Parenting Behaviours in MDD and BD and Offspring Psychopathology *

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The offspring of parents with major depressive disorder (OMDD) and bipolar disorder (OBD) are at high risk for developing mental disorders. In addition to genetic factors, environmental risk, such as deficits in parenting, is purported to be associated with these negative outcomes. Despite this, a comparison between major depressive disorder (MDD) and bipolar disorder (BD) in terms of parenting behaviours and offspring psychopathology has not yet been conducted. Therefore, the aim of this review article is to inform further research by exploring parenting behaviours of parents with MDD and BD and offspring psychopathology. Parents with MDD and BD share several negative parenting behaviours including low levels of support or care, negative affect, low levels of structure and control. Mania, a symptom of BD, is accompanied by self-centeredness, poor judgment, high levels of impulsivity, and overinvolvement. Although we see some differences in the parenting behaviours between parents with MDD and BD, no differences have been found in family functioning and environment between the two disorders. Further, multiple specific parenting behaviours have been shown to mediate the relationship between parental MDD and BD and offspring psychopathology. Several areas of further research are discussed including the development of common conceptual framework and direct comparisons between MDD and BD.

Major depressive disorder (MDD) is one of the most common psychiatric illnesses causing great personal and economic burden for individuals, families, and society [1,2]. It is estimated that 10% to 15% of the general population will experience clinical depression during their lifetime [3]. Major depressive disorder (MDD) is a debilitating disease that is characterized by depressed mood, diminished interests, impaired cognitive function, and vegetative symptoms, such as disturbed sleep or appetite. MDD is more common in women than in men [4]. For instance, the lifetime prevalence of MDD among women is almost twice that of men [5]. This is an important consideration in the effects of MDD disorders on mothers' ability to parent as they are often the only or the primary parental figure. Further MDD is particularly more prevalent among both men and women who were divorced, separated, or widowed, as compared to those who were single [6] further complicating parental roles.

Bipolar disorder (BD), while much less common than MDD, affects about 45 million people worldwide [7]. BD is a chronic and debilitating mental illness characterized by extreme fluctuations in mood, from manic highs to depressive lows [8]. BD is accompanied by maladaptive personality traits, most predominantly neuroticism. BD is also accompanied by impaired psychosocial functioning such as adopting ineffective coping styles, specifically emotion-focused coping, a coping strategy in which individuals focus on reducing negative emotions as opposed to resolving the actual problem or stressor at hand [9,10,11] . Adults with BD also experience high levels of negative life events [12, 13] and tend to have ineffective coping strategies in dealing with stressful situations [10, 11]. These deficits in personality and psychosocial functioning related to BD can negatively affect parenting skills and abilities [9].

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Genetic factors play important roles in the development of MDD and BD, as indicated by family, twin, and adoption studies. Therefore, the offspring of parents with BD and MDD are at a higher risk for developing mental health disorders. Twin studies suggest a heritability of 40% to 50% for MDD, and family studies indicate a twofold to threefold increase in lifetime risk of developing MDD among first-degree relatives [14]. The offspring of depressed parents are three to four times more likely to develop a depressive disorder than children of non-depressed parents [15] Estimated heritability rates of BD are even greater than for MDD at 79 – 93% [16]. Cross-sectional and longitudinal studies of the offspring of parents with bipolar disorder (OBD) report up to 70% greater risk for any psychiatric disorder compared to offspring of healthy parents. Specifically, these studies demonstrated an elevation of mood disorders, anxiety disorders, neurodevelopmental disorders, and substance use [17, 18, 19, 20].

In addition to genetic factors, environmental risk, such as deficits in parenting, have been described as a dominant influence on the development of psychopathology in the offspring of parents with MDD (OMDD) and the offspring of parents with BD (OBD) [21, 22, 23]. Parenting style and parent–child interactions are typically negatively affected by MDD and BD [24, 25]. Positive parenting practices consist of parental warmth, support, positive affect, sensitivity and is associated with greater levels of self-regulation in children [26]. Contrarily, negative parenting comprises of hostility, neglect, excessive intrusiveness, and over-control [27]. Negative parenting can create a dysfunctional caregiving environment, which is a well-established risk factor for a broad array of mental disorders for the OBD and the OMDD across the lifespan [28, 29, 25].

Despite the importance of both conditions in the population and the evident role that parenting deficits in both disorders play in the development of offspring psychopathology, a comparison between MDD and BD in terms of parenting behaviours and offspring psychopathology has not yet been conducted. Therefore, to inform further research, this review article has the following aims: First, to shed light on the parental behaviours shared by both BD and MDD and the parental behaviours unique to each. Second, an examination of the psychopathology of the offspring of parents with BD and MDD. Lastly, an exploration of specific parental behaviours that mediate the relationship between parental BD or MDD and offspring psychopathology.

Similarities in Parenting Behaviours

Parents with BD and parents with MDD share several negative parenting behaviours including low levels of support or care, negative affect, low levels of structure and control.Low levels of support or care have been found in both parents with MDD and BD. For instance, Iacono and colleagues (2018) found that parents with BD provided less support to their offspring [21]. Specifically, the parents showed low levels of parental warmth or affection, nurturance, and emotional expressiveness as measured by the Parenting Dimensions Inventory [30]. Similarly, BD parents reported significantly lower parental care characterized by warmth and affection scores compared to healthy controls [31]. In terms of MDD, less supportive parental behaviours compared to healthy control have also been well documented. Cummings and colleagues (2005) found that parents with MDD showed less support, specifically, lower levels of warmth, nurturance, and greater levels of disengagement or un-involvement [32]. In addition, in a study on the effects of depression on parenting conducted by Wilson and Durbin (2010) [33], a decrease in warmth, sensitivity, responsiveness, and an increase in disengagement was found among fathers and mothers with depression. While it seems that both parents with BD and MDD show lower levels of engagement compared to healthy controls, it has been found that bipolar mothers tend to be significantly less

engaged in interaction than mothers with depression and well mothers [34].

A cardinal symptom shared by both BD and MDD is negative affect such as psychological distress, anxiety, depressed mood, hostility, and other unpleasant emotions [35, 36]. Therefore, as expected, negative affect towards children is common among parents with MDD and BD [37, 33]. For instance, parents with BD show high levels of criticism and hostility towards their children [38]. Criticism has also been reported in depressed parents [37]. Depression is significantly associated with more hostile parenting [39]. Parents with MDD and BD both show more irritability than controls [32, 40]. While comparing maternal critical or irritable behaviours between the two disorders, no significant difference has been found between mothers with BD and depressed mothers [34]. While both parents with BD and with MDD have been found to show negative affect towards their children, Inoff-Germain and colleagues (1992) have found that mothers with BD show more negative judgments, more negative affect, and had more negative reactions toward their children than mothers with MDD and mothers with no mental disorder [41]. Given these findings, it is evident that both parents with MDD and BD show signs of negative affect which can be considered a negative parenting trait. However, the research results on whether parents with BD or parents with MDD demonstrate more evidence of negative affect is mixed.

Parental structure, defined as organization, consistency, stability, and predictability [30] has been explored in parents with BD and MDD. Parents with BD have been found to provide less structure to their offspring, specifically, they are more likely than healthy control parents to provide low levels of organization, consistency, and stability in the home during middle childhood [21]. High levels of the trait neuroticism, a tendency to react with elevated emotionality to stressors, in parents with BD have also been hypothesized to elicit unstable and disorganized caregiving environments in middle childhood [13, 42, 43]. Parents with MDD show more unpredictable parental behaviours, such as inconsistent parenting, compared to healthy parents [32]. Inconsistent parenting can lead to unpredictable situations and feelings of confusion and insecurity in the OBD and the OMDD, especially if offspring are mostly uninformed about their parent's mental health disorder [44]. While low levels of structure are seen in both parents with MDD and BD, it is more characteristic of parents with BD as the disorder causes extreme mood swings [45].

The findings on parental control, defined as frequency and type of disciplinary strategies, are mixed. The literature on control in parents with MDD is scarce. However, lax control (i.e., carelessness, or negligent control) has been found in parents with MDD in one study by Du Rocher Schudlich et al. (2008) [46]. Most of the literature states that parents with MDD are inconsistent and struggle with effective discipline [37, 47, 48]. Parents with higher levels of depressive symptoms reported lower levels of parental monitoring and more inconsistent discipline [49]. Several studies found BD parents scored lower on control compared to controls [50, 21], while others found that they scored higher on control compared to controls [51, 45, 52]. Yet, other studies have reported no significant differences in BD-parented families on control compared to healthy participants [52].

The similarities seen in both disorders are likely due to the occurrence of depressive episodes shared by the two disorders. The parenting behaviours of mothers and fathers who have MDD or BD may reflect correlates of their depressive symptoms, such as physical and emotional unavailability, unresponsiveness, confusion, self-absorption, negative or sad affect, hopelessness, and irritability [53]. Such characteristics particularly may impair parents' communication with their children as well as their success in setting limits and granting autonomy to their children. Research indicates more negative communication styles in bipolar parents compared to controls

[54] and parents with other, non-bipolar, psychopathology [41].

Differences in Parenting

We see few differences in parenting behaviours between parents with MDD and BD. The main differences can be explained by the manic episodes seen in BD which are absent in MDD. Major depressive disorder is unipolar, meaning that there are no manic episodes or symptoms while bipolar disorder includes symptoms of both depression and mania. While symptoms of depression lead to deficits in parenting abilities, mania presents its own challenges to parenting. In the manic phase, mothers report being very self-centred, exhibited poor judgment, and behaved in ways that made them poor role models during their manic phases [55]. Since manic episodes are characterized by high levels of activity and impulsivity, this can translate into unpredictability and inconsistency in parenting [55]. Joyce (1984) found that within the bipolar group, those who reported high overprotection had more hospitalizations for mania, suggesting that this parenting dimension may be associated with the severity of the manic symptoms [56].

Despite the evident negative parenting behaviours accompanying both MDD and BD, offspring of mothers with BD have been found to display more comfortable and happy interactions with their mothers than the offspring of depressed mothers [34]. Although we see some differences in the parenting behaviours between parents with MDD and BD, studies have found no differences in general on family functioning and environment between the two disorders [46, 57, 58].

OBD Psychopathology

The OBD are at significantly increased risk for developing a wide range of severe psychiatric disorders and accompanying dysfunction [59]. A study conducted by Vandeleur and colleagues (2012) exploring mental disorders in the OBD and the OMDD found that rates of mood and anxiety disorders were elevated among the OBD (34.5% any mood; 42.5% any anxiety) [60]. Specifically, mood disorders and especially BD were distinctly elevated among the OBD compared to the offspring of parents without BD [60]. Parental concordance for bipolar spectrum disorders was associated with a further elevation in the rates of mood disorders in offspring (64.3% both parents versus 27.2% one parent) [60].

In a systematic review by Stapp and colleagues (2020), the OBD did not differ significantly in the prevalence of psychiatric disorders from offspring of parents with unipolar depression [34, 58, 61]. Evidence of increased rates of disruptive behaviour disorders and attention deficit hyperactive disorder (ADHD) in the OBD has also been found [62]. However, the recent findings of Birmaher et al. (2009) showed that increased rates of disruptive behaviour disorders and ADHD in the OBD are attributable to general parental psychopathology or other related factors rather than to parental mood disorders [63].

Mediators Between Parental BD and Offspring Psychopathology

Several parental factors have been found to mediate the relationship between parental BD and offspring psychopathology. Parental control emerged as the strongest mediator of the relation between parents' BD and offspring psychopathology in a study done by Iacono and colleagues (2018) [21]. However, a previous study with this sample found that both low support and low structure, but not control, were associated with higher scores for internalizing and externalizing

problems [13]. Low levels of structure provided by parents in middle childhood mediated the relation between having a parent with BD and elevated rates of internalizing and externalizing difficulties in the OBD during middle childhood [21]. Low structure in parenting has also been seen to increase the risk for later high-risk sexual behaviours and poor interpersonal functioning in the OBD [13, 42, 43]. High levels of over-reactivity, activation, and chaos, which can be categorized as low structure, in the household are particularly associated with emotional difficulties in children [25]. Structure provided by parents in middle childhood has been shown to influence cortisol reactivity in adolescence among the OBD [13, 50]. In turn, persistent abnormalities in individuals' biological sensitivity to stress have been associated with an increased vulnerability for the development of an affective disorder [64, 65]. Relative to control offspring, the OBD tend to experience more frequent and severe stressful life events [43]. Among those who eventually develop a mental disorder, negative life events often precede onset [66, 67]. Radke-Yarrow and colleagues (1993) found that children of bipolar mothers developed more problems later in childhood than children of unipolar (depressed) mothers and suggested that children may be more vulnerable to psychosocial stresses created by bipolar illness as they grow older [68]. To conclude, low control, low structure, and low support exhibited by parents with BD, along with stressful life events often accompanied with having a parent with BD have been found to mediate the relationship between parental BD and offspring psychopathology.

OMDD Psychopathology

A study conducted by Vandeleur and colleagues (2012) exploring mental disorders in the OBD and the OMDD found that rates of mood and anxiety disorders were elevated among OMDD (25.5% any mood; 44.6% any anxiety) as compared to those of controls (12.6% any mood; 22.8% any anxiety) [60]. Moreover, the rates of depression did not differ between the OBD and the OMDD [60]. In addition, parental MDD independently predicted alcohol substance use disorder among older offspring in this research [60].

Pathways from Parental MDD to Offspring Psychopathology

The OMDD are at increased risk for psychopathology and internalizing and externalizing disorders more generally [69]. Several parental factors have been found to mediate the relationship between parental MDD and offspring psychopathology. In a study done by Lau and colleagues (2018), lower maternal and paternal warmth was independently associated with internalizing problems in the OMDD [31]. Lower maternal warmth alone predicted externalizing problems [31]. Specifically, Lau and colleagues (2018) found that in general, mother's internalizing psychopathology explained lower levels of affective practices which includes behaviours such as affection and warmth [31]. Those practices could lead, in turn, to an increase in children's maladaptive symptoms [70]. Du Rocher Schudlich and Cummings (2007) found that disrupted parenting, specifically parental rejection, lax control, and psychological control, by mothers and fathers partially mediated the relations between maternal and paternal dysphoric mood and children's internalizing and externalizing problems [71].

In a large, longitudinal, population-based study of Canadian youth ages 10 to 15, children's reports of both positive parenting behaviours (i.e., nurturance and monitoring) and negative parenting behaviours (i.e., rejection) mediated the relationship between parental depressive symptoms and children's internalizing (e.g., anxiety, depressive symptoms) and/or externalizing (e.g., aggression, noncompliance) problems [72].

Low warmth and high levels of parental criticism or intrusion have been found to directly influence depressive symptoms in the general population of youth [73, 74]. In addition, negative parenting style is mirrored in negative interactions in conflict situations with their children that, in turn, were found to be associated with higher self-reported symptoms of depression in youth [75].

Future Directions

The findings of the present review article have several potential implications. First, the high rates of psychiatric disorders in the OBD and the OMDD emphasize the need to pay particular attention to the offspring of parents with mood disorders. The results may have important implications for theories of abnormal development among the OBD and the OMDD. Lastly, the present findings not only emphasize the importance of parental practices as a means of mental illness prevention but also highlight the importance of addressing issues of control, support, structure, and negative affect in the home environment of the OBD and the OMDD.

This review article found that parenting behaviours demonstrated by both parents with MDD, and BD seemed to fall under three constructs: structure, support, control. However, the terminologies and measures varied. Therefore, there is a need for a common conceptual framework for parenting behaviours.
Few studies examined the impact of parenting behaviour of mothers compared to fathers with MDD or BD on offspring outcomes. Studies on resilience in the offspring of parents with mood disorders were few and far between. It would be beneficial to explore these areas of research further, especially as they can inform intervention and possibly reveal protective factors.

Families with one or more depressed parents often have additional factors that generally impose risk for children, such as substance use disorders, poverty, exposure to violence, minority status, cultural and linguistic isolation, and marital conflict, which interfere with good parenting qualities and healthy child-rearing environments [49]. Therefore, it would be beneficial to analyse the extent to which each of these additional factors interferes with parenting abilities if they work independently or as an additive or interaction with the effects of depression in parents.

Given the overwhelming evidence supporting parenting behaviours as a mediator in the relationship between parental BD or MDD and offspring psychopathology [21, 75], gaining more information on the mechanism behind how parenting behaviours explain this relationship would be valuable. Potential mediators between negative parental behaviours demonstrated by parents with MDD and BD and offspring psychopathology could be further explored such as stress, emotional dysregulation, and attachment. Negative parental behaviours have been found to negatively impact family functioning and the home environment in general which have been implicated in offspring psychopathology [45]. Therefore, it may be useful to focus on family functioning rather than parenting behaviours.

Conclusion

Parents with MDD and parents with BD share several negative parenting behaviours including low levels of support or care, negative affect, low levels of structure and control. While symptoms of depression lead to deficits in parenting abilities for both disorders, mania presents its own challenges to parenting as it is accompanied by self-centeredness, poor judgment, high levels of impulsivity, and overinvolvement. Although we see some differences in the parenting behaviours

between parents with MDD and BD, no differences have been found in family functioning and environment between the two disorders. Regardless, the OMDD and the OBD are at significantly increased risk for developing a wide range of severe psychiatric disorders and accompanying dysfunctions. Further, multiple specific parenting behaviours have been shown to mediate the relationship between parental MDD and BD and offspring psychopathology.

Further research based on a common conceptual framework for the study of parental behaviours and outcomes is needed. Research directly comparing MDD and BD as well as comparing mothers and fathers would be advantageous. Lastly, future research could examine factors related to resilience in offspring, specific mediators, and family functioning to better inform researchers, health care providers, and the general public on effective parenting skills that protect offspring from mental health problems.

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