

## Cross-Informant Agreement on Preadolescent's Emotional and Behavioral Problems in a Non-Clinical Cohort of Northern Italy Subjects: A Pilot Study

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### Abstract

**Background:** The emotional-behavioral repertoire has been extensively studied in children and adolescents, devoting less effort to preadolescence.

**Objective:** To investigate the emotional-behavioral repertoire compared to different sources of information – parents versus children – on a pilot non-clinical sample of Italian preadolescents.

**Methods:** Thirty pre-adolescents aged 11 to 14 years old (16 females, 14 males) are consecutively referred to the Service of Psychotherapy, Ospedale Maggiore Policlinico, Milan for an evaluation of their mental health status. Pre-adolescents and their parents were respectively asked to fill in the Youth Self-Report (YSR) and the Child Behavior Checklist (CBCL).

**Results:** Significant differences between mothers and fathers emerged at Syndrome Scales (SSs): Anxious/Depressed ( $p=0.026$ ), Social Problems ( $p=0.035$ ); at DSM-oriented Scales (DOSs) in Emotional Problems ( $p=0.012$ ) and at the scales in Internalization ( $p=0.019$ ). There are also significant differences on the total score ( $p=0.035$ ). Comparing answers reported by pre-adolescents versus those reported by their parents, the number of scales with significant differences increases (SSs. Anxious/Depressed:  $p=0.032$ ; Somatic Complaints:  $p=0.004$ ; Thought Problems:  $p=0.010$ ; DOSs. Anxiety Problems:  $p=0.044$ ; Somatic Problems:  $p=0.006$ ; Internalization:  $p=0.016$ ), with influences also the total score ( $p=0.049$ ). Discreet correlations in all the global scales and in total scores between pre-adolescents and mothers, but not fathers, were found. Conclusions: Parents show differences in their perception of children's emotional- behavioral problems, especially of internalizing behaviors. These results suggest the specific importance of an extended family analysis at this stage of development.

**Keywords:** Preadolescents; Family; Emotional and behavioral problems; Child behavior checklist (CBCL); Somatic complaints

### Introduction

The emotional-behavioral repertoire has been extensively studied in children and adolescents, devoting less effort to pre-adolescence, a delicate period of change of self-image and social relationships. Preadolescence is a period of physical and cognitive development, ranging between ten and fourteen years old, which requires a psychological adaptation to self-image changes, different peers' relationships and the capability of forecasting into the future [1]. In this phase, some emotional and behavioral problems could occur and information about that could be obtained from different informants, including not only their parents, but also pre-adolescents themselves.

For this aim, Achenbach's scales, including Child Behavior Checklist (CBCL) for parents and Youth Self Report (YSR) for children, are a widely used and quick tools, which could offer useful information about cross-informant agreement on preadolescent's emotional and behavioral problems [2]. Effectively, it is well known that different informants usually report different problems in children's development

[3] and that multi-informant convergence of data is substantially low [4]. This is even truer considering pre-adolescent's inclination not to share private information with a direct correlation to the age, which implies a decreasingly parent-child agreement concerning more internalizing than externalizing symptoms [5]. For these reasons, pre-adolescence is a peculiar phase of balance between social-cognitive development and personal independence, which requires up-to-date examinations. International studies about this subject highlighted significantly higher YSR mean scores than CBCL mean scores in almost all societies with a culture-dependent discrepancy between parents and children [6]. In Italy, many scientific studies have been conducted about the epidemiology of behavioral and emotional problems of preadolescents, devoting less effort to cross-informant agreement.

The PrISMA study [7], for example, assessed the prevalence of mental health disorders in 5000 pre-adolescents recruited from seven Italian urban schools, without even taking into account - as objective of the study - the convergence of response between parents and children and without considering the administration of the YSR to the preadolescents involved. Some other Italian studies, on the contrary, have effectively considered, as objective of their research, the

agreement among information sources. All these investigations, however, focused on subjects enrolled in Mental Health Centers or among specific populations, e.g., hypothyroidism [8] or spina bifida [9], without considering children not reaching the threshold of clinical attention for physical or mental problems.

#### The aims of our study were to:

(1) Obtain a preliminary profile of mother-father convergence on pre-adolescent's emotional and behavioral problems; (2) Obtain a preliminary profile of parents/pre-adolescents agreement on reported-problems. Possible associations with socio-demographic factors will be commented because of its explorative value.

The research was thought up as a pilot study in order to acquire useful information for the planning of an enlarged observational study about cross-informant agreement in a large sample of non-clinical pre-adolescents.

## Materials and Methods

Thirty pre-adolescents (16 females and 14 males) and their mothers and fathers were consecutively referred by a physician during a routine pediatric visit to the Clinical Psychology and Psychotherapy. Service of the Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico of Milan. The recruitment process had a duration of six months, between January 2014 and June 2014. Inclusion criteria of the study were: (a) Age between 11 and 14 years old; (b) Italian mother tongue; (c) no prior diagnosis of mental disorders. The mean age of participants was 12.2 years (SD=1.0) for preadolescents, 45.4 years (SD=3.7) for mothers and 48.9 years (SD=5.3) for fathers.

The mean level of parent education was 14.1 years (SD=2.8) for mothers and 14.8 years (SD=3.9) for fathers. All fathers and 86.7% of mothers were employed. 87% of pre-adolescents were raised in two-parent families, 13% were raised in single-parent or divorced families; an average of 2.1 children was present in each family. After obtaining written consent from both the parents to conduct the study, each participant was interviewed separately by a single professional about socio-demographic aspects and was then followed in the compilation of the CBCL questionnaire for parents and of the YSR questionnaire for pre-adolescent. Participants' characteristics were collected using an ad hoc questionnaire filled out by parents in the presence of a clinician. The questionnaire surveyed some demographic data - pre-adolescent's gender, age and attended class, parents' marital status and number of sons/daughters - and some variables related to the socioeconomic status of the family - educational level and occupation of both parents. Parental occupation was classified using the work section of the Cognitive Reserve Index questionnaire [10].

The followed procedures were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000.

The Child Behavior Checklist (CBCL) [11,12] is a parent-report questionnaire on which the children, pre-adolescents and adolescents aged 6 -18 years are rated. The CBCL was developed by Achenbach and is one of the most established inventories in both research and clinical practice with children and adolescents. The CBCL consists of two different parts: the first part explores the social competences of children and adolescents and the second part investigates their

behavioral and emotional problems [13]. The CBCL includes eight empirically-based Syndrome Scales (SSs): Anxious/Depressed, Withdrawn, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior and Aggressive Behavior; two broad-band scales: Internalizing and Externalizing, and a Total Problem scale. It can be scored also to obtain the following six DSM-Oriented Scales (DOSs): Affective Problems, Anxiety Problems, Somatic Problems, Attention Deficit/Hyperactivity Problems, Oppositional Defiant, Problems and Conduct Problems. The Italian version of the CBCL contains 112 items, each to be rated according to a 0-2 point Likert scale ranging from "not true" (0) to "somewhat or sometimes true" (1) to "very often true or often true"(2).

The YSR [14] was modeled on the CBCL, and it can be used with children aged 11 to 18 years old. The YSR measures self-reported ratings of behavioral and emotional problems of children and the items are worded in the first person. The Italian version of YSR contains 112 items similar to those on the CBCL and provides also scores for internalizing, externalizing and total problem scales, as well as Syndrome and DSM-oriented scales.

All statistical analyses were carried out using IBM SPSS Statistics version 20 (SPSS Inc.; Chicago, IL, USA). Descriptive statistics, comprising means, standard deviations, frequencies and percentages were performed to examine socio-demographic and clinical characteristics. All data were checked for normality on skewness and kurtosis measures. Information source differences in qualitative and quantitative variables were tested using independent sample t test, chi-square test and one-way ANOVA, as appropriate. Significant differences were followed up using post hoc Tukey-B test to assess differences between pairs of sources. Pearson's correlations assessed associations between demographic data and reported clinical scores, as well as between discrepancies in reported behavioural/emotional problems and these characteristics. All significance tests were conducted at the  $\alpha=0.05$  level and were two-tailed.

## Results

Analyzing primarily scores obtained by mothers and fathers on the CBCL/6-18, differences emerged at Syndrome Scales (SSs) in Anxious/Depressed ( $t=2.294$ ,  $df=46$ ,  $p=0.026$ ) and Social Problems ( $t=2.178$ ,  $df=46$ ,  $p=0.035$ ), at DSM-oriented Scales (DOSs) in Emotional Problems ( $t=2.617$ ,  $df=46$ ,  $p=0.012$ ) and at the broadband scales in Internalization ( $t=2.431$ ,  $df=46$ ,  $p=0.019$ ) and Total Problems ( $t=2.178$ ,  $df=46$ ,  $p=0.035$ ).

The mean scores obtained on the Total Problems, Internalizing and Externalizing scales by parents and children on the CBCL and YSR respectively, and their correlations are presented in Table 1. Comparing answers reported by pre-adolescents versus those reported by mothers and fathers, significant differences emerged: at SSs in Anxious/Depressed ( $F=3.613$ ,  $df=2$ ,  $p=0.032$ ), Somatic Complaints ( $F=5.854$ ,  $df=2$ ,  $p=0.004$ ) and Thought Problems ( $F=4.864$ ,  $df=2$ ,  $p=.010$ ); at DOSs in Anxiety Problems ( $F=3.269$ ,  $df=2$ ,  $p=0.044$ ) and Somatic Problems ( $F=5.477$ ,  $df=2$ ,  $p=.006$ ); at the broadband scales in Internalization ( $F=4.367$ ,  $df=2$ ,  $p=.016$ ) and Total Problems ( $F=3.147$ ,  $df=2$ ,  $p=0.049$ ). Investigating scores' discrepancies between pairs of sources, we found a restricted significant difference on Somatic Complaints as SS ( $p<0.05$ ) and Somatic Problems as DOS ( $p<0.05$ ) between pre-adolescents and both parents.

	YSR m ± sd	CBCL mothers m ± sd	r	CBCL fathers m ± sd	r
Total	43.3 ± 19.7	42.2 ± 19.8	0.477*	30.5 ± 16.2	.359
Internalizing	14.3 ± 8.1	13.0 ± 6.9	0.475*	8.3 ± 6.1	.011
Externalizing	10.3 ± 5.8	11.4 ± 7.9	0.397*	8.9 ± 6.4	.432
*P<0.05					

**Table 1:** Mean (m), standard deviation (sd) and Pearson's correlation coefficients (r) between YSR filled in by preadolescents and CBCL filled in by mothers and fathers in total problems, internalizing and externalizing scales (n = 30).

Exploring possible intervening variables in parent-children disagreement, a direct correlation between the difference between the CBCL and YSR total score – Δ CBCL/YSR – of mothers and children (r=0.428, p=0.026) and the total number of children per parent emerged. This type of score changes, dependent on family size, was not detected in the case of fathers (r=0.207, p=0.395). Finally, no association between the age of the child, the age or the educational level of the parents and this Δ CBCL/YSR were found.

## Discussion

This study estimated the pattern of agreement between parents and pre-adolescents on emotional and behavioral problems in a pilot non-clinical sample of Italian children aged 11-14 years. The aims of our study were to obtain preliminary profiles of mother-father and parent-children convergence on preadolescent's emotional and behavioral problems, as well as to explore possible socio-demographic factors associated with informant discrepancies in our sample.

With regard to the first aim, we found a substantial intra-parental agreement on pre-adolescent's emotional and behavioral problems with the exception of some internalizing behaviors, for which mothers have shown more consistencies with their children, substantially in line with the literature [5,15,16]. Effectively, our results described a discreet correlation in all the broadband scales and in the total problems between pre-adolescents and their mothers, but not between these children and their fathers. There may be numerous reasons why mothers showed more convergence with scores obtained by their sons and daughters. Among these reasons, the most prominent is probably the major contact between mother and children in Italian culture, which is one of the primary factors diminishing scores' discrepancies between parents and children [6]. A recent Chinese study on cross-informant agreement among school adolescents aged 11-18 years, for example, has highlighted a high parent-adolescent agreement on emotional and behavioral problems, probably due to closer parent-children relationships of Chinese families [17]. These data are substantially in line also with other international studies about cross-informant agreement, which highlighted an engagement in more self-disclosure of children and adolescents with their mothers [18,19] and low consistencies between father-children ratings [5]. With regard to the second aim, another interesting result was the substantial discrepancy between parents and children ratings on somatic problems. It is well known in the literature how children seem to show an increase in prevalence of somatic complaints during late childhood and early adolescence [20] and that they report as prevalent somatic problems headaches and abdominal pain [21], which are closely related to anxiety problems [22]. This result can be interpreted as a probably reduced parents' awareness of anxious problems of their

children, because of a difficulty in relate emotional with physical problems at this stage of development. Concerning socio-demographic factors associated with informant disagreement, our results described an interesting effect of total number of children per family in the capability of mothers to converge their perception with those of their children, effect not seen in the case of fathers. This result could be in line with those studies that have shown how mothers compared to fathers seem to be more susceptible to home stressors, e.g. a higher number of children after which taking care. However, in reason of our limited sample, we are not able to count out that other factors, here still not considered, could influence the discrepancies above mentioned.

Our study presents some limitations as the limited sample, but this is in the light of a pilot role of our investigation, and the mono-center quality of recruitment for the same reason. Moreover, in this study we didn't analyze gender differences in parents-daughter and parents-sons agreement, because of the small sample recruited, but this could be one of the interesting suggestions for future researches focused on cross-informant agreement about pre-adolescents' emotional-behavioral problems. Other future investigations should consider bigger sample of children and parents, possible intra- and extra-familial factors involved in parents' perceptions, a longitudinal monitoring of their agreement as well as correlations with other clinical indices of interest. This perspective will allow investigations also in other specific population of non-clinical preadolescents with the obtainment of more awareness in this phase of development.

In conclusion, our study analyzes for the first time the parents/pre-adolescents agreement on emotional and behavioral problems in a non-clinical cohort of Italian pre-adolescents aged 11-14 years. Our findings highlight how mothers show more convergence with their children's reported-problems, raising the interest in investigating which type of factors could be involved in this process. These preliminary results raise the interest in future researches about cross-informant agreement in non-clinical cohort samples. Effectively, studying the intra- and extra-familial factors involved in cross-informant agreement's differences in a larger cohort of non-clinical families could have important implications both towards the planning of extended interventions helpful to primary prevention of mental health, and towards our knowledge about the approach to this delicate age itself.

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