Perinatal Mood and Anxiety Disorders during the COVID-19 Pandemic in Canada

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Abstract: According to emerging research, Perinatal Mood and Anxiety Disorders (PMADs) have increased during the SARS-CoV-2 pandemic. The psychological stress associated with the pandemic has made new mothers more vulnerable to mental health issues. A number of factors have been shown to predispose mothers to this, including, financial, relational, seclusion, changes to perinatal care and fear of the virus. Research has also identified protective facts, including sleep, support and exercise. Given the sequelae of untreated mental health issues, impacting the entire family unit, it is important that naturopathic doctors are aware of this and have strategies to support mothers in the perinatal period.

Introduction

The current global pandemic due to SARS-CoV-2 has led to an increase in the risk of Perinatal Mood and Anxiety Disorders (PMADs) for new mothers. Previously, PMADs occurred in up to 20% of new mothers,[1] making it the most common complication of the perinatal period. This illness has both social & neuroendocrine risk factors that mediate its development. In Canada, death by suicide is one of the leading causes of maternal mortality in the postpartum period.[2] Emerging research demonstrates that the impact of the pandemic is leading to an increase in maternal mental health issues.[3-5] Clinicians should be aware of this increased risk, as well as how naturopathic medicine can support mothers in the perinatal period.

The current pandemic of novel SARS-CoV-2 was first identified in Wuhan, China but has since spread internationally.[6] Perinatal populations have been identified as one of the vulnerable populations that are affected by the virus, due to the immune-compromised state of pregnancy.[7] The perinatal population is more prone to viral respiratory infections, such as influenza, severe acute respiratory syndrome (SARS) and Middle East Respiratory syndrome (MERS).[8,9]

The fears surrounding this rapidly spreading virus, coupled with the lack of definitive knowledge regarding vertical transmission, assessment & management of perinatal women infected with COVID-19, has resulted in increased stress among pregnant women.[7,9] Parenting challenges have arisen, with many experiencing changes to income, employment, and childcare needs[10] The United Nations Population Fund recently estimated that unwanted pregnancies have increased sharply during the lockdown and that women are at a considerably higher risk of domestic violence.[11] As such, there are both psychological & socioeconomic stressors presenting for parents, that have all been associated previously with increased parental mental health needs.[12]

Recent research has identified that the mental health repercussions of the COVID-19 pandemic on the perinatal population represent a major public health challenge.[13-15] Targeted & timely care is needed to prevent mediate adverse mental health outcomes.[16]

Perinatal Mood and Anxiety Disorders

Perinatal Mood and Anxiety Disorders (PMADs) are one of the most common postpartum complications affecting 10–20% of perinatal women.[17-22] In addition to their negative impact on maternal health, PMADs can have long-term adverse effects for children, including delayed cognition, socio-emotional development and poor mental health outcomes later in life.[23-24] Mothers naturally experience a range of emotions in the days following labour, with almost 85% of new mothers reporting symptoms of what is colloquially called the 'baby blues'.[25] The 'Baby blues' are defined as periods of weepiness, anxiety or irritability that occur 3-10 days after birth.[25] This can last for a few hours to a few days. During this time, mothers also need rest, proper nutrition, hydration and support. The hormones that supported pregnancy (estrogen & progesterone), drop significantly from supra-physiologic levels, down to their non-pregnant state. Low blood sugar and lack of sleep likely also contribute to these changes in mood. All women go through an expected period of adjustment during the postpartum time. However, it is important to recognize what is 'normal' during this time and what represents a perinatal mood and anxiety disorder. Table 1 details the range of perinatal mood and anxiety disorders.

Reasons for the Increase in PMADs

Research from 2016 identified four major categories of stressful life events that contributed to the development of perinatal mood & anxiety disorders.[26] The effects of the pandemic have made most of these factors part of daily life. The research identified that financial,

relational, trauma-related or emotional stressors all increased the risk of perinatal mood & anxiety disorders. Many families have experienced changes to their financial security, as workplace restrictions have altered to accommodate pandemic measures. Relational issues are also likely, given both the social distancing measures and the increased likelihood of conflict within the home with 'stay-at-home' orders. Financial issues & balancing work with childcare, may also contribute to relational stressors. Anxiety around the COVID-19 pandemic is common for many pregnant women—possibly compounded if those close to them have been affected by the virus. In addition to the global pandemic of the virus, the effects of containing the spread may have resulted in an unplanned sequalae of widespread perinatal mental health concerns.

Social support is one of the most significant protective factors for postpartum mothers from PMADS.[27] As such, pregnant women are often at increased risk for psychological problems due to social distancing.[28] In addition to this, mothers are reluctant to visit their doctors or hospital for fears of acquiring the virus while at a healthcare facility. This fear may result in an increase in pregnancy-related complications, due to a lack of prenatal or postpartum care[9] and these complications have been associated with an increase to PMADs[29]. To make matters worse, the widespread inaccurate or dis-information being spread from social media and other sources has resulted in increased anxiety for many pregnant women, in North America and abroad. In one international study, exposure to inaccurate information was found to increase anxiety in the general population which can be inferred to contribute to the severity of PMADs.[30]

Due to the social restrictions that the pandemic has placed, most prenatal & breastfeeding classes have been cancelled or moved online. This has resulted in many mothers not acquiring the information they need to prepare for labour, newborn life or their own postpartum healing. Considerable research has indicated that breastfeeding education helps not only the rates of breastfeeding but mother's experiences with feeding their infant.[31] If mothers are unable to access prenatal or postpartum breastfeeding support, mothers may instead find that they are unable to breastfeed successfully. This has also been associated with an increase in PMADs, as the expectation to breastfeed or the discomforts associated with poor breastfeeding (mastitis, clogged ducts, poor latch etc.) can affect a mother's mood.[32]

Similarly, prenatal classes that discuss the labour process have been associated with better labour outcomes. Informed decision making has emerged as an important aspect to reduce unnecessary interventions, improve birth outcomes & increase the feelings of a positive birth experience.[33] As outlined in Table 1, risks for developing postpartum PTSD include a real or perceived trauma during the birth experience, which may occur if a woman is not informed about her birth or the decision-making process. Given the current pandemic, mothers are less likely to be able to attend prenatal classes, thereby missing the chance to speak with their providers on the topic of the labour process. Prenatal classes are also often a space for new mothers to make connections, and these changes have made this less available. It is too early as of yet, to have data regarding the efficacy of delivery of prenatal & breastfeeding classes online.

Similarly, from a clinical perspective, many mothers are reporting grief about the loss of an event that was meant to be celebrated with loved ones. Baby showers, family introductions, and celebrations. have all been altered for women in the perinatal period during this pandemic, due to the social distancing measures. For many mothers, this has resulted in grieving the experiences they thought they would have, changing long-held expectations surrounding this special life event.

Along with this grief, many mothers are also seeing an increase to their workload at home. This 'mental load' or the unequal division of household labour, which disproportionately affects mothers has increased substantially with the changes due to COVID-19. Clinically, throughout this pandemic, many mothers have reported a further increase to the mental load: grocery shopping (with changes to sanitizing & safety), buying diapers, childcare changes, often while balancing career & coordinated schooling for older children. The increase in mental load could lead to more stress for mothers during this time.

Effects of PMADs on the Family Unit: previous evidence

Research from other crises has also demonstrated that there are long-term implications for children of mothers who experienced high levels of prenatal stress due to a disaster.[34] In 1998, the ice storm crisis that affected Quebec resulted in power losses for 3 million people for up to 40 days. Researchers at McGill University in Montreal then had women who were pregnant in the most affected areas during that crisis complete questionnaires to ascertain their exposure to stress. They also assessed 89 of their children at 5 ½ years of age for standard tests of IQ and language ability. The researchers found that children exposed to very high levels of 'objective' stress during their mothers' pregnancies had poorer results on both IQ and language tests. Given the ubiquitous nature of these stressors, concerns of the long-term effects this will have on a children's mental and cognitive health are warranted.

High levels of prenatal stress can also lead to changes in the maternal immune system, increasing inflammation and the risk of prenatal infection.[35] There is speculation that epigenetic changes to the offspring can occur due to the dysregulation of the hypothalamic pituitary adrenal (HPA) axis, which can change glucocorticoid levels (cortisol and CRH) in the mother.[36] A systematic review of neuroimaging studies recently showed a significant association between that prenatal maternal anxiety and/or depression are changes to brain structure and function in children, suggesting long term effects of PMADs on child neuro-development.[37] There are also suggestions that the effects of post-partum depression can be felt by the entire family.[38] Research prior to the onset of the pandemic has indicated that perinatal mood and anxiety disorders can affect both parents and children—including their physiology and relationships.[38]

Current Evidence in PMADs

Although research is only beginning to emerge on the aftereffects of the COVID pandemic on PMADs, recent studies have demonstrated an increase to perinatal mental health symptoms. One

study, published in the *Journal of Affective Disorders*, looked at the prevalence of maternal depressive and anxiety symptoms using an online convenience sample.[39] Researchers also identified both risk and protective factors, as well as current mental health service usage and barriers to treatment. In this study, 641 mothers of children 0-8 years completed an online survey. Results of this survey indicate that 33.16% of mothers with children 0-18 months, 42.55% of mothers with children 18 months-4 years and 43.37% of mothers with children 5-8 years old are experiencing clinically relevant depression. This represents an almost doubling in maternal mental health rates, compared to pre-pandemic reports.

Another study, through the University of Alberta found that prior to the pandemic, 15% of women self-identified with depression, whereas during the pandemic, this number rose to 40.7% of self-identified depression on the EPDS.[40] Similarly, 29% of women pre-pandemic reported symptoms of moderate to high anxiety, compared to 72% during the pandemic. Interestingly, they also noted that physical activity appeared to be protective factor against both anxiety and depression for those women meeting the recommended 150 minutes of moderate intensity physical activity.

A large pre-publication study at the University of Calgary has identified a similar trend. Of the 1987 mothers that participated, they found there was a 22% increase for depression and a 150% increase in feelings of isolation.[41] This study noted that both sleep and support were protective factors for mental health—however, unlike the previous noted study, they did not find an association with exercise.[41] This study also detailed a number of other parameters that were contributing to perinatal distress, such as job loss (18.3%), feelings of loneliness (92.9%), strain to their relationship (22.5%), changes to prenatal care (89%), and worries of virus harming unborn baby (29.8%).[41]

A recent study published in *Contemporary Family Therapy*, looked at the issue of perinatal mental health and COVID-19 pandemic through the biopsychosocial lens.[42] This report also detailed recommendations for how providers can change their care for pregnant and postpartum mothers to be better supports during this time. This study indicated that it was found that almost half of pregnant mothers were not spoken to by their provider about the impacts COVID-19 would have on their perinatal care.[42] Their recommendations include that all providers who work with pregnant and postpartum patients ensure that they fully communicate the changes caused by the pandemic, expectations around care and discuss perinatal mental health at every visit.[42] This article also makes recommendations for ensuring that telemedicine or virtual support are made available for mothers.[42]

Current Issues in care for PMADs In Canada

Unfortunately, even without the barriers created by the pandemic, accessing perinatal mental health care in Canada is challenging. It's estimated that even prior to the onset of the COVID pandemic, only 15% of new mothers who experienced a PMAD received professional care. Canada, unlike many other developed other countries, does not have appropriate perinatal mental health screening guidelines, or readily available access to treatment. In the United Kingdom, the *National Institute for Health and Care Excellence* (NICE) has guidelines detailing the clinical management and service guidance for perinatal mental health.[43] The guidelines depict the principles of care and treatment, as well as information regarding screening and assessment and provision of interventions in this population.[43] Similarly in Australia, in 2017, the *Centre of Perinatal Excellence* developed national guidelines for perinatal mental health.[44] These guidelines provides a reliable standard for healthcare professional providing care to women in the perinatal period by summarizing the current available evidence—something that Canada does not have. Guidelines such as these are critical for helping mothers access screening, diagnosis and treatment of perinatal mental health concerns. As it is currently in Canada, stigma of perinatal mental health coupled with lack of both public and professional understanding of perinatal mood and anxiety disorders, leads many mothers to be unable to access treatment. Without appropriate screening, the onus of accessing care is left to mothers. With further barriers caused by the pandemic, there is an increased likelihood that Canadian mothers with PMADs will not receive treatment.

There is a high cost to leaving mothers untreated for perinatal mental illness. Implications of this affect both mother and child, as well as financially burden the Canadian public health care system. As the restrictions placed by the current pandemic leave mothers not only more vulnerable to perinatal mental illness[14] but also less able to access treatment, this represents a massive financial cost to our already overburdened health care system. Current research has demonstrated that 74% of mothers reported issues with accessing other healthcare aside from prenatal visits due to the pandemic. As researchers have noted, 'a detailed mental health crisis program should be developed by introducing innovative strategies like tele-consultation services to give psychological assistance to pregnant mother to deal with secondary mental health challenges related with COVID-19'.[47] However, while both federal and provincial governments have announced funding for other mental health initiatives since the beginning of COVID-19 emergency measures, perinatal mental health has to this point not been addressed. Given the severity of downstream implications of untreated perinatal mental health, this lack of attention could bring on dire consequences for mothers, children & society.

Clinical Strategies

Clinicians, however, should still be aware of this increased risk of PMADs with the onset of COVID-19, as well as how naturopathic medicine can support mental health for mothers in the perinatal period. Current research has addressed three potential ameliorating factors for perinatal mental health specific to the post COVID-19 lockdowns: support, exercise & sleep.[41]

Discussing with patients the clinical guidelines supporting exercise and sleep during pregnancy are interventions that naturopathic doctors are well-equipped to provide. According to 2019 guidelines

for exercise from the *Journal of Obstetrics and Gynecology Canada*, pregnant women should accumulate at least 150 minutes of moderate-intensity physical activity weekly, over a minimum of 3 days a week, incorporating both aerobic, resistance and pelvic floor training to achieve clinically relevant health benefits and reductions in pregnancy complications.[49] Discussing with patients exercise safety for their pregnancy, recommending specific exercises targeted to their needs and providing guidance around this are all important aspects to address in appointments.

Although many aspects of typical perinatal supports are unavailable for mothers with provincial emergency measures in many provinces, continuing to discuss social supports with patients could be helpful. Naturopathic doctors can help to outline the professional supports a mother may need postpartum, such as lactation consultants, perinatal mental health professionals etc., so that a new mother is more likely and able to access them. As well, discussing safe supports by family, such as meal or grocery drop off, supports for older children or other needs., could also help alleviate some of the mental load felt by new mothers.

Although these three recommendations are specific to what the current research has seen to be helpful, naturopathic doctors should be aware of other approaches to treatment for perinatal mood and anxiety disorders. Research indicates that hormonally, thyroid function[50,51] particularly can contribute to PMADs, specifically to postpartum thyroiditis, an autoimmune issue that can arise postpartum. Nutritionally, a number of micronutrients have been identified, including, low iron[52], vitamin D[53], vitamin B6[54], vitamin B2[55], zinc[56,57], selenium[55,58] and DHA levels may also contribute to PMADs. As such, a thorough nutritional diagnostic work-up is indicated for new mothers, as part of their naturopathic postpartum assessment. As well, the expected changes to hormones in the initial postpartum time may cause susceptible mothers to experience mood changes, however this relationship has not been shown to be causal.[59]

Research also indicates some other dietary factors that can be helpful. The addition of probiotics, specifically those containing *Lactobacillus Rhamnosus* HN001, resulted in lower anxiety & depression scores postpartum.[57] As well, although there is conflicting evidence on healthy diet, specifically sufficient consumption of vegetables, fruits, legumes, seafood, milk and olive oil is beneficial for preventing PMADs.[61] These interventions are known to be otherwise very helpful for pregnant women, and are likely discussions naturopathic doctors should have with their patients prenatally.

Conclusion

The current COVID-19 pandemic has led to a substantial increase in psychological distress for those in the perinatal period. Pregnant and postpartum mothers have previously been shown to be at a greater risk for mental health issues, and the changes associated with the pandemic have led to a substantial increase in anxiety and depression, according to the most current research. Many factors influence the development of perinatal mood and anxiety disorders, with some identified factors related to the pandemic being: financial, relational, seclusion, changes to perinatal care, and fears of the virus. Some research has identified sleep, support and exercise to be protective factors against perinatal mental health issues—however this preliminary research is conflicting.

The far-reaching implications of untreated perinatal mental health issues, including the impacts on the mother, the child and the societal financial burden, make this crisis urgent. Given the substantial increase in perinatal mental health issues already seen, it is critical that Canada provides targeted support to mitigate the continued negative sequalae of perinatal mood and anxiety disorders.

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About the Author

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