

Detection of behavioral and emotional disorders in residential child care: Using a multi-informant approach

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ABSTRACT

Young people in residential care (RC) are a group at high risk of developing mental health problems. One of the most commonly-used screening instruments is Achenbach and Rescorla (2001) dimensional, multi-informant ASEBA. The main objective of this study is to analyze the level of agreement between young people in RC and their care workers (who, in Spain, are called social educators, and who have a specific university degree). 617 young people in RC aged between 11 and 17 completed the Youth Self Report, while their social educators completed the Child Behavior Checklist (CBCL). A 2×2 ANOVA was performed with the intra-subject variable being the test scores and the inter-subject variable being in receipt of specialist treatment or not. The results indicate that the social educators tended to score more highly in externalizing scales, whereas the young people reported more internalizing problems. In the treatment group, the CBCL scores were higher than the YSR scores, but in the non-treatment group the opposite was found, particularly in internalizing scales. The results are discussed in comparison with concordance studies in the general population and we conclude that multi-informant instruments are appropriate for the population in RC.

1. Introduction

Young people out of home care make up a population at high risk of suffering from a mental health problem (Segura, Pereda, Guilera, & Abad, 2016). Having been victims of violence, severe neglect, or having had multiple placement changes while in care, among other variables, predict the development of psychiatric disorders (Lehmann, Havik, Havik, & Heiervang, 2013). Furthermore, these variables have a cumulative effect, the more there are, the more likely it is that mental health problems will surface (Raviv, Taussig, Culhane, & Garrido, 2010).

Research examining the prevalence of mental health problems in this population has found rates ranging between 40% and 88%, and always much higher than in the general population (Bronsard et al., 2011; Burns et al., 2004; Ford, Vostanis, Meltzer, & Goodman, 2007; González-García et al., 2017; Greger, Myhre, Lydersen, & Jozefiak, 2015; Jozefiak et al., 2016; Sempik, Ward, & Darker, 2008).

Despite this data, a considerable number of young people with mental health problems do not receive treatment of any kind (Burns et al., 2004; Sainero, Bravo, & Del Valle, 2014; Tarren-Sweeney, 2010). Several factors have been associated with lower probability of referral

to these services such as personal variables, type of mental health difficulties and socio-family and care process variables (Farmer et al., 2010; Raghavan, Inoue, Ettner, Hamilton, & Landsverk, 2010). Among these, some studies have identified young people with externalizing problems were referred to therapy in a lower proportion. One possible explanation may be that as part of their work, social educators take on dealing with externalizing problems such as aggressive or disruptive behaviour, so they do not result in treatment, while they have difficulties identifying internalizing problems (González-García et al., 2017).

Nowadays there is a consensus in calling for the use of objective, standardized protocols and tools to detect mental health problems so that treatment can be directed to young people in residential care who really need it (González-García et al., 2017; He, Lim, Lecklitner, Olson, & Traube, 2015; Martín, González-García, Del Valle, & Bravo, 2018; Sainero, Del Valle, & Bravo, 2015; Whittaker et al., 2016).

One of the most commonly-used instruments with infants and young people to detect cases in need of specialist care is the dimensional, multi-informant ASEBA model from Achenbach and Rescorla (2001). The ASEBA consists of three tests, the Child Behavior Checklist (CBCL) for parents, the Youth Self Report (YSR), which is a self-report for

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young people, and the Teacher Report Form (TRF) for teachers. The creators of ASEBA suggested that the clinical evaluation of infants and young people should have multiple perspectives of the child's behaviour, and be informed by various contexts (Achenbach, 2006). The ASEBA system has demonstrated its usefulness both in detecting psychopathological problems (Deutz, Geeraerts, Van Barr, Dekovic, & Prinzie, 2016; Van Meter et al., 2014; Volk-Kernstock, Skala, Klomfar, & Kothgassner, 2016), and monitoring treatment (Walter et al., 2018). In addition, it has been used in many countries and in different cultures, which allows for various comparative studies (Achenbach et al., 2008).

Because it is a system which uses multiple informants, one of the most interesting aspects it has raised for researchers is the level of agreement between the informants. Most research has examined the level of agreement between the YSR and the CBCL, finding low to moderate levels (Achenbach & Rescorla, 2001; Achenbach, McConaughy, & Howell, 1987). Some variables seem to influence the strength of the correlations between the CBCL and the YSR, finding lower levels of agreement the older the young person, in boys compared to girls, in conflictive families, in families with low levels of cohesion and organization and also in high socioeconomic levels (Chen, Ho, Lee, Wu, & Gau, 2017; Wang et al., 2014). In contrast, better agreement between informants is found in clinical samples (Achenbach & Rescorla, 2001; Rescorla et al., 2017).

The population of young people in residential care is a group in which the CBCL is not completed by parents, but rather by the social care workers. Albrecht, Veerman, Damen, and Kroes (2001) validated the use of the CBCL by care workers, finding the same factorial structure as with parents. However, despite being a population with a high prevalence of emotional and behavioral problems, which means there is a need to have rapid, reliable detection and referral tools, there is almost no research examining the agreement between informants when the CBCL is completed by care workers. The few studies that have been done agree with results from the general population, indicating that agreement between the informants is low, and is higher in externalizing compared to internalizing scales (Döhlitzsch, Kölch, Fegert, Schmeck, & Schmid, 2016; Gearing, Schwalbe, MacKenzie, Brewer, & Ibrahim, 2015; Sainero et al., 2015). Agreement between informants was also found to be higher the longer the young person spent in the care home, and lower in cases of children with insecure attachment (Gearing et al., 2015). When levels of agreement were examined in cases that had not been referred for treatment, the young people reported greater levels of suffering, especially in internalizing problems (Sainero et al., 2015). This seems to indicate that social educators tend to find it difficult to evaluate the severity of these types of disorders. Along these lines Döhlitzsch et al. (2016), in a sample of 374 young people aged between 10 and 18 in residential care in Switzerland, found that the YSR had higher validity than the CBCL for detecting psychopathological problems and problems of psychosocial adaptation.

This study aims to examine the levels of agreement between the YSR and the CBCL in the population living in residential care in Spain. According to the most recently published official statistics (Observatorio de la Infancia, 2018), there were 14,101 children and adolescents living in residential care in Spain, which is 42% of overall out-of-home care. It must be said that Spain is a country with a long tradition of out-of-home placements, and it is a care measure that has significant weight within the child protection system (Del Valle & Bravo, 2013).

Given the above, this study has two objectives. Firstly, it aims to examine the level of agreement between the two types of informants: young people in residential care (YSR) and their social educators (CBCL). Secondly, it will analyse the differences found in the CBCL and the YSR, paying particular attention to whether the same trends are seen between clinical (those who have been referred for mental health treatment) and non-clinical groups (those who are not receiving therapeutic care).

2. Method

2.1. Participants

The sample was composed of 617 participants, 323 girls (52.4%) and 294 boys (47.6%) aged between 11 and 17 years old ($M = 14.25$; $SD = 1.88$) who had been living in residential child care for at least 3 months. This represents all of the adolescents at this age in residential care in the Spanish regions or areas of Asturias, Cantabria, Extremadura, Murcia, the Diputación de Guipúzcoa, Cabildo de Tenerife and seven SOS children's villages around Spain. This study is part of wider research evaluating 1216 children aged 6–18, however in this study the sample selected was aged 11 and over ($n = 998$) with a YSR and CBCL fully completed. This led to 89 cases being rejected because of missing data. The study also excluded young people with some level of intellectual disability ($n = 198$) and unaccompanied foreign minors ($n = 94$) as they are subgroups with characteristics and needs requiring different analysis and the use of adapted instruments.

2.2. Instruments

We used various instruments to collect the variables analyzed in this study. We created an *ad-hoc* questionnaire based on the Residential Care Evaluation and Registration System (SERAR in Spanish) (Bravo, Del Valle, & Santos, 2015; Del Valle & Bravo, 2007) which collects relevant information in each case: (a) the intervention process (time in care, length of stay, original reason for care intervention, types of maltreatment); (b) family background and characteristics; and (c) emotional and behavioral problems, therapeutic care and type of mental health treatment (psychiatric, psychological and/or pharmacological). This last variable was used to categorize group "in treatment" (being in psychiatric, psychological and/or psychopharmacological treatment). The information was reported by the case worker in each case.

In order to analyze the presence of emotional or behavioral problems we used the multi-informant model of the ASEBA (Achenbach & Rescorla, 2001). In this case we used two of the tests: the Child Behavior Check List (CBCL) and the Youth Self Report (YSR). Each item has three possible responses: (0) not true (as far as you know), (1) somewhat or sometimes true (2) very true or often true. Both tests give eight specific clinical subscales and three second-order scales: internalizing, externalizing and total. The scores from the tests were transformed into T scores which allows classification of cases in three ranges; normal (≤ 59), borderline ($60 \leq 63$), and clinical (≥ 64) for the broadband scales, and normal (≤ 64), borderline ($65 \leq 69$), and clinical (≥ 70) for the eight specific sub-scales (first-order variables).

2.3. Procedure

The project complied with all of the ethical requirements in the 1964 Helsinki Declaration referring to research with human beings. The research team sought and obtained the appropriate permissions from the public administrations which are the guardians of each young person. Once ethical approval had been given by the Ministry of Science and Technology of the Spanish Government each of the participating residential facilities was contacted, the research was explained and their cooperation, and that of the young people was confirmed, the latter by informed consent. The researchers visited each residential facility to supervise completion of the questionnaires. Each young person's case worker completed the case questionnaire and the CBCL, while the young people were organized into small groups to complete their questionnaires, supervised by the researchers or psychologists at the care home who had been appropriately instructed beforehand.

2.4. Data analysis

Pearson correlations between each subscale and broadband scale in the CBCL and YSR in the whole sample were calculated. We also performed a repeated mixed measure 2 × 2 ANOVA using the score in each scale in the two tests as an intra-subject variable (CBCL score - YSR score in each subscale and broadband scales), and “in treatment”/not in treatment.“ (being in psychiatric (n = 116), psychological (n = 266) and/or psychopharmacological treatment (n = 100). We used normalized scores from each of the subscales in all analysis

Concerning the differences in scores between the CBCL and the YSR in order to see the level of agreement in each subscale, we used results from Pearson correlations, as well as we examined the intra-subject factor (informant) from mixed measure ANOVA (see Section 3.1 results section). Secondly, to analyze the differences found in the CBCL and the YSR according being in treatment, we examined the inter-subject (treatment) and the interaction effect from mixed measure ANOVA (see Section 3.2 results section).

All analysis were performed using the SPSS 24 statistics program.

3. Results

3.1. Differences in means and agreement level in the whole sample

Table 1 shows the means and correlations in each of the CBCL and YSR subscales in the full sample. The intra-subject effect (informant) was significant except in the somatic-complaints subscale and the internalizing and total broadband scales (see Table 2).

The scores were significantly higher in the YRS in the anxiety-depression and thought problems subscales. In contrast, the social educators reported higher levels of problems, significantly higher than the YSR, in the scales withdrawal-depression, social problems, disruptive behaviour and aggressive behaviour. The scales with the largest effect sizes were aggressive and disruptive behaviour (see Table 2).

In the broadband scales, only the externalizing scale exhibited significant differences, with the CBCL giving higher scores.

The correlations were significant and positive in all of the instrument scales (see Table 1). The strongest correlations were in scales associated with externalizing problems, both in disruption and aggression, and in the broadband externalizing scale.

3.2. Differences in mean scores and level of agreement based on having treatment or not

Table 3 shows the mean scores and standard deviations for each scale in the cases of having or not having treatment.

The inter-subject effect (treatment) was significant in all of the subscales, with higher scores for those who were having mental health treatment and with the largest effect size for the scales anxiety-

Table 1 Differences in means and agreement level in the whole sample.

	CBCL		YRS		Correlation	
	M (SD)	M (SD)	M (SD)	M (SD)	r	p
Anxiety-depression	58.04 (8.47)	59.45 (8.35)	59.01 (8.37)	57.53 (7.38)	0.33	< .001
Withdrawal	60.69 (9.66)	59.01 (8.37)	59.01 (8.37)	57.53 (7.38)	0.26	< .001
Somatic complaints	56.86 (7.57)	57.54 (8.20)	57.54 (8.20)	57.53 (7.38)	0.20	< .001
Social problems	60.84 (9.09)	59.94 (8.57)	59.94 (8.57)	57.53 (7.38)	0.26	< .001
Thought problems	56.23 (7.63)	57.53 (7.38)	57.53 (7.38)	57.53 (7.38)	0.24	< .001
Attention problems	61.40 (9.86)	61.46 (10.43)	61.46 (10.43)	57.53 (7.38)	0.35	< .001
Rule-breaking	63.24 (9.64)	61.74 (9.03)	61.74 (9.03)	57.53 (7.38)	0.61	< .001
Aggressive behavior	63.75 (11.41)	61.07 (9.25)	61.07 (9.25)	57.53 (7.38)	0.46	< .001
Internalizing	57.70 (10.35)	58.18 (9.80)	58.18 (9.80)	57.53 (7.38)	0.21	< .001
Externalizing	62.74 (11.51)	61.05 (10.42)	61.05 (10.42)	57.53 (7.38)	0.55	< .001
Total	61.24 (10.18)	60.38 (9.72)	60.38 (9.72)	57.53 (7.38)	0.36	< .001

Table 2 Statistics and the effect size in each on the scales.

	F	Sig	Partial Eta Squared
Anxiety-depression			
Informant (cbcl-ysr)	11.40	0.010	0.018
Treatment	59.33	< 0.001	0.088
Interaction	40.74	< 0.001	0.062
Withdrawal			
Informant (cbcl-ysr)	15.85	< 0.001	0.025
Treatment	15.85	< 0.001	0.024
Interaction	12.97	< 0.001	0.021
Somatic complaints			
Informant (cbcl-ysr)	2.60	0.100	0.004
Treatment	33.25	< 0.001	0.052
Interaction	4.40	0.030	0.007
Social problems			
Informant (cbcl-ysr)	6.24	0.010	0.010
Treatment	44.57	< 0.001	0.068
Interaction	38.86	< 0.001	0.060
Thought problems			
Informant	10.45	0.001	0.017
Treatment	49.06	< 0.001	0.074
Interaction	31.19	< 0.001	0.048
Attention problems			
Informant (cbcl-ysr)	0	1.00	0.000
Treatment	43.15	< 0.001	0.066
Interaction	6.21	0.013	0.010
Rule-breaking			
Informant (cbcl-ysr)	20.74	< 0.001	0.033
Treatment	22.72	< 0.001	0.036
Interaction	6.28	0.010	0.010
Aggressive behavior			
Informant (cbcl-ysr)	41.30	< 0.001	0.064
Treatment	29.76	< 0.001	0.047
Interaction	20.61	< 0.001	0.033
Internalizing			
Informant (cbcl-ysr)	0.44	0.503	0.001
Treatment	57.30	< 0.001	0.086
Interaction	29.36	< 0.001	0.046
Externalizing			
Informant (cbcl-ysr)	18.07	< 0.001	0.029
Treatment	30.49	< 0.001	0.047
Interaction	17.48	< 0.001	0.028
Total			
Informant (cbcl-ysr)	4.94	0.027	0.008
Treatment	62.93	< 0.001	0.093
Interaction	31.23	< 0.001	0.049

depression, thought problems, and for the broadband internalizing and total scales (see Table 2).

The effect of the interaction between the variables “treatment/non-treatment” and the informant (care worker/young person) was significant in all of the instrument subscales. For the clinical group, there were higher scores in the CBCL in all subscales, with the social educators detecting more problems than the young people. This difference was most marked in the social problems and aggressive behaviour scales. On the contrary, in the non-treatment group the informants’ scores were similar in the scales withdrawal-depression, attention problems, aggressive behaviour, and externalizing problems. The young people gave higher scores in the remaining subscales, reporting higher levels of, and more pronounced problems in the anxiety-depression and thought problems subscales as well as the internalizing problems scale (see Tables 2 and 3).

The figures show the effect of the interaction in the scales that gave the largest effect sizes. Fig. 1 shows the effect of the interaction between the variable “in treatment” and each informants’ score (CBCL-YSR) in the anxiety-depression subscale. In the treatment group the pattern is for the social educators to report higher levels of problems (CBCL)

Table 3
Statistics and the effect size in each on the scales for inter-subject effects and interaction.

	Treatment n = 297		Non-treatment n = 317	
	CBCL M(SD)	YRS M(SD)	CBCL M(SD)	YSR M(SD)
Anxiety-depression	61.44 (9.06)	60.30 (8.97)	54.92 (6.46)	58.63 (7.68)
Withdrawal	62.69 (10.09)	59.35 (8.87)	58.88 (8.88)	58.71 (7.90)
Somatic complaints	58.75 (8.17)	58.57 (9.20)	55.12 (6.53)	56.62 (7.02)
Social problems	64.13 (9.68)	60.47 (8.51)	57.85 (7.30)	59.41 (8.63)
Thought problems	59 (8.64)	58.14 (8.03)	53.70 (5.71)	56.92 (6.69)
Attention problems	64.24 (10.31)	63.08 (11.03)	59.79 (8.64)	59.94 (9.63)
Rule-breaking	65.28 (9.76)	62.93 (9.47)	61.28 (9.14)	60.59 (8.49)
Aggressive behavior	66.79 (12.00)	62.04 (9.74)	60.99 (10.08)	60.18 (8.71)
Internalizing	61.53 (9.44)	59.16 (10.12)	54.23 (9.90)	57.26 (9.41)
Externalizing	65.82 (10.87)	62.32 (10.69)	59.87 (11.40)	59.84 (10.06)
Total	65.15 (9.01)	61.68 (9.93)	57.64 (9.91)	59.13 (9.40)

compared to the young people (YSR). This is in contrast to the non-treatment cases, in which the young people’s scores indicate more problems than the care workers. The same interaction pattern occurs in the social problems scale (see Fig. 2).

4. Discussion

Despite young people in residential care are a group with a high prevalence of mental problems, there are a significant proportion of young people with mental disorders who are not receiving mental health treatment. There is no doubt about the need to introduce protocols and tools to ensure detection and early referral to treatment. One of the most commonly-used screening instruments for detecting those problems is the ASEBA system from Achenbach and Rescorla (2001). One of the peculiarities of our study is that the CBCL is completed by social educators rather than by parents. Although there is enough research that has examined the level of agreement between informants, few articles have analyzed the agreement between care workers and young people in care.

In terms of the first objective, looking at the level of agreement between informants, the results indicate that the mean scores of the

CBCL are significantly higher than the YSR scores in scales of anxiety-isolation, disruptive behaviour, aggressive behaviour and in the second-order externalizing problem scale. However, the YSR scores are significantly higher than the CBCL scores in anxiety-depression and thought problems. In the remaining scales the scores were similar and no statistically significant differences were found in somatic complaints, social problems or the second-order internalizing problems and total scales.

It seems that the social educators tend to score some scales more highly, particularly externalizing type scales, while the young people do the same in the internalizing scales, particularly in anxiety-depression and thought problems. Our results also showed greater agreement in internalizing and total broadband scales than previous research (Dölitzsch et al., 2016; Gearing et al., 2015; Sainero et al., 2015). Although it is notable that in both there was agreement between informants, no significant differences were found.

One possible explanation may be that the social educators are more sensitive to mental health problems. This reality has been increasingly recognized in recent years, which has resulted in greater awareness and sensitivity (Bronsard et al., 2011; González-García et al., 2017; Greger et al., 2015; He et al., 2015; Jozefiak et al., 2016; Martín et al., 2018; Sempik et al., 2008). As consequence, social educators are aware of the increased risk of mental health problems in young people out-of-home care and they have increased their capacity in detection of internalizing problems. This would be in line with the fact that practically half of the young people in residential care in Spain are referred to clinical treatment (González-García et al., 2017), which could also explain the levels of agreement between informants, as it is usually higher in the clinical population (Achenbach & Rescorla, 2001; Rescorla et al., 2017; Sainero et al., 2015), which in our study represented almost half the sample.

Our second objective was to see whether agreement between informants varied based on being referred to mental health treatment (clinical group) or not (non-clinical group). One main result to highlight is that scores in both the CBCL and YSR were significantly higher in the clinical group. This is in line with findings from previous research with social educators but not with young people, as previous studies had not found significant differences between clinical and non-clinical groups in the YSR (Sainero et al., 2015). One possible explanation may be that the sample of this study was taken exclusively from a particularly Spanish rural region. However, our study was much larger, and the sample comprised young people from more regions of Spanish residential care network. Furthermore, the study by Sainero et al. (2015) also highlighted that a significant proportion of young people with possible mental disorders were in the “not treatment group”. This could

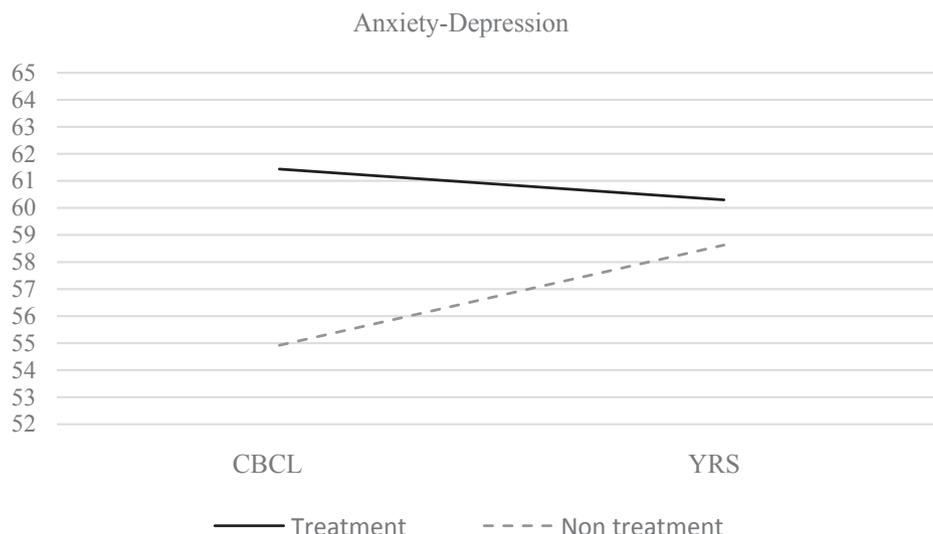


Fig. 1. The effect of the interaction in the anxiety-depression subscale.

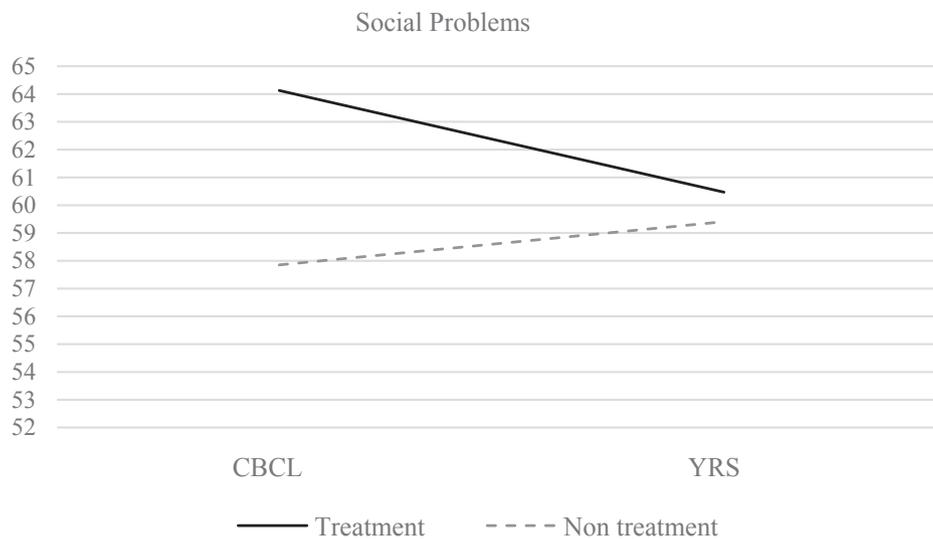


Fig. 2. The effect of the interaction in social problems subscale.

explain that scores in “non-treatment” group were higher, and they have not found differences between both groups.

When looking at the interaction effects, the CBCL scores in the clinical group were higher than the YSR in all of the scales. This chimes with our previous comments, it is the social educators who request referrals for treatment, so it is not unusual for them to have reported higher rates of problems in clinical cases.

In the non-clinical group, the scores of the two informants were similar in anxiety-isolation, attention problems, aggressive behaviour and the externalizing problems scale. In contrast, the mean scores in the YSR were significantly higher than the CBCL in anxiety-depression, somatic complaints, social problems, thought problems, disruptive behaviour, the internalizing problems scale, and the total score. This is in agreement with previous research, as Sainero et al. (2015) noted, there is significant (internalizing) emotional distress reported by the young people in the non-clinical group that the social educators do not seem to perceive, but which may indicate the presence of psychopathological problems or psychosocial maladjustment (Dölitzsch et al., 2016).

One striking result, and one which at first seems to contradict the previous paragraph, is that for the non-clinical group the score in the disruptive behaviour scale is higher in the YSR than in the CBCL. It is possible, and has been indicated by some authors (González-García et al., 2017; Martín et al., 2018), that social educators see externalizing problems as routine in the population of young people in residential care and dealing with them is considered to be part of their normal work, so it is not necessary to refer these kinds of problems for mental health treatment.

The main conclusion that we can draw from this study is the benefit of having *screening* instruments with multiple informants, like the ASEBA system, for the population of young people in residential care. This comes from two issues. Firstly, this is a group with a high risk of developing mental health problems that need a clinical approach (Bronard et al., 2011; Burns et al., 2004; Ford et al., 2007; González-García et al., 2017; Greger et al., 2015; Jozefiak et al., 2016; Sempik et al., 2008), which means that it is necessary to have objective, standardized, detection instruments. Secondly, because having multiple informants gives a much more complete picture of the emotional and behavioral problems of a young person whose life unfolds in different contexts (Achenbach, 2006) and where social educators may well have a bias evaluating these problems according to behaviour in the center. Our results support the idea, which has already been expressed in previous research, that young people and social educators do not always report the same thing when it comes to evaluating the presence of emotional and behavioral problems. The use of the YSR as a

complement to the CBCL is necessary to avoid the decision to refer someone to clinical treatment being exclusively based on an adult’s observations. In addition, given that young people in the non-clinical group report more suffering than their care workers, the use of the YSR would help to detect false negatives in treatment referral.

Although one of the strengths of our research is the fact that it is the largest sample looking at agreement between informants in residential care, there are some limitations to it which should be borne in mind when interpreting the results. Firstly, it did not include some variables that might mediate the level of agreement between informants, such as the time that the social educators and young people have been together, or the existence of attachment problems, for instance. It would seem advisable to perform a finer grained analysis to capture the effects of these variables, and to see whether they have different effects in clinical and non-clinical groups.

The second limitation is about the context in which the research was carried out. Although the ASEBA system is used in many countries and different cultures, and although it is valid for use with children in residential care, what is understood by residential care itself may vary by country, and so may include young people with different characteristics (children out-home care, under legal measures, with serious mental health problems, etc.), although in recent years efforts have been made to arrive at a consensus in this (Whittaker et al., 2016).

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Declaration of Competing Interest

The authors declared that there is no conflict of interest.

Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.chilyouth.2019.104588>.

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