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**To cite this article:** Vera Regina Röhnelt Ramires, Guilherme Fiorini, Fernanda Munhoz Driemeier Schmidt, Camila Piva da Costa, Elenice Deon & Rob Saunders (18 Nov 2023): The relationship between general psychopathology in young people with family functioning and engagement with psychotherapy, *Psychotherapy Research*, DOI: [10.1080/10503307.2023.2281549](https://doi.org/10.1080/10503307.2023.2281549)

**To link to this article:** <https://doi.org/10.1080/10503307.2023.2281549>




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Published online: 18 Nov 2023.



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RESEARCH ARTICLE

# The relationship between general psychopathology in young people with family functioning and engagement with psychotherapy

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(Received 26 July 2023; revised 27 September 2023; accepted 5 November 2023)

## ABSTRACT

**Objective** to examine whether an underlying general psychopathology factor (p factor) existed in children and adolescents attending psychodynamic psychotherapy and whether this general psychopathology factor was associated with family functioning and engagement with psychotherapy.

**Method** Participants were 1976 children and adolescents, and their families, who sought psychodynamic psychotherapy from a community-based clinic in Southern Brazil. The Child Behavior Checklist and the Family Adaptability and Cohesion Evaluation Scales for assessing symptoms and family functioning were used, with treatment engagement data available through linked records. Confirmatory factor analytic methods examined psychopathology and regression models were constructed to examine associations.

**Results** A general psychopathology factor and specific internalizing and externalizing factors were identified. Higher general psychopathology scores at assessment were associated with an increased likelihood of dropout and poorer attendance compared to completing treatment. Father's educational level, living with both parents, lack of family adaptability and cohesion, and maltreatment experience were related to increased p factor severity.

**Conclusion** General psychopathology severity seems to contribute to child and adolescent psychotherapy outcomes, increasing the risk of non-adherence and dropout. Family difficulties and traumatic experiences may increase p factor severity. Identifying general psychopathology routinely can be crucial for developing effective treatment plans.

**Keywords:** children; adolescents; psychopathology; psychotherapy; p factor

**Clinical or Methodological Significance of this Article:** This study identified that a general indicator of psychopathology (referred to as p factor in the literature) in children, constructed from items across a range of psychological constructs, was associated with psychotherapy outcomes. Higher levels of general psychopathology at assessment were associated with an increased risk of non-engagement with services after referral as well as dropping out of treatment early, compared to completing treatment. Maltreatment, poor family functioning and not living with both parents were associated with higher general psychology levels. Identifying these at-risk children could inform tailored strategies (e.g. more intensive intervention and monitoring), to reduce the risk of poorer engagement and outcomes.

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## Introduction

Clinical experience demonstrates that a significant number of patients present to services with two or more mental health conditions or disorders. However, standardized diagnostic systems used for research and practice usually describe mental disorders as categorical, independent, and distinct (Caspi & Moffitt, 2018). This view has been questioned and increasing evidence points towards a dimensional approach to psychopathology, based on the assumption that mental states and their disorders do not constitute distinct and independent categories (Smith et al., 2020).

According to Caspi and Moffitt (2018), numerous disorders share the same risk factors and biomarkers and often respond to the same therapies. Evidence accumulated in recent years indicates that there may be a single dimension capable of measuring a person's susceptibility to present a mental disorder, the comorbidity between several disorders, their persistence over the years, and the severity of symptoms. This dimension was named the "p factor," and has the potential to integrate all mental disorders described by psychiatric classification systems in dozens of different diagnoses. This p factor alongside, but distinct from, individual domains such as internalizing disorders, externalizing disorders, and psychotic disorders (or thought disorders). Evidence from several studies suggest higher levels of p (denoting higher psychopathology) are associated with family history of psychiatric illness, history of childhood development, brain function, and impairments in adult life (Castellanos-Ryan et al., 2016; Gluschkoff et al., 2019; Greene & Eaton, 2017; Laceulle et al., 2020; McElroy et al., 2018; Pettersson et al., 2018; Sallis et al., 2019; Smith et al., 2020; Snyder et al., 2019). This general psychopathology factor has been identified in numerous studies across countries, measures, and informants (self-report, parents, teachers) (Caspi et al., 2014; Castellanos-Ryan et al., 2016; Laceulle et al., 2015; Lahey et al., 2012, 2017; Martel et al., 2017; Murray et al., 2016; Patalay et al., 2015; Snyder et al., 2017).

Dimensional models for understanding psychopathology have more commonly been used in research focusing on childhood and adolescence than with adults. Empirical studies converged on the consideration of two primary dimensions to characterize childhood disorders, which were called internalizing and externalizing (Achenbach & Edelbrock, 1981).

Cross-sectional studies have demonstrated correlations around .5 between disorders in the internalizing, externalizing, and psychotic groups, transcending these diagnostic domains (Wright et al., 2013). Longitudinal studies have shown homotypic and

heterotypic sequential patterns of comorbidity, and throughout the life cycle, a given disorder can be both a predictor of its later occurrence and the occurrence of another mental disorder (Costello et al., 2003; Lahey et al., 2014; Moffitt et al., 2007). Researchers have also observed that p factor scores were able to predict future psychopathology from childhood onwards and remain stable (Manfro et al., 2019; Sallis et al., 2019; Snyder et al., 2017).

Therefore, the importance of identifying and understanding the variables associated with the p factor and its greater or lesser intensity has been recognized. Along these lines, the general psychopathology factor has already been associated with parent's harsh discipline (Waldman et al., 2016), maltreatment by caregivers (Caspi et al., 2014), as well as physical and sexual abuse, and neglect (Lahey et al., 2012). Among the traumatic experiences that can be experienced in a child's or adolescent's developmental trajectory, one of the most impactful for development is that related to maltreatment. Caspi and Moffitt (2018) point out that such experiences generally tend to share non-specific consequences and developments. In that sense, child maltreatment is associated with an increased risk for most forms of psychopathology and higher p-factor scores (Weissman et al., 2019).

de Haan et al. (2013), who studied psychotherapy dropout in mental health services for children and adolescents, highlighted the need to establish profiles of the group of patients at higher risk of dropping out. Based on these risk profiles, strategies could be formulated to increase engagement from the very beginning of psychotherapy. Findings like those lead us to question what factors might make a person's p score higher or lower, and what can a person's p score tell us about what to expect from their engagement to therapy.

Therefore, the aims of this study were: (i) to examine whether a latent factor, corresponding to the general psychopathology factor, or p factor, would be able to explain the variance between the symptoms presented by children and adolescents who started psychotherapy in a community-based clinic; (ii) to identify family-related and children trauma/maltreatment variables associated with higher initial p factor scores; and (iii) to assess whether there was an association between initial p factor scores and psychotherapy ending (completing therapy, dropping out or non-adhering). Corresponding to the aims, three hypotheses were tested: (i) it would be possible to identify a general factor of psychopathology in children and adolescents who started psychotherapy in a community-based clinic; (ii) children and adolescents who lived in families with little adaptability and cohesion and who experienced some form of maltreatment would

present higher initial p factor scores; and (iii) children and adolescents who presented with higher initial p factor scores would be more likely to not adhere and to drop out from psychotherapy.

## Method

### Participants and Setting

Data were collected from 1976 participants aged between 6 and 17 years ( $M = 11.23$ ,  $SD = 3.44$ ). These youths and their families sought psychotherapy at a community-based clinic attached to a psychoanalytic training institute. Patients who were referred for psychotherapy were assisted by psychotherapists in training at the institution, and by members of the clinical staff. The psychoanalytic psychotherapy training in this institution lasts three years, and therapists are supervised by the institute's clinical staff members. The psychotherapies carried out at the institution are based on the psychodynamic approach and are open-ended. The clinic serves patients of all age groups.

Data were held in a database kept by the institution's Research Department. We extracted data from patients who came to the clinic between 2015 and 2022. The inclusion criteria were: (i) being aged between 6 and 17 years old at assessment, (ii) having answered the instruments for initial assessment, (iii) having attended at least two sessions after being referred to psychotherapy, and (iv) having provided informed consent to the Research Department. The database for children and adolescents in this period included 3342 cases. 915 cases were excluded as they did not meet the inclusion criteria. This study was approved by the Research Ethics Committee of the first author university (CAAE: 40230920.0.0000.5344).

### Instruments

*Sociodemographic form:* a sociodemographic form was filled out by parents at the initial assessment. It covered the child's gender, educational level, who they live with, family income, and reason for seeking treatment, among other information.

*Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001):* the CBCL was used to assess symptoms at the initial assessment with the service(s). It is for use with individuals aged 6–18 and comprises 118 items that assess a range of constructs including anxiety/depression, withdrawal, somatic complaints, social problems, thinking problems, attention problems, rule-breaking behavior, and aggressive behavior. The last two constructs are considered to make

up an externalizing problems dimension, while the first three (anxiety/depression, withdrawal, and somatic complaints) are considered an internalizing problems dimension. All items are rated on a 3-point scale (0 = not true; 1 = somewhat/sometimes true; 2 = very true/often), and answered by the participants' mother ( $n = 1568$ , 79.5%), father ( $n = 96$ , 4.9%), or other guardian such as grandparents, older siblings, and shelter caregivers ( $n = 312$ , 15.7%). The CBCL has been validated in several studies across the world, including in Brazil (Bordin et al., 2013). The internal consistency of the eight syndromes examined in this sample was .86.

*Family Adaptability and Cohesion Evaluation Scales (FACES III; Olson, 1986):* the FACES were used to assess two dimensions of family functioning: cohesion (emotional closeness between family members) and adaptability (degree of flexibility that the family manifests to change rules and roles). It is self-administered, comprises 20 items, and participants respond on a Likert scale of 1–5 points. The cohesion subscale provides a family rating as “disconnected,” “separate,” “connected” or “agglutinated,” while the adaptability subscale provides a family rating as “rigid,” “structured,” “flexible” or “chaotic.” Based on the two subscales and on the various possible combinations of their results, the instrument provides an estimate of risk for the development of psychiatric illnesses, which can be low, moderate, or high. It was answered by the main guardian of the participants. The internal consistency reliability of the scale reported by the author was .68. He also reported very good evidence for face validity, content validity, and discrimination between groups.

*Clinical records and treatment ending form:* clinical records filled out by therapists were consulted, and we collected information about the identification of traumatic experiences in the child or adolescent's life. In addition to that, by the end of each treatment, clinicians completed a treatment ending form. In this document, they would rate the treatment as either “completed” therapy (when the goals set at the beginning of psychotherapy by the patient, their parents, and the therapist had been achieved), “dropout” (when psychotherapy was interrupted before reaching the objectives), or “non-adherence” (when the patient failed to show up during the initial sessions).

### Data Analysis

After testing the psychometric properties of the instruments, descriptive analyses of the variables of interest were carried out. Confirmatory Factor Analysis (CFA) was conducted to test three models: (i) a one-factor model; (ii) a second-order model, and

Table I. Participants' sociodemographic and clinical characteristics.

|  | <i>N</i> | %         |              |          |      |              |          |      |
|--|----------|-----------|--------------|----------|------|--------------|----------|------|
| Gender   |          |           |              |          |      |              |          |      |
| Female   | 793      | 40.1      |              |          |      |              |          |      |
| Male   | 1183     | 59.5      |              |          |      |              |          |      |
| Educational Level  |          |           |              |          |      |              |          |      |
| Elementary School  | 1514     | 76.6      |              |          |      |              |          |      |
| High School  | 378      | 19.2      |              |          |      |              |          |      |
| With whom the youths live                                      |          |           |              |          |      |              |          |      |
| Both parents   | 766      | 38.8      |              |          |      |              |          |      |
| Only with mother   | 567      | 28.7      |              |          |      |              |          |      |
| Only with father   | 57       | 2.9       |              |          |      |              |          |      |
| Mother and stepfather  | 235      | 11.9      |              |          |      |              |          |      |
| Father and stepmother  | 39       | 2.0       |              |          |      |              |          |      |
| Other  | 312      | 15.7      |              |          |      |              |          |      |
| Familiar income in minimum wages                               |          |           |              |          |      |              |          |      |
| Between two and three  | 822      | 41.6      |              |          |      |              |          |      |
| Between four and six   | 392      | 19.8      |              |          |      |              |          |      |
| One minimum wage   | 322      | 16.3      |              |          |      |              |          |      |
| More than seven  | 229      | 11.6      |              |          |      |              |          |      |
| Did not report   | 211      | 10.7      |              |          |      |              |          |      |
| Reason for seeking psychotherapy reported by parents           |          |           |              |          |      |              |          |      |
| Anxiety, depression, withdrawal                                | 694      | 35.1      |              |          |      |              |          |      |
| Learning problems  | 368      | 18.6      |              |          |      |              |          |      |
| Oppositional and/or aggressive behavior                        | 328      | 16.6      |              |          |      |              |          |      |
| Attention problems   | 309      | 15.6      |              |          |      |              |          |      |
| Relationship problems  | 118      | 6         |              |          |      |              |          |      |
| Others   | 159      | 8.05      |              |          |      |              |          |      |
| Mean T scores for CBCL syndromes <sup>a</sup>                  |          |           |              |          |      |              |          |      |
| CBCL syndrome  | Mean     | <i>SD</i> | <i>N</i>     | %        |      |              |          |      |
| Anxious/depressed  | 64.68    | 9.82      | 1016         | 51.4     |      |              |          |      |
| Withdrawn/depressed  | 64.88    | 10.63     | 984          | 49.8     |      |              |          |      |
| Somatic complaints   | 61.09    | 9.20      | 612          | 30.9     |      |              |          |      |
| Social problems  | 63.05    | 9.09      | 834          | 42.2     |      |              |          |      |
| Thought problems   | 61.73    | 9.39      | 736          | 37.3     |      |              |          |      |
| Attention problems   | 64.20    | 10.12     | 893          | 45.2     |      |              |          |      |
| Rule-breaking behavior   | 60.14    | 8.63      | 590          | 29.9     |      |              |          |      |
| Aggressive behavior  | 63.69    | 11.41     | 852          | 43.1     |      |              |          |      |
| Dimensions of families' cohesion and adaptability <sup>b</sup> |          |           |              |          |      |              |          |      |
| Cohesion   | <i>N</i> | %         | Adaptability | <i>N</i> | %    | Family risk  | <i>N</i> | %    |
| Disconnected   | 696      | 35.2      | Rigid        | 332      | 16.8 | Low          | 799      | 40.4 |
| Separated  | 578      | 29.3      | Structured   | 840      | 42.5 | Moderate     | 735      | 37.2 |
| Connected  | 413      | 20.9      | Flexible     | 515      | 26.1 | High         | 233      | 11.8 |
| Agglutinated   | 86       | 4.4       | Chaotic      | 91       | 4.6  | Not included | 209      | 10.5 |
| Not included   | 203      | 10.3      | Not included | 198      | 10   |              |          |      |

<sup>a</sup>The CBCL Cronbach's Alpha was .86 in this sample.

<sup>b</sup>The FACES Cronbach's Alpha was .45 in this sample.

(iii) a bi-factor, which has been found to better explain the psychopathological structure in different samples in the literature. Model fit was assessed using recommended statistics including the comparative fit index (CFI), the Tucker Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR; Martel et al., 2017; McElroy et al., 2018; Murray et al., 2016; Waldman et al., 2016). In line with recommended thresholds, CFI

and TLI values of >.95 indicated a good model fit. RMSEA values below <.08 were taken to indicate adequate fit, with <.05 indicative of very good fit and SRMR values <.05 also indicating very good fit.

Like in the study developed by Caspi et al. (2014), we used diagnoses-level scale scores to define factors in the models, rather than symptom-level scores (i.e., items). Thereby the models tested in the CFA were based on previous analyses carried out with children and adolescents from the general community and



from clinical samples (Achenbach, 1991a, 1991b; Achenbach & Rescorla, 2001; Ivanova, Achenbach, Dumenci, et al., 2007; Ivanova, Achenbach, Rescorla, et al., 2007). These studies showed support for eight correlated factors, called *syndromes*. The syndromes are anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior.

Second-order factor analyses of the syndromes produced two correlated high-order factors, with some syndromes (called *mixed syndromes*) having loadings on both the higher-order factors (Achenbach & Rescorla, 2001). The syndromes for anxious/depressed, withdrawn/depressed, and somatic complaints loaded together on a factor called “Internalizing,” whereas the syndromes for rule-breaking behavior and aggressive behavior loaded together on another factor called “Externalizing.” The mixed syndromes that loaded on both these factors were attention problems, thought problems, and social problems. It was found a high correlation between the second-order internalizing and externalizing factors.

According to Gomez and Vance (2014), this raises the possibility of high degrees of shared variance among the eight syndromes. So the authors propose three possible ways to model the shared variance, which were explored in the present study: (i) all eight syndromes could load on a single overall or general factor; (ii) related to the second-order model and reflecting a higher-order factor model, the internalizing/mixed factor (comprising the internalizing and mixed syndromes) and the externalizing/mixed factor (comprising the externalizing and mixed syndromes) could load on a higher-order general factor; and (iii) reflecting a bifactor model, there could be three orthogonal factors: a general factor on which all syndromes load and specific (unique) factors (representing variance not accounted for by the general factor) for the syndromes in the internalizing/mixed and externalizing/mixed factors. CFAs were estimated in Mplus 8.8 (Muthén & Muthén, 2017), and a robust maximum likelihood parameter (MLR) was adopted.

After estimating the *p* factor, linear regression analyses were used to examine the association between sociodemographic variables, family characteristics, and history of maltreatment and sexual abuse with *p* factor scores (backward method). Besides the patients’ age and gender, we also included other sociodemographic variables considered in this analysis were based on the literature related to risk factors for children’s mental health (Davis et al., 2010; Essex et al., 2006; Merikangas et al., 2009; Ramires et al., 2009): the mother’s educational level, the father’s educational level, household income, and

with whom the child or adolescent lives. Family characteristics variables were related to cohesion (emotional closeness between family members) and adaptability (degree of flexibility that the family manifests to change rules and roles). Considering that these variables referred to different constructs and that some were coded as dummy variables, we decided to run three tests, analyzing the sociodemographic variables, the family functioning, and maltreatment experiences, as separate model blocks. Given the vast number of variables included in our dataset and the exploratory nature of this analyses, we ran the regression analyses through the backward method. This specific method was used to identify the variables that were significant to the model and exclude the ones that did not contribute to it, leading to a more succinct and more interpretable solution.

Logistic regression was also used to examine the association between *p* factor score and psychotherapy ending, considering the three types of endings: completed therapy, dropout, or non-adherence. SPSS v29 was used to estimate these models.

## Results

### Clinical, Family, and Psychotherapy Characteristics

These participants were referred by the school or health professionals. Nearly 10% (8.6%) sought psychotherapy on their own. Table I summarizes their sociodemographic and clinical characteristics.

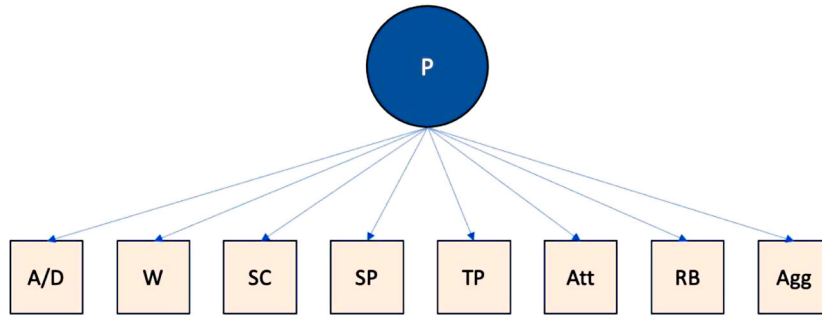
Therapists identified maltreatment in 322 cases (16.3%). They also found a history of sexual abuse in 139 children and adolescents (7.0%).

On average, patients were in psychotherapy for 3.7 months ( $SD = 6.04$ ). Most of the patients remained in psychotherapy between 3 and 6 months ( $n = 490$ , 24.8%), while 408 (20.6%) only attended the initial sessions. 261 patients remained in psychotherapy for more than 7 months (13.2%), lasting for more than a year in 128 cases (6.5%). For 271 cases (13.7%) the duration and type of ending were not found in the psychological records. According to the therapists’ registers, the psychotherapy endings were completed therapy for 425 patients (21.5%), dropout for 623 patients (31.5%), and non-adherence for 657 patients (33.2%).

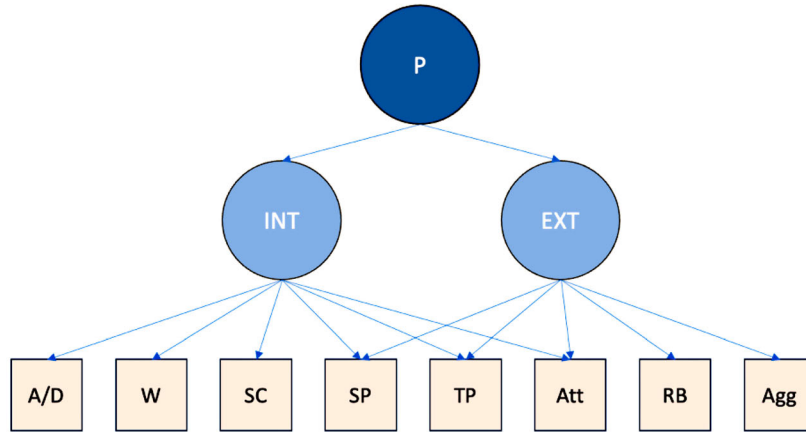
### The Structure of Psychopathology

Based on CFAs, three models were tested, as we can see in Figure 1: (i) a one-factor model; (ii) a second-order model, and (iii) a bi-factor model. In the first step, it was examined whether all eight CBCL

One-factor model:



Second-order model:



Bi-factor model:

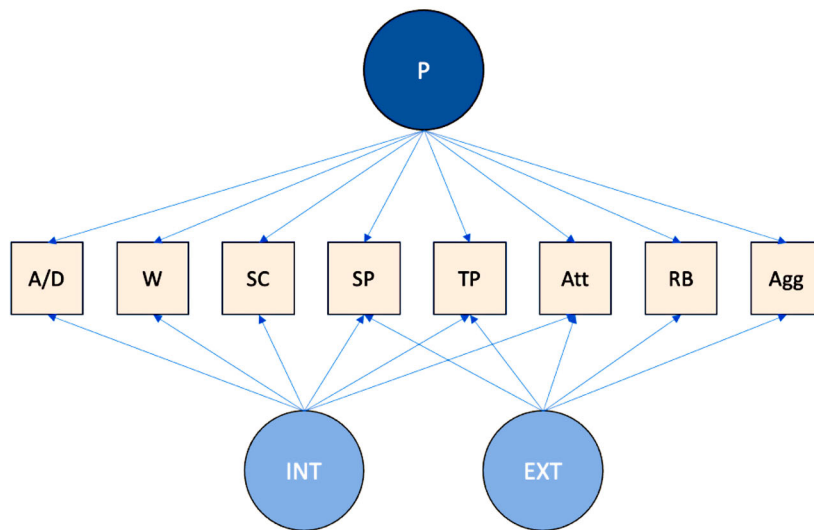


Figure 1 One-factor, second-order, and bi-factor models of the structure of psychopathology. Note. P=P-factor; A/D = anxious/depressed; W = withdrawn/depressed; SC = somatic complaints; SP = social problems; TP = thought problems; Att = attention problems; RB = rule-breaking behavior; Agg = aggressive behavior; INT = internalizing factor; EXT = externalizing factor.

syndromes could load on a single overall or unidimensional factor. Model fit statistics were CFI = .814, TLI = .740, RMSEA = .183 (90% confidence interval [90% CI] = .175 to .192), and

SRMR = .073, indicating that this model did not fit the data well.

In a second step, a second-order model reflecting a higher-order factor was tested, considering the

Table II. Regression coefficients for sociodemographic, family functioning, and traumatic experiences variables.

| Variable                       | B      | SD   | $\beta$ | p     | 95% CI |       |
|--------------------------------|--------|------|---------|-------|--------|-------|
|                                |        |      |         |       | Lower  | Upper |
| <b>Sociodemographic</b>        |        |      |         |       |        |       |
| Father's educational level     | -.250  | .057 | -.123   | <.001 | -.363  | -.138 |
| Youth living with both parents | -1.166 | .275 | -.120   | <.001 | -1.704 | -.627 |
| <b>Family functioning</b>      |        |      |         |       |        |       |
| Disconnected                   | 1.033  | .242 | .100    | <.001 | .557   | 1.508 |
| Rigid                          | -.939  | .334 | -.071   | .005  | -1.594 | -.284 |
| Structured                     | -.903  | .248 | -.090   | <.001 | -1.389 | -.417 |
| <b>Traumatic experiences</b>   |        |      |         |       |        |       |
| Maltreatment                   | 1.226  | .327 | .093    | <.001 | .584   | 1.869 |
| Sexual abuse                   | .968   | .472 | .051    | .040  | .042   | 1.895 |

internalizing/mixed factor (comprising the internalizing and mixed syndromes) and the externalizing/mixed factor (comprising the externalizing and mixed syndromes). In this case, model fit statistics were improved but the RMSEA was still higher than the threshold indicating good fit (CFI = .955, TLI = .921, RMSEA = .089 (90% CI = .079 to .098), and SRMR = .027).

We then tested the bifactor model, exploring the hypothesis of a general factor on which all syndromes load and specific factors (representing variance not accounted for by the general factor) for the syndromes in the internalizing/mixed and externalizing/mixed factors. Model fit statistics were CFI = .984, TLI = .950, RMSEA = .071 (90% CI = .058 to .084), and SRMR = .018, indicating an adequate model fit. The average of factor loadings on the p factor was .453, on the Internalizing factor was .519, and on the Externalizing factor was .503. They were all significant ( $p < .001$ ) except for Attention problems in the p factor ( $p = .011$ ).

**Family Variables, Traumatic Experiences, and p Factor**

Multiple linear regression (MLR) results showed that there is a significant influence of the father's educational level ( $\beta = -.123, p < .001$  [95% CI = -.363

to -.138]) and the fact that the child or adolescent lives with the mother and the father on the p factor ( $\beta = -.120, p < .001$  [95% CI = -1.704 to -.627]). Related to family functioning (cohesion and adaptability) the results were significant when the family was rated as disconnected ( $\beta = .100, p < .001$  [95% CI = .557-1.508]), rigid ( $\beta = -.071, p = .005$  [95% CI = -1.594 to -.284]), and structured ( $\beta = -.090, p < .001$  [95% CI = -1.389 to -.417]). That indicates that when families were more disconnected and less rigid and structured, the children and adolescents' p factor scores were more likely to be higher.

The linear regression analyses also showed that suffering maltreatment ( $\beta = .093, p < .001$  [95% CI = .584-1.869]) and sexual abuse ( $\beta = .051, p = .040$  [95% CI = .042-1.895]) were also predictive of p factor scores. Considering these adverse experiences, children and adolescents whose therapists identified such histories presented higher p factor scores. Table II presents the full information regarding the linear regression analyses.

**P Factor, Internalizing Factor, Externalizing Factor, and Psychotherapies Ending**

Multinomial Logistic Regression was adopted to examine whether the p factor and the Internalizing and Externalizing factors would be associated with

Table III. Predictive variables of psychotherapy ending.

| Psychotherapy ending <sup>a</sup> |  | Wald   | df | p     | Exp(B) | 95% CI for Exp(B) |       |
|-----------------------------------|--|--------|----|-------|--------|-------------------|-------|
|                                   |  |        |    |       |        | Lower             | Upper |
| Non-adherence                     | Orthogonal internalizing factor scores | .080   | 1  | .777  | .997   | .975              | 1.019 |
|                                   | Orthogonal externalizing factor scores | 4.292  | 1  | .038  | .967   | .936              | .998  |
|                                   | Orthogonal p-factor scores             | 19.163 | 1  | <.001 | 1.061  | 1.033             | 1.090 |
| Dropout                           | Orthogonal internalizing factor scores | 4.485  | 1  | .034  | .975   | .953              | .998  |
|                                   | Orthogonal externalizing factor scores | 14.165 | 1  | <.001 | .938   | .908              | .970  |
|                                   | Orthogonal p-factor scores             | 33.884 | 1  | <.001 | 1.084  | 1.055             | 1.114 |

<sup>a</sup>The reference category is completed therapy.



completed therapy, dropout, or non-adherence to psychotherapy. [Table III](#) summarizes the results.

Higher p factor scores increased the likelihood of patients not adhering to psychotherapy, compared to patients who had completed therapy. On the other hand, lower externalizing factor scores reduced the chance of the patient not adhering to psychotherapy, compared to those who had completed therapy.

Related to dropout, higher p factor scores increased the chance of the patient abandoning psychotherapy, compared to patients who were completers, while lower externalizing factor scores reduced the chance of the patient abandoning the psychotherapy, compared to the same group. Lower internalizing factor scores also decreased the chance of the patient dropping out of psychotherapy compared to the patients who were completers, although the odds ratios were also small.

### Discussion

The present study aimed to examine whether an underlying general psychopathology factor (p factor) could be identified in children and adolescents attending psychodynamic psychotherapy and whether this general psychopathology factor levels were associated with family functioning and engagement with psychotherapy. Considering our aims, we formulated three hypotheses, which were all confirmed. Below, we discuss each one of them.

#### The Structure of Psychopathology

In line with previous studies and confirming our first hypothesis, the bi-factor model provided the best fit for the data, suggesting a common underlying factor to explain the variance in CBCL syndromes presented by children and adolescents. Two specific factors were identified: Internalizing Problems, encompassing the syndromes for anxious/depressed, withdrawn/depressed, somatic complaints, attention problems, thought problems, and social problems on one side, and Externalizing Problems encompassing the syndromes for rule-breaking behavior, aggressive behavior, attention problems, thought problems, and social problems. These two factors existed as distinct parts of the model, explaining propensities to specific forms of psychopathology, not accounted for the general factor.

The mixed syndromes attention problems, thought problems, and social problems loaded on both internalizing and externalizing factors, like in a previous validation study based on second-order factor analysis (Achenbach & Rescorla, 2001). The

high correlation between the second-order internalizing and externalizing factors raised the question of the shared variance among the eight CBCL syndromes, and the hypothesis of a single overall or general factor. Additionally, it was hypothesized that the internalizing/mixed factor and the externalizing/mixed factor could load on a higher-order general factor and, reflecting a bifactor model there could be three orthogonal factors: a general factor on which all syndromes load and specific factors representing variance not accounted for by the general factor (Gomez & Vance, 2014). This hypothesis was confirmed in the present study.

One possible clinical explanation for attention problems, thought problems, and social problems loading on both internalizing and externalizing factors is that symptoms like those can be present both in disorders related to depression, withdrawal, and conduct problems such as aggressive and rule-breaking behavior, during childhood. It is also noteworthy that they did not constitute a specific factor in the present and previous studies (e.g., Patalay et al., 2015), especially thought problems that have been related to a specific factor indicating disorders of a psychotic nature in studies based on bi-factor models during adolescence (Carragher et al., 2016) and adulthood (Caspi et al., 2014).

Caspi et al. (2014) suggested that as a dimension of severity, the p factor would have thought disorder symptoms at its pinnacle. Hence, depending on how strong the general psychopathology vulnerability of an individual is, if their disorder grows severe enough they could experience psychotic thought processes, regardless of the present diagnosis, indicating that unwanted irrational thoughts are not just for formal psychoses. Caspi and colleagues (2014) note that the clinical literature is replete with examples of disordered thought processes in the context of affective disorders, anxiety disorders, somatoform disorders, dissociative disorders, personality disorders, eating disorders, and substance use disorders.

An alternative hypothesis to explain the absence of a factor focused on thought problems in childhood could be that diagnostic specificity increases with age. For this reason, broader classifications like internalizing and externalizing dimensions have been long established and successfully employed in child psychopathology research, as highlighted by Patalay and colleagues (2015). This would suggest that the tendency to express psychopathology would increase with age. We identified a general psychopathology factor from the age of 6–17 in this study, but once it is a cross-sectional study, is not possible to answer the question about whether and how it would change with time.

This issue has been explored by other researchers. McElroy et al. (2018) and Murray et al. (2016)

investigated the developmental stability of the p factor from early childhood to adolescence. McElroy et al. (2018) found evidence for both homotypic and heterotypic continuity, from ages 2–14, with most of the heterotypic continuity involving the p-factor. Murray et al. (2016) found that the p factor levels remained constant from ages 7–15, suggesting that neither the dynamic mutualism hypothesis nor the p-differentiation does not govern the interplay between psychopathological symptoms during this phase of development.

In short, the bi-factor model highlighted that the symptoms identified in the present sample shared a common general psychopathology trait and independent sources of common variation, represented by a tendency to present with internalizing or externalizing symptoms. The p factor mean score represents the general tendency to experience psychopathology by children and adolescents in this sample, while the mean scores on internalizing/mixed and externalizing/mixed factors represent the specific internalizing and externalizing tendencies that were not captured by the general factor. However, as discussed below, when examining the association of the general factor and specific factors with external variables, the p factor assumes a prominent role in such associations.

### **Factors Associated with p-factor, and the Association Between p Factor and Psychotherapy Ending**

**Sociodemographic variables and p factor.** In accordance with our second hypothesis, we observed that some family characteristics increased the severity of the p factor, and others decreased it. Living with both parents and having a father with a higher education level were associated with lower p factor scores in our sample.

The literature largely supports the findings related to living with both parents and a higher father's educational level (Davis et al., 2010; Essex et al., 2006; Merikangas et al., 2009; Ramires et al., 2009). In addition, Essex et al. (2006) explored the risk factors for the emergence of children's mental health problems, and they found that those for internalizing and externalizing problems may be much the same. We can hypothesize that this finding is related to a possible underlying factor, like the p factor. Family socioeconomic status was found to be a risk factor in their study, defining different pathways to symptom severity in low/middle-income families and high-income families, in association with maternal distress, parental history of depression, and family psychopathology.

In their Australian population study, Davis et al. (2010) identified that parent-reported child mental health problems, in 4–5-year-old children, were predicted by socioeconomic status, with odds ratios small to moderate (1.2–2.4), and parent education. It is possible that the participants in our sample who were living with both parents and had a father with a higher educational level could enjoy a better socioeconomic status, and a more supportive environment, which favored their mental health conditions.

We can observe that most children and adolescents who sought psychotherapy in the sample lived in families whose household income did not exceed three minimum wages (57.9%). Regarding their family structures, just over a third lived with both parents (38.8%). Unfavorable social and economic conditions are one of the risk factors for mental disorders (Polanczyk et al., 2015) and perhaps this is one of the aspects related to the percentage of youths classified in the clinical range, according to the symptoms presented at the beginning of psychotherapy (73.1%). It is not about pathologizing the diversity of family configurations existing in societies, nor poverty or adverse socioeconomic conditions, but just highlighting conditions that, added to other factors, may imply vulnerabilities and challenges to be faced by these families. In addition, this data can also inform more targeted treatment planning.

**Family functioning and p factor.** Considering the parent or guardians-rated family functioning, it was observed that only 20% presented themselves as emotionally connected, and 26% with the flexibility to adapt to different situations of family life. Hence, 37.2% of families were classified with a moderate risk for psychiatric disorders, and 11.8% with a high risk, in this case involving combinations of characteristics such as disconnectedness, agglutination, rigidity, and chaotic functioning.

P factor levels were also predicted by lower cohesion and by the difficulty of family adaptation in our study. The lack of family connection contributed to an increase in the p factor severity, while in more rigid and structured families this severity decreased, although with small odds ratios. Associations between family cohesion and adaptability and quality of life (Rosalini et al., 2019), stressful life events and social support (Macedo et al., 2013), psychiatric symptoms and behavioral problems in children and adolescents (Moreno, 2016), and violence against women and drug abuse (Rabello & Caldas Júnior, 2007), have been explored in studies based on FACES III.

Rosalini et al. (2019) found that moderate and high levels of cohesion can positively impact a

better quality of life for beneficiaries of a social program. On the other hand, Moreno (2016), unlike the present study, did not find any association between family adaptability and cohesion and the level of psychiatric symptoms in children and adolescents. One possible explanation for this finding, highlighted by the author, was their limited sample size ( $n = 61$ ). However, in this study there was an increased frequency of abnormal scores in the symptoms presented by children and adolescents living in disengaged families, as assessed by the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997).

Martel et al. (2017) also analyzed the external validity of the p factor through familial risk in a community sample. They assessed mothers' and fathers' p factor levels and found they were significantly associated with both p factor and specific factors in their children. Therefore, they highlighted the genetic and environmental factors as influences on such a co-occurrence between mental disorders.

Interestingly, experiencing a more structured, or rigid family functioning was associated with lower p factor levels. An explanation for rigid functioning decreasing the risk for mental disorders could be that in these cases we would find clearer rules and a pattern of limits that can protect and offer some safety to the youths, unlike situations when there is more disconnectedness, detachment, or affective abandonment.

**Traumatic experiences and p factor.** In 20.3% of the sample, therapists reported maltreatment or sexual abuse. In these categories, it was considered exposure to traumatic violence or abuse within the family including physical, sexual, and emotional abuse, and chronic exposure to domestic violence. Childhood maltreatment is associated with increased risk for most forms of psychopathology (Weissman et al., 2019). Several studies have identified that child abuse is a risk factor present in the history of patients diagnosed with mood disorders, anxiety disorders, behavioral disorders, substance abuse, schizophrenia, and psychoses, among others (Green et al., 2010; Scott et al., 2010; Varese et al., 2012). Child maltreatment has also been found to be predictive of comorbid, persistent, and treatment-resistant disorders (McLaughlin et al., 2010; Nanni et al., 2012; Spatz Widom et al., 2007). Accordingly, when thinking of a general factor of psychopathology hypothesis, it makes sense to explore the association of such traumatic experiences and the severity of the p factor once it is identified.

Maltreatment and sexual abuse predicted higher p factor scores in this study. This result is similar to previous studies that associated maltreatment and

childhood disorders (Salum et al., 2016; Weissman et al., 2019), existing some evidence that childhood maltreatment influences general factors common to multiple different types of disorders rather than those that give rise to specific disorders (Conway et al., 2018; Keyes et al., 2012).

In the study developed by Weissman et al. (2019), greater engagement in rumination and heightened emotional reactivity emerged as key mechanisms linking maltreatment with general psychopathology. Such mechanisms had already been related to some substantive interpretations of the p factor. According to the attempts to understand the meaning of the p factor in the literature, we find that it has been thought to reflect (a) a dispositional negative emotionality (also termed neuroticism), (b) an impulsive responsivity to emotions, (c) low cognitive functioning, and (d) thought dysfunction (Caspi & Moffitt, 2018; Smith et al., 2020). It is noteworthy to observe that Weissman et al. (2019) found rumination and emotional reactivity to be crucial in the relationship between maltreatment and general psychopathology and that in our study thought problems loaded on both the general p factor and the residuals internalizing and externalizing factors.

Smith and colleagues (2020) draw attention to the fact that it remains unclear how the four interpretations of p described above explain the variance for all the variables loading onto p. The p factor overlaps with different dispositions and impairments (Caspi & Moffitt, 2018; Lahey et al., 2017). Hence, an alternative interpretation of p proposed by Smith et al. would be that it is just an index of overall impairment that is nonspecific and secondary to the variables that load on such a general factor. The p factor would represent a continuum from low impairment to high impairment, capable of informing the duration and intensity of mental health treatments that are needed by someone.

We observed in our sample sociodemographic, family functioning, and maltreatment variables that were associated with higher or lower scores of p. Certainly they are not the only ones associated with this general factor of psychopathology, but they were the ones we were able to examine in this study and they contributed to confirm the external validity of p. In our view, they endorse the hypothesis of p as an index of overall impairment whose severity may depend, in addition to these factors, on several others such as genetic and environmental variables, etc.

**The p factor and psychotherapy ending.** Addressing our third aim, our attention was also drawn to the average duration of psychotherapies

(3.7 months,  $SD = 6.04$ ). Considering that the main modality offered by the clinic is open-ended psychodynamic psychotherapy, in practice, it seems that the modality that has been demanded by children, adolescents, and their parents is brief psychoanalytic psychotherapy. It is also noteworthy that, according to the therapists' point of view, only 21.5% of the patients were completers, with 64.7% either interrupting or not even adhering to psychotherapy, that is, they gave up during the initial sessions before a contract could have been established.

Alternative hypotheses to explain this data could be a lack of agreement between therapists and patients regarding the aims of psychotherapy, with patients satisfied with the results achieved in the first months (see O'Keeffe et al., 2019). Also, a more vulnerable familiar and social context in many cases of the sample could limit the support to maintain the psychotherapy.

Paradoxically, the p factor severity would also be a risk to the continuity of the therapeutic process, leading to an early interruption, as we observed. Confirming our third hypothesis, we found that the p factor and the internalizing and externalizing factors had affected engagement to therapy, with the p factor showing greater effects, compared to the specific factors. We consider it a paradox because precisely the patients who most need psychotherapy are perhaps the ones who least adhere to it.

In the case of non-adherence, compared to patients who were completers, the p factor and the specific externalizing factor contributed to this outcome. In the case of dropout, compared to the same group, the three factors were significant for this outcome, with the p factor presenting the greatest contribution, followed by the specific externalizing factor and then by the specific internalizing factor. This leads us to think that, at least in relation to this sample, patients with a more severe degree of psychopathology and those who tend to present externalizing problems will have more difficulty in establishing a therapeutic alliance, in adhering to and remaining in psychotherapy. Although the effect sizes were small, they were significant. It means that other factors are involved in the continuity or not of a psychotherapeutic process, but the patient's psychopathological severity may be one of them.

Previous studies on dropouts reported a diversity of factors as predictors. de Haan et al. (2013) developed a meta-analysis study and found dropout rates between 28% and 75% in psychotherapies for children and adolescents. Considering child pre-treatment factors that predicted dropout, the ones that stood out were having higher levels of externalizing

or internalizing problems and having more contact with peers with deviant behavior. Related to parent pre-treatment factors, having a younger mother or living in a single-parent home without the presence of the father were predictors of dropout with larger effect sizes. In addition, parenting characterized by more criticism, expressions of negative emotions, and hostility towards the child were also significant risk factors for dropout.

Also, there are different conceptualizations for "dropout". In their meta-analysis, de Haan et al. (2013) grouped the definitions into two main groups: in the first group the judgment of the therapist was the decisive factor in the dropout definition, while in the second group, dropout was defined as termination before a certain number of sessions, or before all the planned sessions were completed, or when the last scheduled session was not attended.

In our study, the therapist's judgment was the adopted criterion, but we recognize that this is a unique perspective and that it would be important to look at the end of psychotherapies from the children and adolescents' point of view, as well as their parents, in addition to eventually using other measures. Perhaps what was judged as an interruption for the therapist, was the end of a successful process for the patient and the caregivers according to their expectations at that given time (see O'Keeffe et al., 2019). In addition, the definition of non-adherence could also be problematized. It would not necessarily mean the failure of psychotherapy to begin, but it could be related to many other factors, like unmatched expectations, parental resistance, and so on.

Other studies have also indicated that antisocial and delinquent behavior was associated with higher rates of dropout (Des Essarts et al., 2022; O'Keeffe et al., 2018). This finding points to the patient's psychopathological structure and is in line with the present findings. This means that the patient's psychopathological characteristics are a factor that therapists must consider when assessing the risks and prospects for the success of psychotherapy. Nevertheless, there are certainly many other factors associated with dropouts, such as variables of the therapeutic process itself, variables of the therapist, and other variables of the patient and his environment.

### **Clinical Implications of the Present Findings**

The assessment of the patient's psychopathological characteristics is crucial for case formulation and treatment planning. Unfortunately, to date, we do not have specific instruments capable of identifying



a given patient's p score. Meanwhile, an assessment of the substantive dimensions of p described in the literature could help clinicians. Neuroticism and negative emotionality (Lahey et al., 2017), poor impulse control (Carver et al., 2017), deficits in intellectual function (Caspi et al., 2014; Castellanos-Ryan et al., 2016; Martel et al., 2017) and thought disorganization (Caspi et al., 2014) were related to greater psychopathological vulnerability. In this sense, they could be analyzed by clinicians with special attention.

Carefully assessing the child's clinical history, as well as the existence of homotypic or heterotypic symptom continuity seems to be important and helpful. Furthermore, it is essential to seek a holistic understanding of the patient, considering different types of suffering or difficulties that they experience simultaneously or throughout their development. Psychopathology is not something that should be segmented into different "boxes," and the understanding to be formulated about the patient must be integral.

### Limitations

Although we had the opportunity to analyze data from almost two thousand children and adolescents, our analysis of the psychopathology structure was based on only one instrument, according to the parents' report. We used a diagnoses-level scale to define factor scores in the models, rather than specific items. In addition, although the instrument we used to assess characteristics of family functioning has shown good psychometric properties in the literature, in our sample its internal consistency was low, which indicates that its results should be taken with caution and future studies should consider other measures.

Our sample was drawn from only one community-based clinic, and it is important that future studies include a greater diversity of patients, measures, and informants. Our assessment of the psychotherapy ending, considering three possibilities (i.e., completed therapy, dropout, or non-adherence), was based only on the therapists' view. It was not possible to access the view of the children and adolescents who were in treatment, nor their parents. Additionally, experiences of maltreatment and/or sexual abuse were identified based on the therapists' reports, available in the patient's clinical records. It was not possible to assess such experiences based on validated instruments, and it is important that this limitation is addressed in future studies.

Despite these limitations, this study contributes to studies on the psychopathological structure of children and adolescents, identifying a general factor of

psychopathology in a context where this factor had not yet been studied, except for one previous study. The relationship between the p factor and the psychotherapy ending, which has also been less explored so far, is an important path for research in the area. It has already been proposed as a more parsimonious indicator for understanding patient change in psychotherapy by Fiorini et al. (2023) and this is a promising line of research.

The general psychopathology concept places emphasis on individual factors, and we should consider the interactions of these aspects with broader factors, including the family, community, cultural, and social context. It is important to identify and understand the factors that increase the severity of psychopathology in children and adolescents, and to develop strategies capable of preventing such developments.

### Conclusion

This study contributes to the field of investigations into psychopathology and psychotherapy, showing that the general factor of psychopathology presented by children and adolescents can have an impact on their psychotherapies' endings. General psychopathology severity seems to contribute to child and adolescent psychotherapy ending, increasing the risk of non-adherence and dropout. We also found that a lack of family cohesion, difficulties in family adaptability, and traumatic experiences were linked with increased p factor severity.

Understanding p as an index of overall impairment can be crucial for understanding patients' dynamics and suffering, establishing psychotherapy goals, and working with children, adolescents, and their families. Sharing and working based on such an understanding can help to strengthen the therapeutic alliance, and to establish more realistic expectations and more successful psychotherapies, reducing dropout rates.

### Funding

This study was supported by the National Council for Scientific and Technological Development, CNPq, Brazil, Process [grant number 313011/2020-6].

### Disclosure Statement


No potential conflict of interest was reported by the author(s).




## Informed Consent

All participants in this study provided informed consent for their involvement.

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