

# Post-Partum Psychosis – A Case Report

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## Abstract

The patient (NS) is a 5 month post-partum 32 year old woman, G2P2, who presented to the Cork University Hospital (CUH) Emergency Department by ambulance. She presented to the ED distressed, anxious and confused. Her family history is significant for depression. Her personal history is significant for long periods of separation from her spouse and an increased workload and chores list at home, leading to high levels of stress and anxiety. Her past medical history includes two births, both caesarean and non-complicated. However, she contracted a SARS-CoV-2 infection prior to her most recent delivery. Her eldest child is 6 years old and her most recent is 5 months. Prior to NS's deterioration, she was described as level-headed, dependable, quiet, and overall an extremely competent mother. Her physical examination was non-contributory. Finally, on December 5th 2022, her condition improved. Her MSE showed a tidy appearance, non-paranoid body language, sequential speech, reactive mood, logical and non-paranoid thoughts, good insight about psychosis, excellent cognition, and low risk for harm to herself or others. In this case report, the biopsychosocial aspects of the patient's recovery are discussed.

## Case Background

NS is a 32 year old married immigrant from an African country. She is a stay-at-home mother who arrived by ambulance from a grocery nearby, where she had called the gardai to report that she was being followed. She reported feeling that she and her children were unsafe. The examination and a collateral history with the patient's spouse revealed that over the last week she was becoming more paranoid about the safety of herself and her children and believed that her husband was poisoning their children's meals.

Psychiatric assessment in the ED revealed heightened emotions, persecution delusions, paranoia, distress, and anxiety. NS was also very confused as she didn't recognize doctors she had seen previously and kept asking for them to show her their identification. She calmed within hours and accepted a sandwich and water, but refused to eat anything unless it was given to her in a sealed package. On November 28th 2022, the patient awoke at 7:30 AM and asked to leave. The medical team tried to calm her but she became agitated and security needed to be called. She refused to have her vitals checked, rejected all food and water, and she self-removed her cannula. The patient was subsequently involuntarily admitted to St. Stephen's Psychiatric Hospital in North Cork on November 28th

2022 for inpatient care.

Upon admission to St. Stephen's, the patient reported difficulties sleeping for four nights prior to admission. She also reported unintentional weight loss and muscle weakness. NS denied thoughts of self-harm and suicide. She also did not believe that her thoughts or actions were being controlled by others. Memory was impaired as patient reported feeling very forgetful. Concentration was also impacted as patient reported difficulty with focus. At this time, all the patient wanted was to return to her children so that she could protect them as she sensed danger.

According to the collateral history, NS's spouse noticed a change in the patient's personality one week prior to admission to the ED. She was acting very confused, holding the children too tightly and was acting very aggressively toward family members. The two days prior to admission, she would not let her spouse feed the children because she was worried he was poisoning the baby food. He also reported that NS hadn't slept in the four nights prior to admission and instead spent her time in bed staring at her mobile device. Her spouse stated that normally "she is very stable and is a brilliant mother".

On December 5th 2022, the patient was interviewed. At this time, she reported no difficulties with sleep and had been obtaining seven to eight hours per night in the previous three days. She also reported no issues with her appetite, memory, concentration or muscle strength. NS denied thoughts of self-harm and suicide, and a belief that her thoughts and actions were being controlled by an external force. At this time, the patient did not stress a deep desire to return home to her children and wanted to do her part to help herself heal. According to the patient, the stressors that made her feel paranoid and anxious, which lead to a lack of sleep, included the combination of the recent birth of her second child five months prior (increasing the workload at home), covid concerns, noticeable changes in her spouse's personality, her spouse's previous family (ex-wife and three children) becoming too involved in her marriage and family life, and concerns about "new strangers in the country".

Her family history is significant for depression. Her mother was diagnosed with depression years ago and is currently managed with medications. The patient reports her mother's personality to be emotionally unstable and her relationship with her father to be difficult with little communication. The patient's 20 year old brother was recently diagnosed as bipolar managed with medications.

NS's 52 year old husband is healthy physically, employed in a work plant and works abroad. According to the patient, he has become more grumpy recently.

The atmosphere at home while growing up was not always warm. Her parents sometimes argued because her father often became belligerent after drinking alcohol. NS would not admit to any physical abuse, neglect, or trauma during childhood. The family had low income, and they often struggled with finances. Despite the difficulties in her parent's relationship, they remained married and the patient remained close to her mother.

NS has no past psychiatric history or previous episodes of self-harm or suicidal ideation. Medications that were administered in the hospital that have been discontinued since include Alprazolam, Paracetamol, Midazolam, and Lorazepam. At the time of history taking, NS was taking olanzapine at night.

On general inspection, the patient was reactive and well-dressed in a white shirt and black pants. All physical examinations were normal. A urinalysis did not reveal any abnormalities.

## Discussion

NS presented with persecution delusions approximately 5 months after giving birth to her second child. The likely diagnosis is postpartum psychosis (PPP) due to the temporal proximity to child birth. However, there are some potential diagnoses that must be considered as this is the patient's first psychotic episode. The differential diagnoses in order of likelihood include a first presentation of schizophrenia, bipolar 1 relapse with paranoia, and organic causes of psychosis. The differential diagnoses can be excluded based on the history and laboratory findings. The diagnosis along with the aetiological factors, specifically the perpetuating and protective categories, are used to formulate a care plan for the patient. The most significant perpetuating factors include the patient's relationship with her spouse and his first family, and her cultural isolation. She was separated from the cultural influences of her African society leading to limited exposure to Irish customs, traditions, lifestyles and languages. To reduce the impact of these factors on the life of the patient, psychological and social management is important, which includes the home based crisis team and counselling services. Unlike the perpetuating factors, the protective factors must be strengthened for a better prognosis. These include beneficial social connections, medications to treat the persecution delusions, and monitoring by the psychiatric team for relapse. The patient's prognosis is excellent as treatment was initiated early. In addition, a good prognosis is more likely if the care plan is followed. However, there is an increased likelihood of recurrence in subsequent pregnancies.

Globally, PPP is a very rare form of postnatal depression, but it has serious risks and complications including maternal death<sup>7</sup>. It is characterized by confusion, intrusive thoughts, hallucinations, delusions often involving the children, and paranoia<sup>1</sup>. NS developed symptoms five months post-partum, but most cases occur immediately, within days to the first six weeks after birth. The condition is often misdiagnosed, mismanaged, or missed entirely by both obstetricians and psychiatrists due to stigma, lack of knowledge and difficulty in recognition of symptoms<sup>8</sup>. This led me to consider the risk factors that exist for PPP and what methods can be used to determine the correct diagnosis.

As PPP is very rare, it would be important to identify pregnant populations that are increasingly susceptible to development of this condition. Some of the known risk factors for postpartum psychosis include personal or family history of bipolar disorder, prior episode of PPP, and sleep disturbances<sup>8</sup>. According to the literature, personal history of bipolar disorder is the strongest risk factor for developing PPP<sup>9</sup>. However, a retrospective cohort study of 116 women who experienced episodes of mania or depression with psychotic features at least six weeks postpartum showed only 33% had a previous psychotic episode and of these only 1/3 were previously diagnosed with bipolar disorder<sup>10</sup>. NS is likely to be similar to the 66% of patients in this study that did not have a previous psychotic episode and did not have a history of bipolar disorder.

The relevance of family history to the development of PPP might be related to genes. Studies have shown that an MTHFR C677T variant influences folate metabolism and could be implicated in both postpartum depression and PPP<sup>11</sup>. More research is required to completely uncover and identify the genes that impact the development of PPP. NS's family history is significant for depression with her mother, and bipolar disorder with her brother. She has a strong family history for risk factors associated with PPP.

Sleep loss is a common occurrence in the postpartum period due to significant changes in the new mother's lifestyle and daily routine. A cross-sectional study on women with bipolar disorder showed that women who had previously experienced manic episodes due to sleep loss were twice as likely to experience an episode of PPP in the future (OR = 2.09, 95% CI = 1.47-2.97,  $p < 0.001$ ) compared to women who did not report sleep loss and manic episodes<sup>12</sup>. Interestingly, this association was not discovered for postpartum depression ( $p = 0.526$ ). NS reported sleep disturbance was a significant precipitating factor for her condition. The importance of good sleep hygiene especially in the postpartum period should be highly stressed during visits to medical professionals.

There has been some research into two potential risk factors for PPP including pre-eclampsia and primiparity. One Danish cohort study including 400,717 primiparous women with a singleton delivery between 1995 and 2011 demonstrated a higher risk for first-onset psychiatric episodes during the first month in the postpartum period for these women [IRR

2.93, 95% confidence interval (CI) 2.53-3.40]<sup>13</sup>. In addition, pre-eclampsia increased this risk (IRR 4.21, 95% CI 2.89-6.13). Furthermore, women who had both pre-eclampsia and a somatic co-morbidity had the highest risk of psychiatric episodes during the first three months of the postpartum period (IRR 4.81, 95% CI 2.72-8.50). Pre-eclampsia and primiparity were not relevant to NS's current history, but they are worth considering as reminders that additional risk factors are still being discovered.

After acknowledging the existence of specific risk factors, the correct diagnosis can be ascertained using screening tools and additional psychosis-related questions. According to a publication in 2018, there is no screening for antenatal depression in Ireland and there is no data indicating the prevalence rates of depression for patients admitted to Irish obstetric services<sup>14</sup>. Postpartum depression can be screened for during the first visit after birth, both formally with a screening tool such as the Edinburgh Postnatal Depression Scale (EPDS) or informally with questions directed towards the patient regarding their mood and overall mental health. The EPDS was originally developed in the United Kingdom and is now used globally in several countries to screen for symptoms of maternal depression by assessing emotional experiences of the patient over the past seven days using ten Likert-scale items<sup>15</sup>. The original validation study showed 9 out of 10 post-partum women who were diagnosed with depression by a psychiatrist were correctly identified by the EPDS in a blinded comparison. The EPDS does not specifically address psychotic symptoms, thus it would be important to include questions during history taking from the patient and family such as: (1) Is this the patient's first psychiatric presentation; (2) Does she have a history of depression, mania or both?; (3) Is there family history of bipolar disorder; (4) Does the patient use any drugs; and (5) Have there been any thoughts of harming herself or the child? In summary, acknowledgement of the various risk factors associated with PPP, and consideration of EPDS and screening question results might be useful to aid in the correct diagnosis of PPP during routine post-partum appointments.

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