Functional Neurological Disorder in the perinatal period: a systematic review

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Introduction

Functional neurological disorder (FND) affects women disproportionately (around 70% of patients).

It affects mostly women of childbearing age, representing a substantial proportion of women followed in FND clinics.

Hence, **pregnancy is a common theme during consultations for FND patients.**

Pregnancy introduces a cascade of physiological changes in a woman's body, impacting neurobiology and hormonal balance, and triggering important physical strains.

The perinatal period can be a particularly vulnerable time for new-onset FND due to specific psychosocial stressors of this period.

Increased risks of trauma, adjustment to parenthood, sleep deprivation and pain, all of which are known to increase dissociation perilabour, can potentially act as both predisposing and precipitating factors of FND.

Little is known about perinatal FND limiting the amount of information that can be provided to patients.

Moreover, **there is a lack of guidance in obstetric and mental health services on how to best provide care for patients developing perinatal FND**.

Aim

In this systematic review, we aimed to describe the existing published literature on perinatal FND, including any evidence for proposed mechanisms, recommended investigations and therapeutic approaches.

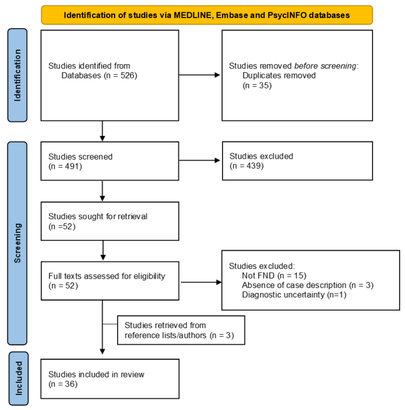
Methods

- We searched Medline, PsycINFO and Embase databases from inception to July 2022 using subject headings and free text terms combining FND and the perinatal period.
- Inclusion criteria comprised studies of any design reporting any cases of FND occurring during the perinatal period (between conception and 12 months post-partum).

Table 1. Search terms

"conversion disorder" OR "functional neurological disorder" OR hysteria OR dissociative or psychogenic OR hysteric* OR "medically unexplained" OR somatic OR somatoform OR "functional movement" OR "functional motor" OR "Psychogenic Nonepileptic Seizures" OR non*epileptic OR pseudoseizure OR "dissociative seizure" OR "dissociative motor" OR "somatoform disorders"	**AND**	pregnancy OR pregnant OR gravid* OR puerper* OR labour OR labor OR epidural OR cesarian OR perinatal OR postnatal OR "post natal" OR "C-section" OR "cesarian section" OR peripartum OR postpartum OR childbirth OR obstetric/ OR parturition/ OR "perinatal care" OR "postnatal care" OR "prenatal care" OR antenatal

Figure 1. PRISMA flowchart.



Results

Thirty-six publications describing 43 patients (34 case reports and two case series were included in our review (Figure 1).

Dates of publication ranged from 1950 to 2022.

The median age of reported cases was 29 years old.

Included cases comprised **six FND subtypes**: dissociative seizures (n=23), motor weakness (n=11), movement disorders (n=4), speech disorders (n=3), dissociative amnesia (n=3), and visual symptoms (n=2)(Figure 2).

Onset of FND

Thirteen (30%) patients had FND previous to conception.

In the remaining thirty patients, new-onset perinatal FND started **mainly during the third trimester, labour and post-partum.**

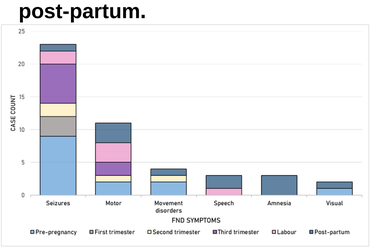


Figure 2. Stacked bar graph sowing the six FND phenotypes during the perinatal period, and timing of onset.

Comorbidities

16% had a history of obstetric or gynecological complications.

Twenty-one (49%) patients had a neuropsychiatric history, including a history of mood and anxiety disorders, and post-partum depression.

Sixteen (37%) cases had a history of adverse life events including abuse and distress.

Birth and delivery

Data on birth outcome were available for 21 (51%) babies, and all but two were healthy term babies.

Delivery type was available for 19(44%) of the cases (caesarean sections n=10, and vaginal deliveries n=9, three of which were instrumentalised).

Course of FND symptomatology

In those 13 women whose symptoms commenced pre-pregnancy, symptom trajectory was variable. For 10 of these women, symptoms worsened during pregnancy, and all experienced partial improvement or complete remission post-partum. In two cases, symptoms continued unchanged throughout pregnancy, and one improved during pregnancy, with a relapse thereafter.

For the 30 cases with new-onset perinatal FND, only five were known to have persistent symptoms at last known follow-up (seizures, foreign accent syndrome, dissociative amnesia, visual and motor symptoms), and many resolved spontaneously.

Main data for individual phenotypes

About half of the women with functional seizures were prescribed anti-seizure medications or intravenous medication, and three were admitted to intensive care.

Once started, medication was difficult to stop due to fears of seizure worsening and disagreement with the FND diagnosis, both by patients and their families.

Perinatal-onset functional weakness was mainly reported during labour and post-partum, and in 64% symptoms occurred after epidural or spinal anesthesia (5/2 respectively). Most of them recovered, five of which spontaneously.

Functional speech disorders (n=3) and dissociative amnesia(n=3) occurred in women with higher rates of adverse life events, distress, and concerns over baby's health immediately post-delivery.

Data is insufficient to allow conclusions about functional movement disorders or visual symptoms during the perinatal period to be drawn.

Conclusions and future directions

Known precipitating factors for FND, including pain, surgical and medical procedures are likely relevant for FND during the perinatal period.

Studies linking perceived lack of autonomy or dissatisfaction with care during labour, sleep deprivation, fatigue, hormonal changes, and adjustment to new parenthood with perilabour dissociative experiences (including altered time perceptions and derealization) are perhaps relevant to a subset of perinatal FND presentations.

Adverse events were present in nearly half of the cases of perinatal FND, in line with literature supporting adverse events as a risk factor for FND.

Misdiagnosis of perinatal FND during pregnancy can be dangerous, and women may be needlessly exposed to other risks such as intravenous medications and admissions to intensive care units.

These cases demonstrate the strikingly limited literature on perinatal FND, but this review provides a tentative starting point for well-designed cohort studies.

Future research is needed to help women with FND plan pregnancies and deliveries, in close articulation between neurological, psychiatric and perinatal teams.

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