

# The effects of parental depression and anxiety on child behavior from 6 to 12 years old: a review

ROSE SKRIPKA DO NASCIMENTO GABRIEL<sup>1</sup>  
<https://orcid.org/0000-0002-8518-2979>

ELOISA APARECIDA BARROSO ANTONIETTO<sup>1</sup>  
<https://orcid.org/0000-0003-0325-480X>

ANTONIO DE PÁDUA SERAFIM<sup>2</sup>  
<https://orcid.org/0000-0002-0676-1500>

MIRIA BENINCASA GOMES<sup>1</sup>  
<https://orcid.org/0000-0003-1034-6999>

<sup>1</sup>Universidade Metodista de São Paulo, Graduate Program in Health Psychology  
 São Bernardo do Campo, São Paulo, Brazil.

<sup>2</sup>Universidade de São Paulo Medical School, Psychiatry, São Paulo, Brazil.

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## Abstract

**Background:** Parental depression and anxiety are relevant factors that may influence child externalizing and internalizing behavior; also influenced by stigmatized knowledge about such mental illnesses. **Objectives:** To identify which instruments were used in studies on the effects of parental depression and anxiety on child behavior from 6 to 12 years old; to analyze the main results in offspring's behaviors on articles published between 2011 to 2019. **Methods:** we did a literature review searching PubMed, BVS, ISI, and Scopus databases; keywords: "Maternal Depression", "Maternal Anxiety", "Paternal Depression", "Paternal Anxiety", "Mother's (also Mothers') Depression", "Mother's (also Mothers') Anxiety", "Father's (also Fathers') Depression", "Father's (also Fathers') Anxiety", "Parental Depression", "Parental Anxiety" AND "Child Behavior", in Portuguese and English. **Results:** We found 1,500 articles, after applying the inclusion criteria,  $n = 23$  were selected and analyzed. 78.3% of studies were performed with mothers, 17.4% with both parents, and 0% with fathers alone. Different instruments were used to assess depression or anxiety in parents, and child behavior. **Discussion:** studies that included both parents and parental anxiety assessments were scarce; no study in this review evaluated only fathers. Social abilities, personality traits, self-conceptions, and knowledge about anxiety and depression could enhance the quality of studies' results.

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## Introduction

Parental depression is one of the strongest prognosticators of youth depression, shaping cortisol responses to stress in middle childhood. Moreover, early studies demonstrate that children with low positive emotionality are more susceptible to stress, compared with children with maternal depression and higher positive emotionality<sup>1,2</sup>. Similarly, children of depressed mothers may develop negative emotionality and low positive emotionality; both situations may induce them to future depression<sup>3</sup>. On the other hand, paternal depression associated with higher child fear and behavioral inhibition may interact to predict children's cortisol reactivity<sup>1,2</sup>.

Paternal mental disorders can adversely influence children's health<sup>4</sup>. However, the literature has tended to emphasize the impact of maternal depression on the offspring outcomes; more recently, there has been an advance in researching the effects fathers' depression can influence child behaviors<sup>5</sup>. In another study, the results indicated that parental anxiety as a potent predictor of symptoms of social anxiety in children ranged from 7 to 12 years old<sup>6</sup>.

Anxiety disorders in parents represent an increased risk factor for anxiety disorders and depression in children<sup>7,8</sup>. Micco et al.<sup>9</sup> examined the prevalence of psychopathology among 972 offspring ranged from 4 to 25 years old of anxiety-disordered

parents in a previous meta-analysis study. The results reveal that children of parents with anxiety disorders have an augmented risk of developing anxiety disorders (odds ratio [OR] = 3.91, 95% CI = 2.51-6.1), depressive symptoms (OR = 2.67, 95% CI = 1.69-4.23) and others psychiatric symptoms.

As a result of parental anxiety, children may experience anxiety symptoms that are reflected in day-to-day functioning and affecting school performance. Symptoms of anxiety occur in comorbidity with depressive symptoms and often persist into adulthood<sup>8,9</sup>.

The number of people with depression around the world was estimated at more than 300 million, which means 4.4% in 2015. Depression is more common in women (5.1%) than men (3%), as anxiety (4.6% women compared to 2.6% men). The World Health Organization<sup>10</sup> has ranked depression as the 4<sup>th</sup> leading cause of disability, and by 2020 there is an estimate it will be the second leading cause<sup>10,11</sup>. Very close to this number, anxiety disorders can simultaneously take place for the growth of the global disability. The number of people living with anxiety disorders is estimated at 264 million<sup>10</sup>.

The years of life lived with disability (YLDs) are related to Years of Life Lost (YLL) to compute the DALYs (Disability-Adjusted Life Years), which results in lower productivity and negative impact on the individuals and their families<sup>10,12</sup>. Regarding DALYs, anxiety disorders cause 10.4% of lost to neurological, mental, and substance use disorder, or 26,800,000 DALYs worldwide<sup>13</sup>.

The DALYs are the key metric to assess the Global Burden of Disease (GBD)<sup>10</sup>. Regarding depression and anxiety, no YLL is attributed directly to these conditions in the GBD analyses. Therefore, estimates of YLD represent the total estimated DALYs for these two disorders, accounting depression, the principal contributor to suicide (categorized in GBD as intentional injuries) that represents a total 54,215 YLD<sup>10</sup>.

The World Mental Health Surveys (WMHS)<sup>14,15</sup> confirms that in several countries, anxiety disorders are more prevalent than other disorders as mood, substance use, and impulse control disorders. Clinical reports have focused on separation anxiety in children with less attention in adult groups, whereas WMHS presents anxiety as a condition in adults that appears around one-third of childhood-onset cases persisting into adulthood<sup>16, 8</sup>.

Symptoms of anxiety may cause embarrassment, and survey questionnaires may not adequately assess this. Furthermore, differences in the prevalence of mental disorders across the world may indicate different meaningful factors in risk and resilience<sup>16</sup>.

Anxiety disorders frequently precede severe outcomes, such as suicidality in people with depression and are associated with reduced educational succeeding, unstable marriage, decreased health-related quality of life, lower employability, and significant direct and indirect economic costs<sup>16,17</sup>.

Gelaye *et al.*<sup>18</sup> report that perinatal depression in low-income and middle-income countries is prevalent impacting one in four women antepartum and one in five women postpartum. Both antepartum depression and postpartum depression bring severe consequences to offspring's behaviors, from infancy to adolescence.

Maternal depression predicts externalizing behaviors in younger children. Infancy e toddlers may represent periods in which children are more dependent and closer to their parents. Additionally, the environmental risk, such as the pattern of parenting, interactions among genes, cognitive and affective conditions, interpersonal relationships, and biological systems, may relate to externalizing behaviors rather than internalizing behaviors<sup>19,3</sup>.

Moreover, children in middle childhood with mothers that present depressive symptomatology have shown higher rates of mood disorders, internalizing and externalizing problems, and hindrances in emotional development than children of nondepressed mothers<sup>3</sup>.

The middle childhood, represented from 6 to 12 years old, is a difficult period of behavioral, emotional, social, cognitive, and physical development. Positive parenting strategies may model child behavior, prevent conduct problems, and the emergence of depressive symptoms, as well as decrease parental anxiety<sup>20,21</sup>.

Yap and Jorm<sup>22</sup> suggest that parenting, children internalizing behaviors, depression, or anxiety may have bidirectional influence; that is, children's behaviors can evoke or bolster some parental behaviors, consequently triggering off a disturbance in children's mental health. Similarly, Lawrence *et al.*<sup>7</sup> reinforce the need for studies on depression and anxiety via dimensional constructs, such as measures of symptoms and traits, as well the broader domains of such pathologies, to highlight the features of anxiety and depression explained by different mechanisms.

Furthermore, the common sense related to the diagnosis of anxiety and depression is usually associated with lack of knowledge, misunderstanding, and stigmas about mental illness, becoming barriers to the promotion of mental health.<sup>23,24,25</sup>

Based on the evidence elucidated in previous studies on child behavior and parental anxiety and depression, this review aims to: Identify which instruments were used in studies on the effects of parental depression and anxiety on child behavior from 6 to 12 years old, as well as to analyze the main findings in offspring's

externalizing and internalizing behaviors on articles published between 2011 to 2019.

## Method

To elaborate on this systematic review, we followed the PRISMA Declaration's guidelines partially<sup>26,27</sup>.

## Inclusion and Exclusion Criteria

The following inclusion criteria were established: (a) the goal of the studies included was to determine the influence of parental (mothers, fathers or both) depression or anxiety on offspring behavior (externalizing, internalizing or both); (b) the assessment of parental depression or parental anxiety was based on interviews or self-report instruments; (c) the study population consists of offspring aged between 6 to 12 years; (d) results from studies were extracted from the association of parental depression or anxiety on offspring behavior; (e) studies must have been published between 2011 and 2019.

Exclusion criteria were: (a) population with a diagnosis of other psychiatric disorders, health issues or mental disabilities; (b) studies that measure mental health but depression or anxiety could not be derived from the data obtained; (c) studies that deal with substance (drugs or alcohol) related disorder on parents; (d) studies that assess the exposure of parents or children to environments that potentially lead to depression and anxiety; (e) reviews, case studies and meta-analysis; (f) articles not published in Portuguese nor English.

## Search Strategy

A systematic search in the following electronic databases was conducted: BVS, ISI, Scopus, and PubMed. The main descriptors used were Maternal Depression AND Child Behavior, Maternal Anxiety AND Child Behavior, Paternal Depression AND Child Behavior, Paternal Anxiety AND Child Behavior, Mother's (also Mothers') Depression AND Child Behavior, Mother's (also Mothers') Anxiety AND Child Behavior, Father's (also Fathers') Depression AND Child Behavior, Father's (also Fathers') Anxiety AND Child Behavior, Parental Depression AND Child Behavior, Parental Anxiety AND Child Behavior, both in Portuguese and English, being 02/15/19 the date of the last search. The full details of the extraction process are given in Figure 1.

## Results

Figure 1 depicts the results in each of the steps preconized by the PRISMA Declaration's guidelines<sup>26,27</sup>: (a) identification: applying the described search strategy, we located initially a total of 1,500 publications; (b) evaluate: from the total population, 771 articles were eliminated, as they are duplicates, and the remaining 729 articles were evaluated by title and abstract. At this stage, 590 articles were eliminated; (c) accepted: the remaining 139 articles were subjected to full-text reading with 100 articles eliminated in this phase; (d) included: the 39 articles hold from the previous step were subjected to critical reading. The process concluded with the selection of 23 articles that are part of this review and met the inclusion criteria defined.

Supplementary Table1 presents the characterization of 23 papers included in the present review regarding authors; year of publication; location of data collection; publication language; number of citations; parental status including sample size and demographic data (when available); child characteristics including sample size, age, gender and other demographic data (when

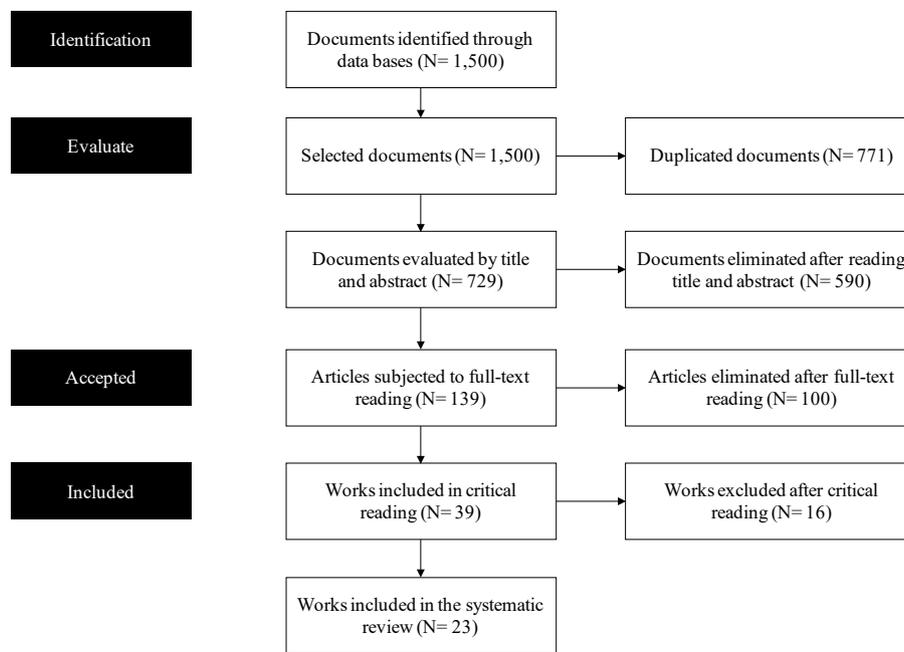


Figure 1

available); type of study performed; measure used to assess depression and/or anxiety on parents and timing of assessment; other measures used to assess symptoms not related to anxiety and/or depression and timing of assessment; child behavior assessment measures and timing of assessment; aim of the study and main findings.

Regarding the year of publication, two studies were published in 2011 (8.7%), two in 2012 (8.7%), and five in 2013 (21.7%). In 2014, 2015 and 2016 were published three studies per year (yielding 39.0%). No studies published in 2017 were chosen in this review. Four studies were published in 2018 (17.4%) and finally one in 2019 (4.3%).

Data from the studies were collected in the following countries: Brazil (n=4; 17.4%), China, Finland, Norway, South Africa, Sri Lanka, Sweden and the UK with one study each (n=7; 30.1%) and the USA with twelve studies or 52.2% of the total.

Except for two studies published in Portuguese, most studies (n=21; 91.3%) were published in English. Also, only three studies from 2018 were not cited yet. For the remaining studies, the mean of citations is 23.4 (SD=26.2), the minimum number of citations is 1, and the maximum is 82 citations.

Most of the studies (n=18; 78.3%) were performed with mothers, followed by both parents (n=5; 17.4%), and no study was performed with fathers alone. Fifteen out of twenty-three studies (65.2%) included the mean age of respondents (mother, father, or both parents). From these fifteen studies, eleven reported the mean age of mothers that ranged from 25.4 to 43.4 years (median=34.5 y.o.). From studies that reported both parents' mean age (four out of fifteen), the mothers' mean age ranged from 34.8 to 41.9 years, and the range for the mean age of fathers was from 36.3 to 41.9 years.

From parental data, the sample size varied from 21 in a cross-sectional study to 20,733 in a longitudinal study (panel survey data).

A total of fourteen different instruments were used to assess depression or anxiety in parents, SCID-I was applied in eight studies (23.5%), BDI in seven studies (20.6%), CES-D, BDI-II and EPDS in 3 studies each (8.8%), PHQ-9 in 2 studies (5.9%) and the remaining instruments: BSI, SCL, SF-12 (PCS & MCS), SCID-II, CCEI, PHQ-2, HSCL-25 and PDS were employed once (2.9% of total, each instrument).

Eleven studies (47.8% of total studies) employed two different instruments to assess depression or anxiety in parents, being the

most frequent the association between BDI (in all versions) and SCID (in all versions), that occurred six times in these studies.

SCDI-I (Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders Axis I) and SCDI-II (Axis II Disorders) are broadly considered the best standard semi-structured assessment instruments for clinical disorders (Axis I) and personality disorders (Axis II)<sup>51</sup>.

BDI (Beck Depression Inventory) is a scale for the assessment of depression "as a homogeneous psychopathology entity"<sup>52</sup>. The clinical evaluation was organized in twenty-one symptoms and attitudes which can be rated from 0 to 3 according to intensity: a) mood; b) pessimism; c) sense of failure; d) lack satisfaction; e) guilt feelings; f) sense of punishment; g) self-dislike; h) self-accusation; i) suicidal wishes; j) crying; k) irritability; l) social withdrawal; m) indecisiveness; n) distortion of body; o) work inhibition, p) sleep disturbance; q) fatigability; r) loss of appetite; s) weight loss; t) somatic preoccupation; u) loss of libido<sup>53</sup>.

In order to assess child behavior, a total of sixteen different instruments were used. Fifteen studies (40.5%) applied CBCL, five studies (13.5%) applied SDQ, three studies (8.1%) applied YSR, two studies (5.4%) applied CDI. The remaining fourteen instruments: BASC-TRS, TOPP, MASC, BCL, Rutter Parental Scale, CIS, SMFQ, CTRE, TSAB, DAWBA, ICD-10, and K-SADS-PL were applied once each (2.7% of total).

From the twenty-three studies selected, nine of them used more than one instrument to assess child behavior, being the combination of YSR and CBCL, the most commonly found, with three studies.

SDQ (Strengths and Difficulties Questionnaire) is an instrument to assess children and youth behavior from 4 to 16 years old, and another version can be available for self-report. SDQ is compound by 25 attributes divided into five scales of 5 items each: Hyperactivity Scale; Emotional Symptoms Scale; Conduct Problems Scale; Peer Problems Scale; Prosocial Scale. Each item can be marked as: not true, somewhat true, or certainly true<sup>54</sup>.

The Child Behavior Checklist (CBCL) and the Youth Self-Report (YSR) are assessment tools developed by Achenbach<sup>55</sup> with two versions: CBCL/1½-5, validated and published in for ages 1.5 to 5, CBCL/6-18 4/18, validated and published in 2001 for ages 6 to 18, and YSR/11-18, validated and published in 2001 for ages 11 to 18. While parents complete both CBCL, YSR is completed by the

adolescent. The three instruments have the same structure and are divided into two sections: social competence/adaptive functioning and behavior problems<sup>56</sup>.

For the behavior profile section, the questionnaires are composed of 118 items and the options to answer 0 (not true), 1 (somewhat or sometimes true) and 2 (very true or often true) and the scores derived from these items comprise eight narrowband scales (or syndromes): anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior. Also, the items encompass three broad-band scales: internalizing behavior problems, externalizing behavior problems, and total behavior<sup>57</sup>.

Additionally, seventeen studies (73.9%) used other assessment instruments in conjunction with anxiety or depression in parents and child behavior, comprising twenty-six different tools.

## Discussion

The results were analyzed according to the descriptors.

The studies in this review predominantly elected maternal depression as the main impact factor on child behavior<sup>28-32,34,38-48</sup>. Both in cross-sectional and longitudinal studies there are an association between maternal and children behavioral problems in general.

Regarding indicators of children internalizing and externalizing behaviors, O'Connor *et al.*<sup>41</sup> suggest that mothers with an essential course of depression, combining severity and chronicity or analyzing them separately over time, may predict higher ratios of problems behavior in children.

Interestingly, Ulmer-Yaniv *et al.*<sup>47</sup> identify pathways that lead to internalizing and externalizing behaviors: maternal depression is linked with maternal negativity, and greater child withdrawal, higher maternal CT (cortisol) is associated with higher child CT and an increase in mother and child s-IgA (secretory immunoglobulin) levels. Both authors consider that maternal behavior may impact youth functioning if mothers present a history of depression and showing less effective parent-child interactions.

Furthermore, Sun-Mi *et al.*<sup>46</sup> have found differences between gender and the effects of maternal depression in middle childhood; girls had significantly higher rates than boys in somatizations.

Towards understanding the persistence of maternal depression over child behavior, Agnafors *et al.*<sup>28</sup> suggest that symptoms of depression postpartum may not have a direct effect on internalizing and externalizing behaviors in children age twelve. There is a higher risk of adverse effects that appear under recurrent and ongoing maternal depressive symptoms and symptoms of depression postpartum.

According to Luoma *et al.*<sup>38</sup>, maternal loneliness during middle childhood may be predicted by maternal prenatal depressive symptoms, as well as maternal loneliness during middle childhood may predict adolescent's internalizing behavioral problems, moreover only in the maternal reports.

The externalizing behavioral problems are discussed by Sandman *et al.*<sup>45</sup>, associating maternal reports of prenatal maternal depression and cortical thickness in children from six to nine years old. This study proposes strong evidence that fetal exposure to elevated levels or dysregulation of cortisol, a fact in maternal distress, alters limbic structures in humans. Thus, prenatal depression influences children's cortical thinning, augmenting the risk of developing conduct disorder problems.

In another perspective, Choe *et al.*<sup>34</sup> analyzed the children's qualities that interact with maternal depression and the prospection of externalizing behavior. Child effortful control (EC) is a set of

self-regulatory abilities oppositely associated with externalizing problems characterized by capacities in inhibiting a dominant response and actuate with a subdominant response. EC is different from the control of attention or control of behavioral and emotional impulses and is more stable during early to middle childhood, becoming critically important in the development of socialization and personality.

Commonly, young children show higher levels of externalizing behaviors, and well-regulated externalizing behavior indicates a healthy behavior. This longitudinal study suggests that lower levels of EC increase the risk of externalizing behavior problems in boys and impairs the improvement of maternal depression. Further, self-regulatory capacity works as a protective factor for the effects of maternal depression.

Although Martineli *et al.*<sup>39</sup> have found the current maternal depression as a stronger predictor variable for the presence of internalizing and externalizing child behaviors, the cumulative and chronic adversities may contribute to behavioral problems.

Some studies selected in this review support the association between maternal depression and children's internalizing behavior. In a study that investigated mother-child aggression as a factor in the association between maternal depressive symptoms and child behavioral problems, Villodas *et al.*<sup>48</sup> did not find mother-child aggression as a mediator of maternal depression and internalizing behavior problems during middle childhood.

Also, Villodas *et al.*<sup>48</sup> suggest that internalizing behavioral problems are impacted for maternal disengagement, issue presented similarly for Bolsoni-Silva *et al.*<sup>29</sup> that propose mother negative practices associated with internalizing behavioral problems as well as mother depression associated to lower children social abilities.

Rohanachandra *et al.*<sup>44</sup> have found higher hyperactivity and internalizing problems as effects from maternal depressive episodes, though these authors suggest that internalizing behavioral problems to be lower in children whose mother had undertaken self-harm when compared with children whose mothers have not self-harmed. These findings suggest that children may perceive their mothers as ill, instigating further research that associates parental depression with the children's point of view and protective factors.

Beyond the impact on child internalizing and externalizing behavior, research suggests that maternal depression may expose children in middle childhood to develop Axis-I disorders. Priel *et al.*<sup>43</sup> followed children of depressed mothers from birth to middle childhood to analyze two markers of resilience, OT system (oxytocin), and social synchrony. Results put that OT is linked to higher child social engagement and higher synchrony, reducing internalizing and externalizing problems and mediating the adverse effects of maternal depression. Maternal sensitivity and child social engagement tend to lead to greater child individual stability.

Also, Boyd *et al.*<sup>30</sup> suggest that the treatment of the mother with depression may trigger anxiety in the child, added to the severity of maternal depressive symptoms, generating parenting difficulties that impact the children's internalizing and externalizing behavior problems.

Only one study presents an association between children's emotional problems, school performance, and maternal depression, although there is a small characterization of the sample. Pavan *et al.*<sup>42</sup> analyze that the group of children who had indicators of school or behavioral difficulties presented significant negative correlations between written language and emotional problems. Cardoso *et al.*<sup>32</sup> indicate similar findings in moderate correlations amongst maternal depression, child social abilities problems, child cognitive problems, aggressiveness, and rule-breaking.

Five studies analyzed both parents' depression and effects on children. Carrère and Bowie<sup>33</sup> relate father's hostility with children's externalizing behaviors and hostility in mothers were not associated with childhood behavior problems. However, neither parents' information about depressive symptoms appears significantly associated with children internalizing and externalizing problems.

Concerning coping and negative cognitive style in children of depressed parents, Dunbar *et al.*<sup>35</sup> used multiple informant methods to assess depressive symptoms in both children and parents. Coping means conscious efforts to regulation emotion, cognition, physiology, and the environment in the face of stressful events, and cognitive vulnerability or negative cognitive style is the manner of thinking about consequences after a negative circumstance. Pieces of evidence in this study show that at higher levels of negative cognitive styles in children, coping may act as a defense for children of depressed parents.

Gruhn *et al.*<sup>36</sup> also used a multimethod and multi-informant study in order to examine two types of negative parenting, intrusive and withdrawn behaviors, related to internalizing and externalizing problems in children of parents with depressive symptoms. Results demonstrate that withdrawn parenting has a significant correlation with internalizing and externalizing problems in girls, but not in boys. Besides, only the parent's current depression was directly significant for girls, but not for boys. Intrusive parenting style may be more generalized to both internalizing and externalizing behaviors in both boys and girls.

In a study conducted to understand the relationship amongst family functioning, parental depression, and child behavior problems, Wang *et al.*<sup>49</sup> found that only paternal perception of family functionally mediates the relation between parental depression and child behavior, and fathers' depression may influence child behavior problems. Additionally, when considered mothers and fathers together, their depression may influence each other and their spouses' perceived family.

Differently, Weitzman *et al.*<sup>50</sup> indicate that the impact of maternal depression on child behavior and emotional problems are more considerable than the influence of fathers' depression. These results conform with epidemiological data, the lifetime prevalence of adult mental health problems rates of 17% in women, and 9% in men for major depression. Rates of depression are commonly found among single men, socially isolated, present anxiety disorders, substance abuse, and unemployment.

Regarding assess parental anxiety disorders, three studies analyzed just mother anxiety. Boyd and Tervo-Clemmens<sup>31</sup> evaluated relations among comorbid maternal depressive and anxiety disorders, kinship support, and children's behavior problems. The more important finding suggests that mothers with obsessive-compulsive disorder (OCD) and comorbid depression have greater internalizing behavior problems and posttraumatic stress disorder (PTSD) may decrease the kinship support. Similarly, Nilsen *et al.*<sup>40</sup> refer to maternal distress to combine anxiety and depression and the influence on child behavior. Both authors found internalizing problems at age eight and externalizing problems at age twelve for girls. Externalizing problems at age eight may predict directly depressive symptoms in adolescence, only for girls. This situation can implicate social and academic problems, which then generate future behavioral problems.

Leis *et al.*<sup>37</sup> also relate the influence of symptoms of maternal depression and maternal anxiety on child emotional problems during middle childhood. This study concluded that higher maternal depression and maternal anxiety during pregnancy might be associated with child emotional and behavioral difficulties, while in the prenatal period, there were minor associations between maternal depression and anxiety and behavioral and emotional

problems in the middle to late childhood.

This review has not identified any study that addressed respondents' conceptions of depression and anxiety. Hasan and Muslen<sup>24</sup> relate that stigma factors are essential concepts to understand self-perception. Very often, reports are found that anxiety and depression have identical factors, and depressed people are judged as lazy, less engaged, and isolated from the environment, and weak personality accounts for depression. These conceptions are not useful to address such mental disorders<sup>24,25</sup>.

The lack of knowledge of anxiety and depression associated with perceived self-efficacy has a negative psychological effect and can diminish coping strategies such as negligence and avoidance<sup>58</sup>, affecting the bidirectional influence between parents and offsprings<sup>22</sup>.

## Conclusion

This review aimed to evaluate publications from 2011 to 2019 related to the influence of parental depression and anxiety on child behavior, mainly the externalizing and internalizing behavior. Twenty-three articles published in different journals were examined and reviewed. Although studies performed in the USA were the majority, studies from European and Asian countries were also found, as well as studies from Brazil.

The most used scales to assess depression or anxiety on parents were SCID-I (23.5%), followed by BDI (20.6%). To assess child behavior, CBCL was the most used (40.54%), with SDQ (13.5%) and YSR (8.1%) in second and third place, respectively.

The combined use of SCID-I on parents and CBCL on children was found four times on the revised studies, the same amount of studies that combined BDI and CBCL on their assessments. The combination of SCID-I with SDQ occurred one time, and SCID-I with YSR was not found in the studies. In turn, no revised study used the combination of BDI and SDQ or YSR.

Most studies in this review presented the child's behavior as perceived by parents or teachers, with few studies, including the children's point of view. This approach can lead to biased results due to the limitations of such reports, based on other's perceptions.

Also, studies that included both parents were scarce, and no study in this review evaluated only fathers, much like parental anxiety assessments, with rare studies found among the included articles.

Despite the abundance of previous studies that extensively covered the topic, none was found that correlates parental anxiety and depression with knowledge or self-conceptions about these mental disorders. Most recently, the American Psychological Association (APA) launched a new journal, specifically to cover the intersections and interfaces between stigma and health<sup>59,60</sup>, reinforcing the relevancy of such approach, as proposed by Hibbard *et al.*<sup>61</sup>.

Otani *et al.*<sup>62</sup> studied the impact of beliefs of autonomy and sociotropy in maladaptive self-schemas and their relationship with depression. Moreover, Li *et al.*<sup>63</sup> presented pieces of evidence from the impact of media messages about depression and anxiety stigmas on the delay of treatment of mental illness.

The conjoint assessment of distinguishable aspects like social abilities and personality traits on parents and offspring could enhance the quality of studies' results, adding more unique elements to the analysis. On the other hand, education and health go side by side during middle childhood, and the inclusion of such variables would improve the use of such studies by parents and teachers.

Finally, this study found a gap in existing studies that did not test the effects of parental depression and anxiety on offspring with the stigma associated with such mental disorders. This

combination could contribute to a better understanding of anxiety and depression theme, associated with self-perception, knowledge, active participation, and adaptative self-schemas, leading to better results on help-seeking behavior and quality of care.

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