalizing disorders group were reported to present high level of hyperactivity and conduct disorders at school, but SDQ teachers could not be obtained. ^b When the data did not meet the homogeneity of variances assumption according to the Leven's test, we used Welch's t test version.

Instruments

The *Strengths and Difficulties Questionnaire* (SDQ; d'Acremont & Van der Linden, 2008; Goodman, 1997) is a widely used and validated brief behavioural screening questionnaire that contains about 25 attributes, some positive and others negative. Items are divided between 5 scales of 5 items each, generating scores for conduct problems, hyperactivity-inattention, emotional symptoms, peer problems, and prosocial behaviour; all but the last one are summed to generate a total difficulties score. The parent version also focuses on the impact of emotional or behavioural disorders in child's everyday life. Parents and teachers are asked to rate the child on 3-point

Likert scales. Sample items are "Often has temper tantrums or hot tempers", "Restless, overactive, cannot stay still for long", "Many worries, often seems worried" and "Considerate of other people's feelings".

The Revised Children's Manifest Anxiety Scale (R-CMAS; Reynolds & Richmond, 1978; Reynolds, Richmond, & Castro, 1999) assesses both the degree and quality of anxiety experienced by children and adolescents. This measure is intended for use by children between 6-19 years, is self-administered, and usually takes approximately 10 minutes. The R-CMAS is not a pure measure of childhood anxiety as it contains a number of mood items and items that have to do with attentional, impulsivity, and peer interaction problems. The R-CMAS consists of 28 dichotomous (yes/no) items. Sample items are "I am afraid of a lot of things", "I am nervous", and "I often worry about something bad happening to me". Yes-responses are scored in the positive direction and summed to yield a total score. Three scale scores can be obtained: physiological anxiety, worry/oversensitivity, and concentration. The R-CMAS includes a 9 items Lie scale, which may measure defensiveness or social desirability. While a high score on this scale would invalidate the anxiety score, it still provides the clinician with useful information about the child's personality.

The Multiscore Depression Inventory for Children (MDI-C; Berndt & Kaiser, 1996; Berndt, Kaiser, & Castro, 1999), adapted from the MDI, is designed to investigate whether depression is present and what different features of depression are manifested in child and adolescent populations. This measure is intended for use by children ages 8 to 17, is self-administered, and usually takes approximately 20 minutes. Children indicate how they "usually feel" on 79 true/false items. Sub-scales include anxiety, self-esteem, social introversion, instrumental helplessness, sad mood, pessimism, low energy, and defiance.

The Hierarchical Personality Inventory for Children (HiPIC; Mervielde & De Fruyt, 1999, 2002; Mervielde, De Fruyt, Quartier, Rossier, & Blomart, 2014; Rossier, Quartier, Enescu & Iselin, 2007) comprises items that describe the normal range of child personality related behaviour. Five broad personality domains are measured, dispersed over 18 facets that are hierarchically organized under the five domains, that is Extraversion (partitioned in the facets Shyness, Optimism, Expressiveness, Energy), Benevolence (also known Agreeableness; further divided into Egocentrism, Irritability, Compliance, Dominance, Altruism), Conscientiousness (split into Achievement motivation, Concentration, Perseverance, Orderliness), Emotional Stability (divided into Anxiety and Self-Confidence) and Imagination (also known as Openness to experience; partitioned into Creativity, Curiosity and Intellect. Parents rate the 144 items on 5-point Likert scales. Sample items are "talks to people easily", "respects rules of politeness", "has a sense of order" and "is afraid of failure". The shortened

self-administered version (Quartier & Rossier, 2008) consists of 32 items, measures the domain level and is intended for use by children aged 8 to 14.

Procedure

The agreements of the School Department of the Canton de Vaud in Switzerland and of the Department of Childhood, Youth and Education of the Ville de Lausanne were obtained. All our partners presented a deep interest in the study, because externalizing disorders represent a main issue of concern and because the study procedure offers the possibility to implement valid and standardized instruments in daily routine. Training in the use of this study's instruments were offered to the 18 school psychologists involved in the research. In parallel, psychology master students collected control data. This study is designed in such a way (i.e. using standardized instruments), as the data collected are immediately helpful for clinical purpose. French speaking children aged 8 to 14 years were eligible to participate in the study if: (1) they were referred to our School Psychological Services of Lausanne and suburbs for Conduct Disorder, (CD) Oppositional Defiant Disorder (ODD) or Attention Deficit/Hyperactivity Disorder (ADHD), (2) scored "borderline" or "abnormal" on the scales "conduct problems" and "hyperactivity/inattention" of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) completed by both parents and teachers, and (3) their parents agreed to their participation in the protocol and provided a written informed consent prior to the entry in the study. They were excluded from the study if they reported experiencing major medical problems (e.g. severe illness such as cancer conducting to frequent hospitalizations) or a moderate to severe learning disability that would limit their involvement. Scientific literature consistently reports higher rates of boys with externalizing disorders compared to girls (Loeber & Farrington, 2000). Thus, we expect to recruit a vast majority of boys in our sample.

The control group, paired by age, gender and intellectual abilities was recruited in state schools of the same area, after agreement with the School Director and children's parents. The School and Youth Department of the Canton de Vaud had the research protocol. A brief description of the aims of the study and a consent form and right to withdraw were given to the parents of all participants (referred children and controls).

Analysis

As appropriate, parametric and non-parametric descriptive statistics were performed in order to observe psychological differences (personality, anxiety and depression level) between our two groups. Possible predictors variables of behavioural disorders were identified using Logistic Regression Analysis.

Results

As presented in Table 2, children with externalizing disorders reported higher level of anxiety, especially physiological anxiety, $U = 412.0, p = .004, d_{bw} = .82$, and social concerns, $U = 397.5, p = .009, d_{bw} = 1.25$. They also presented higher level of depression as manifested by sad mood, $U = 336.5, p = .006$, instrumental helplessness, $U = 377.5, p < .001, d_{bw} = 1.53$, pessimism, $U = 325.5, p = .016, d_{bw} = .66$, and defiance, $U = 359.5, p = .001, d_{bw} = 1.64$. Finally, children with externalizing disorders see themselves as less benevolent, $U = 265.0, p = .010, d_{bw} = -.61$, and less conscientious, $U = 166.0, p = .012, d_{bw} = -.98$. Conversely, these difficult children reported no explicit worry, $U = 329.5, p = .254, d_{bw} = .37$, and no lack of self-esteem, $U = 282.5, p = .177, d_{bw} = .84$, which confirmed their tendency to see themselves as emotionally stable, $U = 319.0, p = .522, d_{bw} = .52$.

Table 2: R-CMAS, MDI-C and HiPIC's Medians of T-scores for Externalizing disorders and Control groups, Mann-Whitney U test and Robust Effect Sizes

	Externalizing disorders group		Control Group		Mann-Whitney U	Robust Effect Size
	n	Mdn	n	Mdn		
R-CMAS						
<i>Physiological anxiety</i>	23	53.00	24	44.50	412.0**	.82
<i>Worry/Over-sensitivity</i>	23	49.00	24	46.00	329.5	.37
<i>Social concerns/Concentration</i>	23	52.00	24	41.00	397.5**	1.25
<i>Lie Scale</i>	23	43.00	24	54.00	169.0*	-1.02
<i>Total anxiety score</i>	23	54.00	24	45.00	404.0**	.97
MDI-C						
<i>Anxiety</i>	19	57.00	24	44.00	352.0**	1.41
<i>Self Esteem</i>	19	50.00	24	45.50	282.5	0.84
<i>Sad Mood</i>	19	49.00	24	43.00	336.5**	
<i>Instrumental Helplessness</i>	19	52.00	24	44.00	377.5***	1.53
<i>Social Introversion</i>	19	43.00	24	43.00	305.5	.00
<i>Low Energy</i>	19	47.00	24	46.00	275.0	.12
<i>Pessimism</i>	19	47.00	24	43.50	325.5*	.66
<i>Defiance</i>	19	58.00	24	45.50	359.5**	1.64
<i>MDI-C total score</i>	19	52.00	24	42.50	382.0***	1.90
HiPIC						
<i>Extraversion</i>	24	44.00	24	48.50	213.5	-.70
<i>Benevolence</i>	24	44.00	24	51.00	163.0*	-.61
<i>Conscientiousness</i>	24	44.00	24	51.00	166.0*	-.98
<i>Emotional Stability</i>	24	54.00	24	49.00	319.0	.52
<i>Imagination</i>	24	52.00	24	49.00	265.0	.38

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

The dimensions of the R-CMAS were screened with the backward-forward selection procedure according to AIC, after which multiple logistic regression analysis was performed in order to examine the relationship between Externalizing disorders and the R-CMAS predictor variables. This analysis identified Physiological anxiety and Lie Scale as predictive factor for the occurrence of Externalizing behaviours ($\chi^2(2) = 12.42$, $p = 0.002$; Pseudo $R^2 = 0.191$). A similar logistic regression analysis was performed with the variables of the MDI-C. This second analysis identified Anxiety and Instrumental helplessness as predictive factor for the occurrence of Externalizing behaviours ($\chi^2(2) = 16.00$, $p < 0.001$; Pseudo $R^2 = 0.271$). Finally, a third logistic regression analysis was performed with the variables of the HiPIC. This last analysis identified Benevolence and Emotional Stability as predictive factor for the occurrence of Externalizing behaviours ($\chi^2(2) = 10.53$; $p = 0.005$; Pseudo $R^2 = 0.158$).

Discussion

The present study examined the extent to which children with behavioural disorders may present less obvious internalizing problems. We hypothesized that children with externalizing disorders may report physiological symptoms of anxiety, a low self-esteem, a high level of Extraversion, a low level of Benevolence and Conscientiousness. In agreement with our hypothesis, children with behavioural disorders presented a higher level of physiological anxiety, such as measured by “It is hard for me to get to sleep at night” (item 13), “Often I feel sick in my stomach” (item 17) or “I am nervous” (item 34). These children did not report explicit worries or over-sensitivity. This result confirms the observation of Schatz and Rostain (2006) that the anxiety of agitated children is not of the same nature as that of purely anxious children. Children with externalizing disorders generally do not have sufficient mentalizing capacity to identify and express their anxiety (Quartier, 2003). These tensions are then expressed through a feeling of body nervousness or various somatic manifestations such as stomach-aches or insomnia. We believe that the externalizing disorders presented by these children are partly explained by internal tensions or fears that cannot be expressed into words.

Contrary to our hypotheses, children with externalizing disorders presented a non-significant higher level of self-esteem than controls. This may be explained by a “positive illusory bias” as postulated by Owens et al. (2007). However, our results showed that these children express more depressive feelings, such as sad mood, instrumental helplessness, social introversion and pessimism. Depressive symptoms are not only long-term consequences of the externalizing disorders (Chronis-Tuscano et al., 2010), but instead co-occur with the disturbing children’s behaviours. Goodman,

Stroh and Valdez (2012) suggested that in many cases parents as well as clinicians often focus on the disruptive symptoms, while missing the co-occurring internalizing symptoms. This lack of perception of the internal suffering of the child has consequences for the implementation of the treatment plan and therefore for the improvement of the child's difficulties

Our results also showed that personality traits, as described by the child himself, predicted externalizing behaviours. Although these children see themselves as emotionally stable, they described themselves as less benevolent and less conscientious as hypothesized. Interestingly, Extraversion, in general associated with sensation seeking in adolescence, didn't predict behavioural symptoms in school aged children, confirming Blaskey, Harris and Nigg's results (2008). Personality profile might then represent a liability toward the occurrence of ADHD and CD with more extreme profiles contributing to the occurrence of externalizing disorders.

Overall, our study clearly showed that children with externalizing problems present multiple psychological vulnerabilities. Previous researchers claimed that a clinical level of Externalization is a robust predictor of co-existing Internalizing problems (Pesenti-Gritti, Spatola, Fagnani, Ogliari et al., 2008). As psychologists, we could also argue that specific internalizing problems predict externalizing disorders. These results should then encourage school psychologists to screen for these psychological vulnerabilities during a comprehensive psychological assessment (Quartier & Brodard, 2016; Roksam, Kinoo, & Nassogne, 2007), including self-report questionnaires and child interviews in addition to the classical parents or teachers' questionnaires. As children with externalizing disorders are known to be reluctant to speak directly about (and even identified) their emotions and worries (Donfrancesco, Di Trani, Gregori, Auguanno et al., 2013), it seems then crucial to take time with them, to respect their pace (which often contrasts with the emergency measures expected by parents or teachers), and to use some inspiring mediators (projective methods, drawings, toys, puppets, etc.) to capture qualitative information of affective distress as physiological anxiety, instrumental helplessness, sad mood, pessimism and social concerns.

Previous studies (in UK) identified that only few children with conduct disorders receive any specific help (Vostanis, Meltzer, Goodman, & Ford, 2003, as cited in Coghill 2013), because there still exists the assumption that these children are not suitable for mental health services. By showing that children with disruptive behaviours also have psychological distress could encourage mental health clinicians, as school psychology for example, to take care and treat these challenging children.

Those with ODD and CD, however, are often still rejected at the referral stage or at an initial screening assessment with the recommendation

that they would be best managed by non-health services within the community.

Although the current study makes several interesting contributions to the literature examining the internalizing characteristics of children with externalizing behaviours, several limitations should be acknowledged. The most important limitation is a modest sample size. Given the hyperactivity, impulsivity and behavioural disorders presented by these children, school psychologists met difficulties in conducting the complete research procedure. Clinicians sometimes even didn't propose the research to some families (and by the way a complete assessment) when they were faced with too challenging and urgent issues in the family or at school. Another limitation is that family functioning was not taken into account, yet we know that in a majority of child and young people disorders, family functioning is a significant factor. Future studies should also better distinguish the different behavioural disorders and try to establish more specific internalizing dimensions' profiles.

Conclusion

Externalizing behaviours are challenging childhood disorders. In addition, our study showed that these behavioural traits are often associated with less obvious internal states, such as physiological anxiety, social concerns, sad mood, instrumental helplessness and lower level of Benevolence and Conscientiousness, which worsen functional outcome. Indeed, several studies indicated that this comorbidity is a risk factor for poor academic performance (Cuffe et al., 2015), sleep problems (Lycett, Sciberras, Mensah & Hiscock, 2015) and outcome in general. Given this relevant rate of co-existing internalizing problems, school psychologists should focus not only on behavioural disorders, but should also screen for psychological vulnerabilities during a holistic psychological assessment. Midgley et al. (2017) confirmed that many children with conduct problems received little help in understanding and integrating aspects of their temperament such as impulsivity, aggression, competitiveness or dominance and may benefit enormously from the opportunity to think about this with someone who is curious rather than judgmental. For example, Midgley, Ensink, Lindquist, Malberg & Muller (2017) proposed a time-limited mentalization-based treatment to help these children develop self-awareness and explore more adaptive ways of integrating these aspects of their temperament or personality. As children with externalizing problems have difficulties to identify and express feelings, clinicians could also propose a bodily approach such as relaxation treatment, psychomotricity or Mindfulness.

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