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ARTIGOS

Prevalência de problemas internalizantes e externalizantes em diferentes etapas da vida e regiões do Brasil

Prevalence of internalizing and externalizing problems in different stages of life and regions of Brazil

Prevalencia de problemas internalizantes y externalizantes en distintas etapas de la vida y regiones de Brasil

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Resumo: Problemas internalizantes (PI) e problemas externalizantes (PE) constituem domínios centrais na compreensão de psicopatologias, relacionados a diferentes formas de sofrimento psicológico e prejuízos comportamentais. Este estudo descritivo, transversal, baseado em dados quantitativos secundários, examinou a prevalência desses problemas em diferentes etapas do desenvolvimento. Foram analisados 9.009 protocolos do sistema Achenbach de Avaliação Empiricamente Baseada (CBCL/1½–5, CBCL/6–18, ABCL), de indivíduos de 1,5 a 59 anos, de três regiões do Brasil. Identificaram-se casos em níveis clínicos em todas as faixas etárias, com maior prevalência de PI. Adolescentes do sexo feminino apresentaram taxas mais elevadas de classificação clínica, enquanto mulheres adultas emergentes as menores. Os resultados reforçam a distribuição dos problemas ao longo do ciclo vital, contribuindo para estratégias de prevenção e promoção da saúde mental no Brasil.

Palavras-chave: Problemas internalizantes; Problemas externalizantes; Epidemiologia; Saúde mental; ASEBA.

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Abstract: Internalizing problems (IP) and externalizing problems (EP) are central domains in understanding psychopathology, related to different forms of psy-

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chological distress and behavioral impairments. This descriptive, cross-sectional study, based on secondary quantitative data, examined the prevalence of these problems at different stages of development. A total of 9,009 protocols from the Achenbach System of Empirically Based Assessment (CBCL/1.5–5, CBCL/6–18, ABCL) were analyzed, corresponding to individuals aged 1.5 to 59 years from three regions of Brazil. Scores falling within the clinical range were observed across all age groups, with a higher prevalence of IP. Female adolescents had higher rates of scores in the clinical range, while emerging adult women had lower rates. These findings highlight the distribution of problems across the lifespan, contributing to prevention and mental health promotion strategies in Brazil.

Keywords: Internalizing problems; Externalizing problems; Epidemiology; Mental health; ASEBA.

Resumen: Problemas internalizantes (PI) y externalizantes (PE) son conceptos importantes para la comprensión de las psicopatologías y de sufrimiento psicológico. Este estudio descriptivo, transversal, basado en datos cuantitativos secundarios, examinó la prevalencia de estos problemas en distintas etapas del desarrollo. Se analizaron 9.009 protocolos del Sistema Achenbach de Evaluación Empíricamente Basada (CBCL/1½–5, CBCL/6–18, ABCL) de individuos de 1,5 a 59 años de edad, de tres regiones de Brasil. Se identificaron problemas en todas las edades, con mayor prevalencia de PI. Adolescentes femeninas presentaron las tasas más altas de clasificación clínica, mientras que las mujeres adultas emergentes mostraron los niveles más bajos. Los resultados refuerzan la distribución de los problemas a lo largo del ciclo vital, contribuyendo a identificar matices de la salud mental en Brasil.

Palabras clave: Lista de Verificación del Comportamiento Infantil; Epidemiología; Salud Mental; Trastornos de la Conducta; Psicología Clínica.

Introduction

Mental health is influenced by a wide spectrum of emotional and behavioral problems that may cause impairments across multiple areas of development and persist throughout life, resulting in different types of disorders (Oliveira-Monteiro et al., 2022; World Health Organization, 2022b). The internalizing and externalizing problems represent broad and complementary domains that are central in the understanding of psychopathology. Internalizing problems (IP) are characterized by symptoms directed toward the self, such as anxiety, sadness, or withdrawal, while externalizing problems (EP) are expressed through behaviors directed outward, including aggression, impulsivity, or rule-breaking (Schoen et al., 2022). Both dimensions can significantly compromise emotional well-being, social functioning, and adaptation

throughout the life cycle.

According to global estimates, about one in eight individuals experience some form of mental health problem (World Health Organization, 2022a), affecting a considerable proportion of children, adolescents, and adults (Otto et al., 2021). A report published by UNICEF (2021) on the mental health of European adolescents aged 10 to 19 years indicated prevalence rates between 14% and 20%, with slightly higher rates among girls. Similarly, a meta-analysis involving international studies with children and adolescents estimated an overall prevalence of 20.1% for mental disorders, of which 8.5% were anxiety-related and 1.1% depressive (Vasileva et al., 2021).

The onset of most mental disorders occurs in the transition from late childhood to early adulthood. Studies indicate that half of lifetime mental health problems emerge between ages 11 and 15, and nearly three-quarters before age 18 (Kim-Cohen et al., 2003). Specific phobias tend to appear during childhood and adolescence, while affective, neurotic, and substance-related disorders are more common in young adulthood. Longitudinal research demonstrates the continuity of mental health problems from childhood to adulthood (Girela-Serrano et al., 2023). Thus, early identification of emotional and behavioral difficulties is essential, as late-diagnosed individuals often show early signs, reinforcing the need for epidemiological studies encompassing different developmental stages.

In Brazil, approximately 13% of children and adolescents present one or more mental disorders, with a tendency toward chronic persistence of symptoms. The most frequent conditions are anxiety and depression (30.7%), followed by conduct disorders and hyperactivity (18.3%). A review of population-based epidemiological surveys conducted between 1980 and 2009 reported prevalence rates ranging from 12% to 24.6% using screening instruments and from 7% to 12.7% with diagnostic instruments (Paula et al., 2015). The authors emphasize a strong regional concentration of studies, as most were conducted only in the states of São Paulo, Rio Grande do Sul, and

Bahia, revealing the scarcity of data from other Brazilian regions.

Evidence regarding the prevalence of mental health problems among children under seven years old remains limited, despite this group being a frequent clientele in mental health services (Vasileva et al., 2021). In a study conducted in southern Brazil, Borsa et al. (2011) found prevalence rates of IP and EP ranging from 10% to 20% in children. Among adolescents, Radez et al. (2021) reported that approximately one in seven youths meet diagnostic criteria for a mental health disorder, which is associated with academic and social impairments, increased substance use, self-injury, and suicidal behavior. In the Brazilian context, Siqueira et al. (2023) analyzed more than 800,000 cases of psychiatric and behavioral disorders in individuals aged 1 to 19 years reported in Piauí between 2018 and 2022, identifying the highest frequency among those aged 15 to 19 years (89.8%) and in males (81.3%).

In adulthood, Brazil continues to show high rates of mental disorders, particularly anxiety, mood, and substance use disorders (Andrade et al., 2000; Degenhardt et al., 2019). A recent study conducted in Ribeirão Preto (São Paulo State) with two birth cohorts, participants aged 37/38 and 22 years, found prevalence rates of 28.7% and 31%, respectively, with frequent psychiatric comorbidity. In the older cohort, the presence of mental disorders was associated with the female sex (Scarabelot, 2023).

Given the high prevalence, chronicity, and comorbidity, mental disorders represent a major public health concern. Prevention and effective intervention depend on obtaining accurate and standardized information about symptoms (Cybulski et al., 2021). In this context, evidence-based assessment provides a reliable approach to understanding population mental health (Achenbach, 2019; Cybulski et al., 2021; Kim-Cohen et al., 2003). However, population-based data on behavioral problems in Brazil remain limited and difficult to compare due to variations in instruments and sampling methods (Achenbach, 2019). Most studies are restricted to a single

region or reference center. Therefore, mapping the prevalence of IP and EP problems across different life stages and Brazilian regions is essential to broaden the understanding of mental health patterns in the country (Paula et al., 2015). Accordingly, this study aimed to examine the prevalence of IP, EP, and TP among across different developmental stages (children, adolescents, and adults) and regions of Brazil (South, Southeast, and Central-West).

Method

Design and participants

The study employed a descriptive, retrospective, and cross-sectional design using secondary quantitative data. A total of 9,009 evaluation protocols for children, adolescents, and adults were collected across various contexts, including clinical, school, work, and community settings, in the Southeast, Central-West, and South regions of Brazil, and were provided by researchers who had used Achenbach System of Empirically Based Assessment (ASEBA) instruments in their studies.

Inclusion criteria required instruments assessing Brazilian participants from any region of the country, although no protocols were received from the North or Northeast regions. Protocols were included only if they reported T-scores for IP, EP, and TP, whereas those containing only one of these scales or reporting data in other formats were excluded.

The protocols were categorized by age group as follows: early childhood, 1.5–5 years (CBCL/1½–5; $n = 1,021$); late childhood, 6–10 years (CBCL 6–18; $n = 3,924$); early adolescence, 11–14 years (CBCL 6–18; $n = 2,100$); middle adolescence, 15–17 years (CBCL 6–18; $n = 902$); emerging adulthood, 18–25 years (ABCL; $n = 329$); young adulthood, 26–35 years (ABCL; $n = 433$); and middle adulthood, 36–59 years (ABCL; $n = 300$).

Instruments

The ASEBA is a widely recognized, empirically grounded system considered a gold standard

for evaluating emotional and behavioral problems across the lifespan (Achenbach, 2023; Achenbach & Rescorla, 2014; Ivanova et al., 2019). ASEBA encompasses a range of instruments that assess a broad spectrum of behaviors through informant reports, enabling comparisons across different age groups and types of respondents (Achenbach et al., 2017). The system is based on the assumption that behavioral problems can be statistically organized into two major syndromes, internalizing and externalizing, allowing for consistent measurement across developmental stages and cultural contexts (Achenbach, 2015; Achenbach et al., 2017; Ivanova et al., 2019). ASEBA provides standardized forms containing items that describe a wide range of mental health problems for individuals aged 1.5 to over 90 years (in this study, up to 59 years). These forms can be completed by parents, teachers, caregivers, spouses, or other close informants, depending on the specific instrument.

All ASEBA instruments use a three-point Likert-type scale (0 = not true, 1 = sometimes true, 2 = often true). Responses are grouped through factor analysis, as established during the instruments' construction and validation, into syndromes and scales, and results are expressed as T-scores (Achenbach, 2019). The instruments employed in this study were:

Child Behavior Checklist 1½–5 (CBCL/1½–5):

This instrument contains 99 items regarding children's behavior, to be completed by parents or guardians based on the preceding two months. It also includes a screening for delays in language development. The Brazilian version follows standard translation and adaptation procedures, and studies of its psychometric properties indicate good reliability, sensitivity, and specificity (Pires et al., 2014; Rocha & Matta, 2018).

Child Behavior Checklist 6–18 (CBCL/6–18):

This instrument is divided into two sections: the first evaluates social competencies, and the second assesses emotional and behavioral problems through 118 items. Results are organized into eight syndrome groups and three scales, and the form is completed by parents or guardians.

Validation studies for the Brazilian population have been conducted by Rocha et al. (2011) and Emerich et al. (2012).

Adult Behavior Checklist (ABCL): Designed for adults aged 18 to 59 years, this instrument mirrors the structure of the CBCL and is completed by parents, spouses, partners, or other individuals familiar with the target adult. Brazilian validation studies have been conducted by Gonçalves et al. (2011) and Rocha et al. (2010).

Procedures

Data Collection Procedures: Throughout 2021, Brazilian researchers who had used ASEBA instruments were identified through an active search of publications, including articles, dissertations, theses, and monographs, and were invited via email to share their data with the authors of this study, using an Excel spreadsheet. For the present study, databases from the CBCL/1½–5, CBCL 6–18, and ABCL instruments were integrated. The data originated from different regions of Brazil (South, Southeast, and Central-West) and were collected between 2004 and 2020, including information on participants' sex and age.

Ethical Procedures: All data were received anonymously and assigned new identification codes. Data were centralized with no possibility of tracing them back to the original database or researcher. Consequently, ethical standards for research with human participants were strictly observed, and the study received approval from the Research Ethics Committee (CEP 3.695.195; CAAE: 23983119.5.0000.5505).

Data Analysis Procedures: Data were entered into the appropriate software (ADM or ASEBA software), which calculates scores considering age, sex, and place of assessment based on multicultural norms (Brazil or Group 3). Results were categorized according to T-score ranges as non-clinical, borderline, or clinical. For all ranges, T-scores from the IP, EP, and TP scales of the three instruments were analyzed.

For statistical analysis, the Equality of Two Proportions test and Spearman's correlation were applied to quantitative variables, while the chi-

-square test was used for qualitative variables. The Equality of Two Proportions test evaluates whether the proportion of responses between two variables or levels is statistically significant. Spearman's correlation measures the degree of association between two variables based on ranked values, without assuming any specific distribution. The chi-square test for independence assesses whether two categorical variables and their levels are statistically associated. A significance level of 0.001 ($p < 0.001$) was adopted for all analyses.

Results

The dataset comprised 9,009 protocols, including 1,021 for the CBCL/1½–5, 6,926 for the CBCL 6–18, and 1,062 for the ABCL, all originating from diverse contexts ($p < 0.001$, Equality of Two Proportions test). By region, the Southeast contributed the largest proportion of data (63.6%, $n = 5,730$), followed by the South (27.6%, $n = 2,484$) and the Midwest (8.8%, $n = 795$) ($p < 0.001$, Equality of Two Proportions test).

Regarding the time of protocol completion, 3,556 protocols (42.0%) were from studies conducted between 2004 and 2010, 3,955 protocols (43.6%) from 2011 to 2019, and 951 protocols (11.2%) in 2020, during the COVID-19 pandemic-related social distancing ($p < 0.001$, Equality of Two Proportions test). For 547 protocols, the year of completion could not be identified. Concerning respondents, the CBCL/1½–5 and CBCL 6–18 were primarily completed by mothers (60% and 58%, respectively), followed by fathers (11%). Similarly, the ABCL was completed by parents (28%) and spouses (20%).

The individuals evaluated were 5,095 males (56.6%) and 3,914 females (43.4%), with a statistically significant difference ($p < 0.001$, Equality of Two Proportions test) (Table 1). Most participants (60%) had T-scores below the clinical cutoff on the IP, EP, and TP scales, and the differences between non-clinical, borderline, and clinical categories were statistically significant ($p < 0.001$, Equality of Two Proportions test).

Table 1 - Distribution of Protocols by Instrument, Region of Origin, Sex, Year of Completion, and Age Group

| | | N | % | p^* |
|------------------------------|------------------------|-------|-------|--------|
| Instrument (N=9.009) | 1.5 - 5 | 1.078 | 12.0% | <0,001 |
| | ABCL | 1.104 | 12,3% | <0,001 |
| | CBCL | 6.827 | 75,8% | Ref. |
| Region (N=9.009) | Central-West | 795 | 8,8% | <0,001 |
| | Southeast | 5.730 | 63,6% | Ref. |
| | South | 2.484 | 27,6% | <0,001 |
| Sex (N=9.009) | Female | 3.914 | 43,4% | <0,001 |
| | Male | 5.095 | 56,6% | <0,001 |
| Year of Completion (N=8.462) | 1st Decade (2004–2010) | 3.556 | 42,0% | <0,001 |
| | 2nd Decade (2011–2019) | 3.955 | 46,7% | Ref. |
| | Pandemic (2020) | 951 | 11,2% | <0,001 |
| | Early Childhood | 1.021 | 11,3% | <0,001 |
| Age Group (N=9.009) | Late Childhood | 3.924 | 43,6% | Ref. |
| | Early Adolescence | 2.100 | 23,3% | <0,001 |
| | Middle Adolescence | 902 | 10,0% | <0,001 |
| | Emerging Adulthood | 329 | 3,7% | <0,001 |
| | Young Adulthood | 433 | 4,8% | <0,001 |
| | Middle Adulthood | 300 | 3,3% | <0,001 |

* The Equality of Two Proportions test

A statistically significant positive correlation

was observed between the scales across all age

groups ($p < 0.001$, Spearman's correlation): IP \times EP ($r = 0.55$ [middle adolescence] to $r = 0.65$ [young adulthood]), IP \times TP ($r = 0.83$ [late childhood] to $r = 0.89$ [young adulthood]), and EP \times TP ($r = 0.83$ [emerging adulthood] to $r = 0.86$ [young adulthood]).

In the clinical category, the highest percenta-

ges were observed for TP in early adolescence (40.9%), EP in late childhood (31.9%), and IP in middle adolescence (49.3%) (Table 2). Across all age groups, significant differences were found between non-clinical, borderline, and clinical categories for IP, EP, and TP ($p < 0.001$, chi-square test).

Table 2 - Percentage of individuals considered non-clinical, borderline, or clinical on the Externalizing, Internalizing, and Total Problems scales* by Age Group**

| | Externalizing | | | Internalizing | | | Total Problems | | | Total n (%) |
|--------------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|------------------|
| | NC n (%) | B n (%) | C n (%) | NC n (%) | B n (%) | C n (%) | NC n (%) | B n (%) | C n (%) | |
| Early Childhood | 603 (59.1) | 153 (15.0) | 265 (26.0) | 478 (46.8) | 171 (16.7) | 372 (36.4) | 531 (52.0) | 121 (11.9) | 369 (36.1) | 1,021 (100.0) |
| Late Childhood | 2,130 (54.3) | 542 (13.8) | 1,252 (31.9) | 1,818 (46.3) | 615 (15.7) | 1,491 (38.0) | 1,851 (47.2) | 584 (14.9) | 1,489 (37.9) | 3,924 (100.0) |
| Early Adolescence | 1,232 (58.7) | 271 (12.9) | 597 (28.4) | 865 (41.2) | 279 (13.3) | 956 (45.4) | 934 (44.5) | 307 (14.6) | 859 (40.9) | 2,100 (100.0) |
| Middle Adolescence | 577 (64.0) | 116 (12.9) | 209 (23.9) | 334 (37.0) | 123 (13.6) | 445 (49.3) | 399 (44.2) | 156 (17.3) | 347 (38.5) | 902 (100.0) |
| Emerging Adulthood | 231 (70.2) | 38 (11.6) | 60 (18.2) | 186 (56.5) | 47 (14.3) | 96 (29.2) | 215 (65.3) | 44 (13.4) | 70 (21.3) | 329 (100.0) |
| Young Adulthood | 295 (68.1) | 62 (14.3) | 76 (17.6) | 235 (54.3) | 65 (15.0) | 133 (30.7) | 269 (62.1) | 67 (15.5) | 97 (22.4) | 433 (100.0) |
| Middle Adulthood | 189 (63.0) | 43 (14.3) | 68 (22.7) | 173 (57.7) | 42 (14.0) | 85 (28.3) | 181 (60.3) | 57 (19.0) | 62 (20.7) | 300 (100.0) |

Note. NC = non-clinical; B = borderline; C = clinical

* categories for IP, EP, and TP ($p < 0.001$, chi-square test) ** age groups ($p < 0.001$, Spearman's correlation)

Among females, TP were most prevalent in middle adolescence (44.6%) and early adolescence (41.1%), followed by late childhood (34.2%) and early childhood (33.1%). Among males, TP were most prevalent in early adolescence (40.8%), followed by late childhood (40.6%) and early childhood (37.9%). Girls exhibited higher rates of IP in middle adolescence (53.8%), whereas females

aged 19–24 years (emerging adulthood) exhibited the lowest prevalence of problematic behaviors across all scales. Boys presented the highest rates of clinical IP in early adolescence (47.0%), and EP were most prevalent among males in late childhood (34.2%). Across age groups, more than half of the male sample was classified as non-clinical on the EP (Table 3).

Table 3 - Percentage of individuals considered non-clinical, borderline, or clinical on the Externalizing, Internalizing and Total Problems scales by Sex and Age Group

| | Externalizing | | | Internalizing | | | Total Problems | | | Total n (%) |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|------------------|
| | NC n (%) | B n (%) | C n (%) | NC n (%) | B n (%) | C n (%) | NC n (%) | B n (%) | C n (%) | |
| Female | | | | | | | | | | |
| Early Childhood | 230 (62.8) | 52 (14.2) | 84 (23.0) | 180 (49.2) | 64 (17.5) | 122 (33.3) | 201 (54.9) | 44 (12.0) | 121 (33.1) | 366 (100.0) |
| Late Childhood | 975 (59.6) | 192 (11.7) | 469 (28.7) | 852 (52.1) | 237 (14.5) | 547 (33.4) | 822 (50.2) | 254 (15.5) | 560 (34.2) | 1,636 (100.0) |

| | Externalizing | | | Internalizing | | | Total Problems | | | Total |
|--------------------|-----------------|---------------|---------------|---------------|---------------|---------------|-----------------|---------------|---------------|------------------|
| | NC | B | C | NC | B | C | NC | B | C | |
| Early Adolescence | 532 (62.2) | 97 (11.3) | 226 (26.4) | 366 (42.8) | 119 (13.9) | 370 (43.3) | 384 (44.9) | 120 (14.0) | 351 (41.1) | 855 (100.0) |
| Middle Adolescence | 299 (61.1) | 63 (12.9) | 127 (26.0) | 167 (34.2) | 59 (12.1) | 263 (53.8) | 190 (38.9) | 81 (16.6) | 218 (44.6) | 489 (100.0) |
| Emerging Adulthood | 141 (80.1) | 20 (11.4) | 15 (8.5) | 108 (61.4) | 16 (9.1) | 52 (29.5) | 129 (73.3) | 16 (9.1) | 31 (17.6) | 176 (100.0) |
| Young Adulthood | 158 (72.1) | 33 (15.1) | 28 (12.8) | 120 (54.8) | 28 (12.8) | 71 (32.4) | 141 (64.4) | 38 (17.4) | 40 (18.3) | 219 (100.0) |
| Middle Adulthood | 104 (61.2) | 25 (14.7) | 41 (24.1) | 101 (59.4) | 18 (10.6) | 51 (30.0) | 105 (61.8) | 31 (18.2) | 34 (20.0) | 170 (100.0) |
| | Externalizing | | | Internalizing | | | Total Problems | | | Total |
| | NC | B | C | NC | B | C | NC | B | C | |
| Male | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) |
| Early Childhood | 373 (56.9) | 101 (15.4) | 181 (27.6) | 298 (45.5) | 107 (16.3) | 250 (38.2) | 330 (50.4) | 77 (11.8) | 248 (37.9) | 655 (100.0) |
| Late Childhood | 1,155 (50.5) | 350 (15.3) | 783 (34.2) | 966 (42.2) | 378 (16.5) | 944 (41.3) | 1,029 (45.0) | 330 (14.4) | 929 (40.6) | 2,288 (100.0) |
| Early Adolescence | 700 (56.2) | 174 (14.0) | 371 (29.8) | 499 (40.1) | 161 (12.9) | 585 (47.0) | 550 (44.2) | 187 (15.0) | 508 (40.8) | 1,245 (100.0) |
| Middle Adolescence | 278 (67.3) | 53 (12.8) | 82 (19.9) | 167 (40.4) | 64 (15.5) | 182 (44.1) | 209 (50.6) | 75 (18.2) | 129 (31.2) | 413 (100.0) |
| Emerging Adulthood | 86 (57.7) | 18 (12.1) | 45 (30.2) | 74 (49.7) | 31 (20.8) | 44 (29.5) | 82 (55.0) | 28 (18.8) | 39 (26.2) | 149 (100.0) |
| Young Adulthood | 137 (64.0) | 29 (13.6) | 48 (22.4) | 115 (53.7) | 37 (17.3) | 62 (29.0) | 128 (59.8) | 29 (13.6) | 57 (26.6) | 214 (100.0) |
| Middle Adulthood | 84 (65.1) | 18 (14.0) | 27 (20.9) | 71 (55.0) | 24 (18.6) | 34 (26.4) | 75 (58.1) | 26 (20.2) | 28 (21.7) | 129 (100.0) |

Note. NC = non-clinical; B = borderline; C = clinical

Discussion

This study provides a comprehensive overview of the prevalence and developmental patterns of IP, EP, and total emotional and behavioral problems across childhood, adolescence, and adulthood in Brazil, based on 9,009 ASEBA protocols from the Southeast, Central-West, and South regions. Clinical problems were observed in all age groups, with IP being the most prevalent (54.6%). Across age and sex, more individuals were classified as non-clinical on the EP (60%) than on the IP or TP scales, consistent with previous findings (Paula et al., 2015; Siqueira et al., 2023).

In the pediatric population (up to 18 years), approximately one third of protocols fell into the borderline or clinical range: IP, 33.6%; EP, 26.4%; TP, 31.2%. These data corroborate prior literature

indicating significant emotional and behavioral difficulties in childhood and adolescence (Paula et al., 2015; Siqueira et al., 2023) and suggest that developmental processes, including maturation, emotional regulation, cognitive flexibility, and impulse control, may facilitate the resolution of behavioral problems over the life course, particularly externalizing behaviors. Early behavioral difficulties can generate stress, impair social interactions, and hinder learning, which may exacerbate problems as children face new adolescent challenges.

Adolescence, particularly early (11–14 years) and middle (15–17 years), exhibited the highest prevalence of clinical IP and TP, with 40.9% of early adolescents classified as clinical for TP, 49.3%

of middle adolescents for IP, and 31.9% of late childhood children for EP. Adolescence is characterized by profound biological, neurological, and social changes, including puberty-related hormonal shifts, ongoing brain maturation (e.g., synaptic pruning), and increasing social complexity, that can heighten vulnerability to psychopathology, particularly internalizing disorders (Pfeifer & Allen, 2021).

Executive function development appears to be a key factor influencing the emergence of both IP and EP (Yang et al., 2022). Executive functions, defined as higher-order cognitive processes enabling goal-directed planning and control over thoughts, emotions, and behaviors, are essential for inhibitory control, working memory, emotional regulation, planning, and organization (Choi & Park, 2021). Adolescents with emotional and behavioral problems demonstrate lower self-regulation and dysregulated physiological, cognitive, emotional, and behavioral responses (Yang et al., 2022).

IP, including depression, anxiety, and non-suicidal self-injury, were more prevalent among girls in middle adolescence (53.8%) and among boys in early adolescence (47.0%) (Campos et al., 2021). These findings suggest that transitional developmental phases may exacerbate internalizing symptoms regardless of sex. In contrast, clinical EP were more frequent in late childhood (34.2% for males) and early adolescence, reflecting impulsive, disinhibited behaviors requiring external support and targeted interventions to enhance self-awareness and skill development.

Across all age groups, strong positive correlations were observed between the scales: IP \times EP ($r = 0.55-0.65$), IP \times TP ($r = 0.83-0.89$), and EP \times TP ($r = 0.83-0.86$), all statistically significant ($p < 0.001$, Spearman's correlation), indicating that these dimensions are interrelated and often co-occur.

From early childhood, environmental stimuli interact with the nervous system to influence the onset, maintenance, and prognosis of psychopathology. Brain maturation and expanding social experiences likely contribute to the reduction of maladaptive externalizing behaviors across

development. As children grow, they develop conflict-resolution skills, follow social rules, and increase self-control, promoting social adaptation and reduced EP. Deficits in executive functions in early childhood were identified as shared risk factors for both IP and EP problems, highlighting the potential benefit of early executive function interventions (Oh et al., 2020).

Interestingly, respondents, predominantly mothers, reported fewer EP than IP across all age groups. Even for young children, internalizing behaviors were more frequently observed, potentially reflecting heightened parental attentiveness or critical evaluation.

In adulthood, the lowest prevalence of clinical internalizing scores was observed, and most adults, as well as younger children (early childhood), were classified as non-clinical for TP. However, emerging adult males (18–24 years) exhibited higher rates of EP than other age groups, potentially reflecting difficulties in interpersonal situations, such as intentional harm toward others with little regard for their rights or feelings. The development of social skills and executive functions during adolescence and early adulthood appears crucial for mitigating EP, enhancing self-regulation, and promoting adherence to social norms.

Sex-specific patterns emerged across the lifespan. Females exhibited peaks in IP and TP during middle adolescence, while EP peaked in late childhood, similar to males. For males, TP peaked in early adolescence, with IP peaking in middle adolescence, paralleling female patterns. These findings indicate that different behavioral problems predominate at distinct developmental stages. Middle-aged women exhibited more EP than men of the same age, while younger adult men had higher EP than women, consistent with Peterson et al. (2025). Certain behaviors, such as raising one's voice when frustrated, may be more frequent among women engaged in substantial parental responsibilities.

Overall, reductions in problem scores across the three scales were observed upon entry into adulthood. However, for males, less than 50%

were considered non-clinical on the Internalizing scale until after age 25 (young and middle adulthood), suggesting persistent vulnerabilities.

Limitations include the absence of socioeconomic and other contextual variables, which likely interact with behavioral outcomes. The sample may overrepresent clinical populations, though control group data were included, and school-aged samples may include more community participants than other age groups. Nonetheless, adolescence emerged as a critical period with the highest proportion of clinical and borderline cases, emphasizing the importance of monitoring mental health during this stage. Despite these limitations, this study represents the first large-scale Brazilian survey using raw ASEBA data by age and sex, providing valuable insights into developmental trends in emotional and behavioral problems across the lifespan.

Final considerations

The limited prevalence data on emotional and behavioral problems in the Brazilian population pose a significant challenge for researchers, healthcare teams, and public health policymakers in addressing the impact of mental disorders across different age groups. In this context, the present study makes an important contribution, given the large dataset analyzed, which spans multiple regions of Brazil and utilizes ASEBA instruments—widely recognized for their reliability in screening mental health problems across diverse age groups. This study aimed to identify trends in the prevalence of IP and EP at different stages of the life cycle and across regions of Brazil. To our knowledge, it represents the first large-scale Brazilian survey based on raw behavioral data, analyzed by age and sex.

Understanding the frequency and distribution of a wide range of behavioral problems in the population has important implications for both public health and education. For instance, recognizing that EP related to parental roles are common in middle age, or that certain behavioral patterns are accentuated at the start of professional life or at the end of basic education, suggests that

targeted training programs for parents or learners could effectively reduce mental health problems in the population.

Despite variations in the prevalence of IP and EP across the life span, the data indicates that these two categories of problems can co-occur. Knowledge of how mental health problems manifest at different developmental stages, and of the fluctuations in these behaviors, can be highly valuable in designing and implementing effective prevention and intervention strategies throughout life, particularly during childhood and adolescence.

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