

REVIEW ARTICLE

Offspring of mothers with bipolar disorder: a systematic review considering personality features

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Objective: To examine personality/temperament features and mental health vulnerability in offspring of mothers with bipolar disorders (BD), including dimensions which may impact psychological characteristics or therapeutic measures.

Methods: A systematic review, following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines, was conducted to search for original articles that investigated personality/temperament features of offspring of women with BD and emotional factors involved in the mother-child relationship. The electronic search was performed in the PubMed, Web of Science, and PsycINFO databases from February 2010 to February 2017.

Results: Ten quantitative studies were included in the analysis: seven from the United States, two from Brazil, and one from Canada. The narrative synthesis was categorized into three dimensions: 1) reliability of instruments for prediction of future psychopathology in offspring; 2) environmental risk factors for offspring; and 3) early interventions. The findings showed impairments in the offspring's lives, high rates of behavior and temperament problems, and psychiatric disorders.

Conclusion: BD is a frequent psychiatric disorder, and the offspring of mothers with this condition are exposed to complex family relationships and psychosocial difficulties. If they are to ensure a good provision of mental health and psychosocial care to this unique population, early interventions must not neglect their contextual specificities.

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Keywords: Bipolar disorder; adult children; mother-child relations; caregivers; systematic review

Introduction

Bipolar disorder (BD) is a psychiatric disorder of multifactorial etiology, being highly heritable with important contributions from the environment. Therefore, offspring of patients with BD may be at high risk for psychopathologies and social difficulties.^{1,2} Parents diagnosed with BD have challenges in the management of their disorder and in their effective parenting ability. In this context, among the challenges faced by their offspring is the need to adapt to new family and social roles, living with less family cohesion and organization, and enduring a greater potential for conflicts.²⁻⁵ Accordingly, the children of parents with BD represent an ideal population to assess the natural history of the disease and its prodromal symptoms.⁶

In one of the largest studies with offspring of BD patients, the Dutch Bipolar Offspring Study (DBOS),⁷ carried out in the Netherlands with a 12-year follow-up (from adolescence to adulthood) of 108 children, the authors found that 72% of the cohort developed an axis I

psychiatric disorder according to the DSM-IV throughout their lives and, by the age of 28, on average, more than half had developed a mood disorder.

According to Birmaher et al.,⁸ the largest study with children was the Pittsburgh Bipolar Offspring Study (BIOS), with a sample consisting of 388 offspring of 233 parents with BD and 251 offspring of 143 parents in a demographically matched control group. Compared to offspring in the control group, the offspring of parents with BD showed a fourteenfold increase in rates of bipolar spectrum disorders, an approximately two- to threefold increase in any mood and anxiety disorders, and a four- to sixfold increase in the rates of any axis I disorders. Over 75% of the children that developed BD had their first mood episode before the age of 12, with most of these episodes meeting criteria for BD not otherwise specified and, to a lesser extent, major depression.⁸

In this context, psychological support for family members and caregivers of patients with BD is indicated,^{9,10} and, unless excluded by the patient, caregivers and family

members should have the opportunity to be involved in treatment and follow-up decisions.¹⁰ There is a gap in the scientific literature with regard to which of these psychological aspects most necessitate support.⁶

The aim of the present study, therefore, was to conduct a systematic review of studies that identify the personality/temperament features of offspring of women with BD. The main aim was to contribute to the description of the emotional factors involved in this mother-child relationship to support health teams that work with this population, in addition to providing foundations for future studies.

Methods

This systematic review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) Statement.¹¹ The review protocol was registered in the International Prospective Register of Systematic Reviews (PROSPERO, registration number CRD42017039010).

Search strategies and screening procedure

A search was conducted in MEDLINE (via PubMed), PsycINFO, and Web of Science for articles published between February 8, 2007 and February 8, 2017. The search strategy was first developed in MEDLINE (via PubMed) and then adapted to all database, using the following boolean operators: “bipolar disorder” AND “offspring” AND “psy*.”

Data extraction

Studies with offspring of any gender of mothers with BD, in the format of original articles reporting clinical trials, case reports, or cohort, cross-sectional, case-control, and qualitative studies. When applicable, offspring from mothers without mental disorders or with disorders other than BD were considered as comparator groups.

Studies in which participants were offspring of puerperal women or women in puerperal depression, as well as studies focused on caregivers of women with BD in which findings about their children were not specified, were excluded. Articles reporting diseases and comorbidities related to mental disorders in general and reviews, expert opinions, and other article formats were also excluded.

After removing duplicate records, four authors (LKC, MEB, DAS, and RAB) conducted further selection independently, screening titles and abstracts and then accessing the full text. They discussed all disagreements with a fifth senior reviewer (ERT). The studies included by the four authors (LSC, MEB, DAS, and RAB) were analyzed using a pre-piloted data extraction form.

Data synthesis

A narrative synthesis that adopted a textual approach to summarize and explain the data was conducted. The content analysis of the selected articles followed a categorization according to their main findings. The results were developed in flowing text for better fluency in reading and to connect the themes. The entire process

was validated externally through discussions with other researchers in scientific meetings.

Quality appraisal

The quality appraisal considered at least 60% of the criteria set by the following checklists, according to the study design Consolidated Standards of Reporting Trials (CONSORT) and Strengthening the Reporting of Observational Studies in Epidemiology (STROBE). The studies were organized in EndNote throughout the refinement process.

Results

A total of 10 articles were found that fulfilled the inclusion criteria and addressed characterization of the psychological aspects of offspring of mothers with BD. Figure 1 presents the PRISMA flow diagram of the entire selection process. The studies were conducted in three different countries: seven in the United States, two in Brazil, and one in Canada. All the articles included used quantitative approaches (Table 1).¹²⁻²¹ Narrative synthesis of the set of findings allowed their categorization into three dimensions: 1) Reliability of instruments for prediction of future psychopathology in offspring of BD mothers; 2) environmental risk factors for offspring of BD mothers; and 3) early interventions, once identified risks were considered.

Reliability of instruments for prediction of future psychopathology in offspring of mothers with BD

Bipolar affective disorder has substantial impact both on persons with the condition and on their relatives, including their offspring. The instability associated with BD influences perceptions and interpretations of subjective reality. When subjects are mothers with the condition who are requested to answer about the behavior of their offspring, the responses may influence a “BD toxicity bias.”

In chronological order, the first of the included studies, conducted in Brazil by Petresco et al.,¹² aimed to evaluate the prevalence of psychopathology in offspring of women with BD compared to two control groups: mothers with other psychiatric disorders and mothers without a psychiatric diagnosis. More psychiatric problems were found in the offspring of mothers with BD, coinciding with results from the international literature.

The studied offspring¹² presented a higher prevalence of anxiety disorders and significant differences in relation to the control groups regarding axis I disorders throughout life. In the sample of 43 offspring of mothers with BD studied, 62.8% fulfilled the criteria for at least one psychiatric diagnosis throughout their lives. (Axis I, here, refers to the DSM-IV classification system, since the multiaxial formulation ceased to exist with publication of the DSM-5.)

The instrument used by these authors¹² was the Child Behavior Checklist (CBCL), also used in 50% of the articles that constitute the sample of the present review.

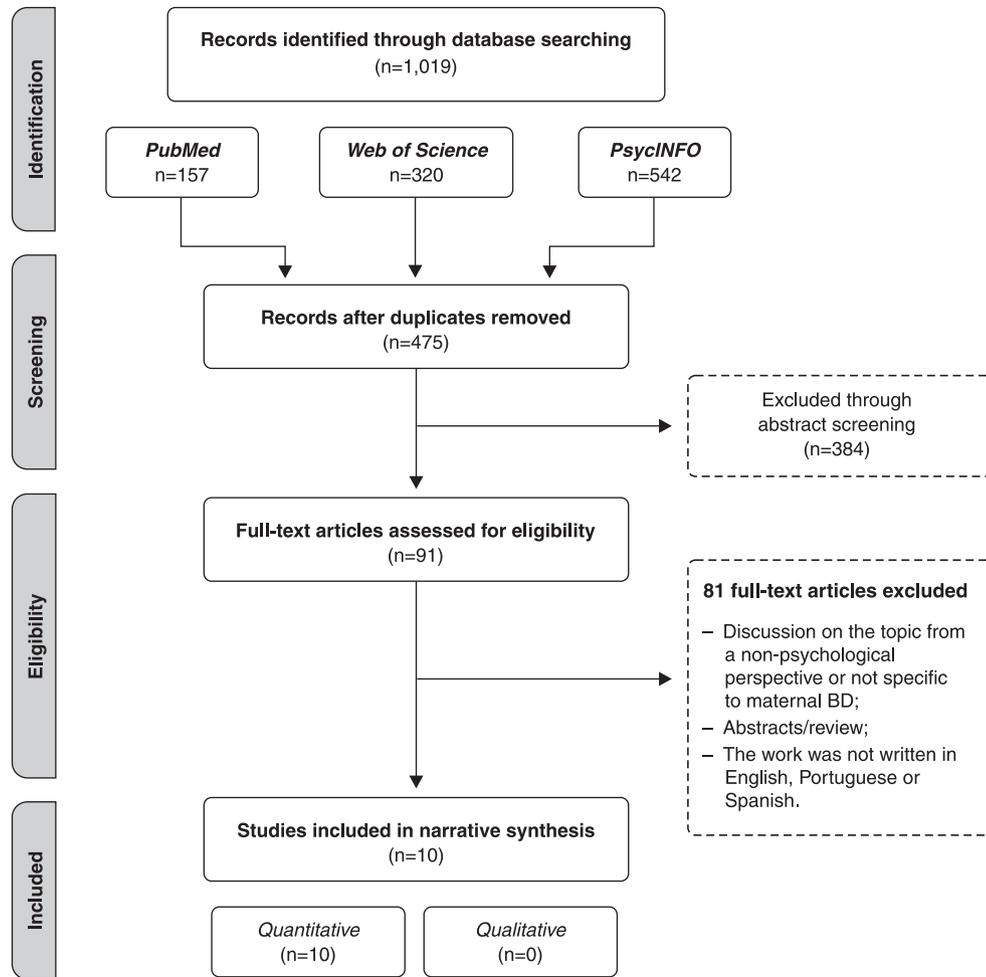


Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flow diagram. BD = bipolar disorder.

It should be emphasized that the CBCL is an inventory of symptoms that is particularly useful in screening and assessing the severity and response to treatment. It is not, however, a scale that makes diagnoses; therefore, it is impossible to say that 62.8% of the offspring of mothers with BD fulfilled the diagnostic criteria based on this scale alone. It can be said that they presented symptoms that indicated certain diagnoses.

Petresco et al.¹² found a high rate of disruption to core internal regulatory processes, as did Klimes-Dougan et al.,¹⁴ who examined risk patterns in offspring of women with BD. Their findings¹⁴ indicate that thought and internalization problems, such as anxiety and depression, withdrawal and depression, somatic complaints, externalization problems, and aggressiveness and rule violation, are more severe in the offspring of mothers with BD.

After applying the CBCL in four different periods of offspring development,¹⁴ the findings indicated the presence of deficits in self-regulation in these children. At first, these deficits were related to externalization problems; however, over time, they seemed to advance and compromise internalization processes, which favored the development of thought disturbances. The study suggests that the development of regulatory capacity depends on

the support that parents are able to offer, and that an early accumulation of externalization problems was a statistically reliable predictor of thought disorders and internalization problems at the end of 20 years.

Petresco et al.¹² also highlighted internalization and externalization problems. Higher rates were found through the use of the Youth Self-Report Social Problems (YSR), because children themselves would be better informants of these issues than their parents.

The CBCL was also applied in the study by Simeonova et al.,²⁰ which sought to investigate associations between temperament and behavior during childhood (mean age = 25.4 ± 4.9 months) of children of women with BD. It was applied together with the Early Childhood Behavior Questionnaire (ECBQ). These authors observed that the broad temperament dimension negative affectivity and the individual sadness and shyness scales of the ECBQ were positively associated with the internalization problems dimension of the CBCL. According to the authors, this was the first report in the literature to highlight the importance of negative affect and attention deficits, and suggested that, at the beginning of development, children of mothers with BD already demonstrate the markers of subtle temperament traits which may be linked to

Table 1 Quantitative studies on the psychological aspects of the offspring of mothers with BD

Author (country)	Design	Participants and settings	Assessment instrument	Results [†]	Quality* (%)
Petresco ¹² (Brazil)	Cross-sectional	Total = 149 n=43 offspring of mothers with BD; n=53 offspring of mothers with other psychiatric disorders; n=53 offspring of mothers without any psychiatric disorder	SCID; K-SADS-PL; CBCL; YSR; YMRs; WASI	Offspring of mothers with BD were 2.0 times more likely to have one or more axis I diagnoses (PR = 2.11 [95%CI 1.30-3.42] and p = 0.003) and 2.8 times more likely to have an anxiety disorder (PR = 2.83 [95%CI 1.39-5.78] and p = 0.004) throughout life than offspring of women without a mental disorder. Higher scores in the subscale of disruption to core internal regulatory processes and in the subscales of social problems, anxiety/depression and internalization problems.	75
Goldstein ¹³ (United States)	Cross-sectional	n=388 offspring of mothers with BD I or BD II	SCID; K-SADS-PL	History of anxiety and/or disruptive behavior disorders, as well as the presence of parental BD, were associated with an increased risk of bipolar spectrum disorder among offspring	80
Klimes-Dougan ¹⁴ (United States)	Cohort	Total=94 n=22 offspring of mothers with BD; n=42 offspring of mothers with MDD; n=30 offspring of mothers with no significant psychiatric or medical problems	CBCL; SCID; Interval SADS; GAS	Offspring of mothers with BD – Self-regulating deficits, tending toward the cascade for disruption to core internal regulatory processes; offspring of mothers with MDD – tending toward the cascade for internalization problems. Despite the risks, few resources are available for the systematic assessment and implementation of preventive interventions.	70
Moreno ¹⁵ (Brazil)	Case-control	n (case) = 34 women with type I BD; n (control) = 106 women (53 with minor mental disorders and 53 without psychiatric disorder)	SCID; K-SADS-PL; CBCL	Offspring of women with BD had higher rates of neonatal anorexia and reported more physical abuse (16.1%; p1/40.02); 33.3% suffered physical and/or psychological abuse	75
Johnson ¹⁶ (United States)	Cross-sectional	Total = 658 n=329 6-month-old babies; n=44 mothers with BD; n=244 mothers with MDD; n=41 mothers with axis I disorders	SCID; Coulbourn Instruments Model # V75-04	Infants of mothers with BD – increase in RSA, differences in psychophysiological regulation; infants of mothers with MDD and CTL – decrease in RSA. Current maternal depressive symptoms or exposure and stressful life events may reflect endophenotypic markers of psychopathological risk.	75
Doucette ¹⁷ (Canada)	Cohort	n=233 offspring of parents with BD	KSADS	Mother's neglect and offspring's emotionality were associated with risks for mood disorder (HR = 1.1; 95%CI 1.0-1.2 and HR = 1.7; 95%CI 1.0-3.1, respectively). Exposure time to parental BD interacted significantly with the offspring's emotionality to predict mood disorders (p = 0.01). The mother's perceived neglect was associated with high emotionality in offspring (p = 0.02).	70
Cullen ¹⁸ (United States)	Cohort	T1/T2/T3 = 167 offspring and 91 parents; T4 = 146 offspring; T5 = 136 offspring; T4/T5 = 115 offspring	SADS; GAS; IPDE; SNAP-Y; DICA-R; SCID-I; SCID-II	Offspring of mothers with mood disorders, especially BD, were at increased risk of diagnosis and symptoms of personality disorders in adolescence and early adulthood.	80
Narayan ¹⁹ (United States)	Cohort	n=61 married families with 120 adolescents	SADS-L; SCID	Mothers with BD – greater perpetration of interparental violence, but not victimization, than mothers who were depressed. Significant association among maternal BD, perpetration of violence, and adolescent aggression. Adolescent offspring of women with BD may be more vulnerable to being aggressive.	70

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Table 1 (continued)

Author (country)	Design	Participants and settings	Assessment instrument	Results [†]	Quality [‡] (%)
Simeonova ²⁰ (United States)	Cross-sectional	n=30 offspring of mothers with BD	ECBQ; CBCL	There was a positive association between the dimensions negative affectivity (ECBQ) and internalization problems (CBCL) through the sadness and shyness dimensions and a negative association through the sociability dimension.	75
Freed ²¹ (United States)	Cross-sectional	n=117 offspring	CBCL; Interview DSM-IV axis I	Higher rate of family conflict and lower rate of cohesion were associated with more intense symptoms of internalization and externalization in children. Lower family cohesion was associated with current mood disorders of offspring. The link between lower family cohesion and internalization symptoms was stronger for younger offspring than older ones.	75

95%CI = 95% confidence interval; BD = bipolar disorder; CBCL = Child Behavior Checklist; CTL = no history of axis I disorders; DICA-R = Diagnostic Interview for Children and Adolescents-Revised; ECBQ = Early Childhood Behavior Questionnaire; GAS = Global Assessment Scale; HR = hazard ratio; IPDE = International Personality Disorder Examination; KSADS = Kiddie Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version; MDD = major depressive disorder; PR = prevalence ratio; RSA = respiratory sinus arrhythmia; SADS-L = Schedule for Affective Disorders and Schizophrenia: Lifetime Version; SCID = Structured Clinical Interview for DSM Disorders; SNAP-Y = Schedule for Non-adaptive and Adaptive Personality – Youth Version; WASI = Wechsler Abbreviated Scale of Intelligence; YMRS = Young Mania Rating Scale; YSR = Youth Self-Report.

[†] Results with $p \leq 0.05$.

[‡] Quality assessed using the Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) checklist.

the emergence of later psychopathology or adaptive functioning.

Simeonova et al.²⁰ also highlighted that characteristics of difficult temperament at the beginning of development can serve as global risk indicators in a spectrum of internalization and externalization problems. The ECBQ frustration scale was significantly correlated with many CBCL subscales, and may be a marker of trait-related vulnerability in unaffected children of parents with BD. Another ECBQ scale that was significantly associated with several CBCL scales was shyness. This may suggest that children born to a mother with BD who present shyness, inhibition, and anxiety may be at increased risk of future development of behavioral problems.²⁰

These studies^{12,20} support the idea that there is continuity, over time, of temperament traits as one of the predictors of future psychopathology in offspring of women with BD. It is also possible to observe the evolutionary trajectory of these offspring temperament traits. This trajectory is characterized by global deficiencies in flexibility, frustration tolerance, inhibitory control, soothability, ability to follow daily patterns of rhythm, and negative affectivity.

Freed et al.,²¹ also applying the CBCL, argued that the problems of internalization and externalization are greater in offspring of mothers with BD in comparison to offspring of fathers with BD. These authors correlated the greatest family conflict and the lowest family cohesion with more intense symptoms of internalization and externalization in the offspring. Lower family cohesion was also associated with current mood disorders in the offspring. Moderation analyses indicated that the link between lower family cohesion and symptoms of internalization was stronger for younger offspring than older ones. Greater family conflict and current mood disorder were also associated in younger male offspring, but not in older men or women.²¹

Environmental risk factors for the offspring of mothers with BD

Another cluster of findings considers that the occurrence of maternal BD creates a stressful environment for the offspring, mainly during childhood. This stress refers to physical or psychological abuse, even if unintentional, suffered by the offspring. Examples include mothers with suicide attempts witnessed by their offspring, mixed feelings offspring may have regarding their mothers' manic episodes, and self-neglect. This familiar environment, at a more critical level, may contribute to the development of mood disorders among the offspring.

In the study by Moreno et al.,¹³ the CBCL was used in conjunction with the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL), an instrument that allows diagnoses to be made in childhood psychiatry studies. It was observed that the maternal care provided by women with BD is dysfunctional, and that the presence of this psychopathology can lead to poor care. This should be considered as an important environmental risk factor for offspring. The study suggests that having a parent with BD promotes a stressful environment in childhood and

found that, by symptoms alone, 33.3% of the offspring suffered physical and/or psychological abuse. In comparison to controls, only offspring with maternal BD witnessed suicide attempts by their mothers.

Doucette et al.¹⁷ investigated the impact of the environment on the lives of offspring of mothers with BD, with application of the Kiddie Schedule for Affective Disorder (K-SADS). Their findings indicate that exposure to parental BD early in life can be predictive of future mood disorder. However, the authors emphasized that the impact of early parent-child relationships, when only one parent has the disorder, and how this affects predictors remains uncertain. It was found that the mother's perception of greater neglect and the emotionality of the offspring were significantly associated with risk of developing a mood disorder. The duration of exposure to parental BD significantly interacted with the offspring's emotionality to predict future mood disorders. Furthermore, the mother's perception of neglect was associated with high emotionality of the offspring.¹⁷

These authors¹⁷ observed that the mother's perception of childhood neglect was a significant predictor of mood and anxiety disorders in the children. Mother's neglect persisted as the worst risk factor for mood and anxiety disorders, even after adjusting for the duration of exposure to parental illness early in life, offspring temperament, and stress.

Besides maternal neglect, an environment where interparental violence is perpetrated is significantly discussed in the studies included in the current review as a risk factor for aggressive behavior. The findings of these authors suggest that offspring can be particularly vulnerable to developing aggressiveness when growing up with a mother that commits this type of violence. The risk of aggression in the adolescents increased more than eighteenfold due to being offspring of mothers with BD and due to experiencing interparental violence during the previous year.

Doucette et al.¹⁷ and Freed et al.²¹ pondered that mothers with a lower propensity to establish stable relationships or to live with the biological father of their offspring also contributed to more psychological and behavioral problems among the offspring. These aspects suggest the relative absence of other caregivers in the family environment and, therefore, that offspring are more exposed to the effects of the attachment to mothers with uncontrolled symptoms of their psychiatric disorder.

Early interventions

Early family interventions were discussed in many articles as ways to avoid further psychological problems among the offspring of mothers with BD.

All the articles found indicate, as a clinical response to their results, that family interventions – including early intervention,^{20,21} psychoeducation, and/or monitoring of offspring – should be performed. Petresco et al.¹² highlighted the importance of a comprehensive approach that includes investigating the patient's family environment. According to these authors, offspring should be followed prospectively until the most likely age of onset of

psychiatric disorders, particularly mood disorders. This monitoring makes it possible to detect prodromal signs of these disorders and possibly minimize or prevent distress.

Regarding early interventions, Johnson et al.¹⁶ found a possible endophenotypic marker of psychopathological risk evident early in the development of the children of mothers with BD, prior to any clinical signs or symptoms. These authors studied respiratory sinus arrhythmia (RSA) in infants aged 6 months as a laboratory stressor paradigm to assess physiological reactivity to stress. They found increases in RSA in infants born to mothers with BD compared to infants of mothers with major depression and a control group born to mothers without psychiatric disorders. Infants of mothers with BD showed a maladaptive pattern of psychophysiological regulation in response to stress. This pattern was not explained by perinatal outcome, maternal depressive symptoms, or stressful life events, indicating a specificity.

The studies included in this review emphasized dimensional analyses regarding the need for the development of early interventions, focused on the offspring of women with BD.^{18,20,21} These analyses revealed that the offspring of mothers with BD presented elevated symptoms in all groups of personality disorders. They also presented an increased risk for these diagnoses to be made earlier, i.e., in mid-adolescence and early adulthood, when compared to offspring of mothers with unipolar depression or without psychiatric disorders.

Discussion

Despite the breadth of our inclusion criteria, the methodological designs of the studies did not vary widely. Half of the studies were cross-sectional, with a lower level of evidence; four are cohort studies; and only one is a case-control study. The small number of studies and their low evidence level the scarcity of scientific literature regarding personality/temperament features in offspring of mothers with BD. It also draws attention to the absence of qualitative studies, which are valued in the investigative field as providing insight into the experience of being a son or daughter of someone with BD.

It is important to highlight that some of the studies aimed to evaluate DSM-IV psychiatric diagnoses among the offspring of bipolar mothers, while other studies assessed the degree of mental suffering or other psychosocial issues that are not exclusively psychiatric. This observation was possible from the analysis of the instruments used, highlighting the importance of discussing the screening and the assessment of the severity of symptoms, as well as their changes over time, and what is the situation of the offspring regarding these changes.

Despite using different methodologies and evaluating different aspects, the included studies show that, at different stages of development, it is possible to identify vulnerability factors in the offspring of mothers with BD. According to the studies, these offspring seem to combine aspects that indicate the importance of early care for this at-risk population.

The present study highlights neuropsychological and endophenotypic factors in the offspring of mothers with

BD, as well as some emotional and psychological issues, which could be further investigated through the use of qualitative methods. There is a lack of qualitative research on this topic, which could provide significant contributions in listening to offspring and their needs. Regarding this scarcity of studies on the experience of living with a mother with mental disorders, Gladstone et al.²² highlighted the invisibility of these children within the social processes that shape their lives.

From the results of studies that used the CBCL, we observed that self-regulation deficits are common among the offspring of mothers with BD. Indeed, much of the development of self-regulation skills depends on the support that parents can offer. Mothers with BD may not satisfactorily respond to their offspring's self-regulation problems, thus contributing to deregulation of the mother-child relationship.

In this context, the set of the reviewed studies showed that the negligence of mothers with BD is widely described as associated with a certain degree of uncontrolled emotionality of the offspring, besides their biological risk factors for developing mood disorders. Maternal violence was also found as a specific, important contributing factor for the development of aggressive behavior of the offspring, instead of other psychopathological symptoms and conjugal violence between the parents in a broader way. However, these results should be interpreted cautiously.

Besides the negligence and aggressive behavior of mothers with BD posing as risk factors for their offspring's well-being, other factors probably also contributed to the increased risks of aggressive behavior or mood disorders among these offspring. Sociodemographic status (including low socioeconomic level and younger maternal age) and other aspects of early mother-child interactions were also cited in the studies, although none of them specifically evaluated these aspects.^{13,17}

Our systematic review found a high incidence of axis I disorders, corroborating what is widely discussed in the scientific literature about the offspring of mothers with BD.^{2-7,9,10,15} Regarding neuropsychological aspects, Klimes-Dougan et al.²³ found deficits in executive functioning, spatial memory, and attention in offspring of mothers with BD compared to offspring of healthy mothers.

Chang et al.,²⁴ in a study with offspring of parents with BD, associated certain temperament characteristics of the children with future psychopathologies. Using the DSM-IV criteria, these authors found psychiatric disorders in 52% of the participants, the most frequent being attention deficit hyperactivity disorder (28.3%), followed by anxiety disorder (15.1%), BD (13.2%), and depression (11.3%). These percentages exceed 52%, because some of the children presented more than one disorder. Gutt²⁵ also found a higher prevalence of diagnoses of attention-deficit/hyperactivity disorder and highlighted the higher prevalence of behavioral problems in the offspring of women with BD, in comparison to the offspring of mothers with schizophrenia, with conduct disorders, and with control children of healthy mothers.

Still regarding the temperament of children born to parents with BD, Farchione et al.²⁶ identified greater

hostility and irritability in comparison with a control group. Duffy et al.²⁷ observed a greater predisposition of these children to be easily distressed, afflicted, or worried. Chang et al.²⁸ found a decreased ability to adapt to new situations and to perform many activities, with difficulty in continuing with tasks, as well as a sad mood.

Maoz et al.²⁹ suggested that aggressiveness is a marked characteristic in preschool children of parents with BD. The findings of the present study also highlight aggressiveness among the externalization problems observed: in the study by Narayan et al.,¹⁹ this understanding comes from the idea that the offspring of mothers with BD are vulnerable to becoming aggressive, having grown up witnessing interparental violence.

These findings demonstrate the issue of family structure being affected by the presence of maternal BD, which creates a stressful childhood environment. Ellenbogen & Hodgins³⁰ found high neuroticism in parents with mood disorders, which, associated with inappropriate parenting practices and the creation of a stressful family environment, can cause psychosocial problems in their offspring. Chang et al.²⁸ observed that families in which one parent had BD presented less cohesion and organization and more conflicts than families without individuals with the disorder. Reinares & Vieta³¹ observed a mutual influence between the individual with BD and the family, emphasizing that the course of the disorder can be affected by family attitudes and its manifestations also have a great impact on the functioning and distress of the family.

Goldstein et al.³² associated family conflicts, hostility, and recent sexual abuse with a high risk of suicidal ideation in offspring of parents with BD. These authors suggest that offspring receive treatment that includes the management of suicide risk and axis I conditions, with individual interventions that can target excessive hostility and family interventions, aiming to reduce family conflict.

The present review presents data that reaffirm the need for family interventions, as highlighted in the study by Reinares et al.,³³ in which the authors state that family involvement should be secured as soon as possible and be adjusted to the needs and characteristics of each patient and their family members. This study suggests that family interventions can contribute to reducing the patient's risk of recurrence and their psychosocial and functional impairments, improving the health and well-being of all family members and even reducing and optimizing socioeconomic resources for the treatment of BD.³³

Roso et al.³⁴ highlight the benefits of psychoeducational interventions associated with the treatment of patients with BD, and suggest that this can be carried out in large, open groups, including patients, family members, and those interested in the topic, as a way to adapt this need to the Brazilian socioeconomic reality.

Accordingly, the inclusion of family members has become a necessary condition for the treatment of individuals with BD³⁵ and is recommended in the main guidelines for the management of this disorder.^{9,10} The family approach is a fundamental part of treatment and can be carried out through family guidance, psychoeducation, or family psychotherapy.³⁵ Petresco et al.¹² highlighted the importance of a comprehensive approach,

which includes the patient's family environment, and in which children should be followed prospectively up to the most likely age of onset of certain psychiatric disorders, particularly mood disorders, in order to check for prodromal signs and possibly minimize or prevent distress.

The findings of this review have clinical implications for the care of patients with BD and their offspring. Given our verification of significant harm to children's lives, services that work with the BD population must be adapted to provide adequate care. Support, psychoeducational, and/or psychotherapeutic groups can be important means of identifying individual needs for care, seeking to avoid late diagnosis of axis I psychiatric disorders as well as to prevent suicide attempts.

The limitations of this study are related to the exclusion of theses and dissertations on the subject and to restricting the search to articles published the last 10 years. Older articles could yet provide relevant information, considering that personality/temperament features can be timeless. Future studies may consider these data and look at new aspects, such as genetic and/or environmental issues.

In conclusion, the present study provides significant contributions to the scientific literature regarding the characteristics of the offspring of women with BD and the importance of this knowledge for multidisciplinary teams involved in the care of patients with BD. The complex family context to which the offspring of mothers with BD are exposed involves psychosocial difficulties and a lack of early interventions. It is therefore essential to develop original studies that broaden understanding of this phenomenon to create effective interventions directed toward these children. The factors identified in this review should be worked on with patients in order to provide specialized care to their offspring, considering the important implications of maternal disorders for the lives of these children, as identified in the present review.

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Disclosure

The authors report no conflicts of interest.

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