

Long term effects of childhood trauma and abuse: Narrative on functional neurological disorder

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Abstract

Functional neurological disorder is a condition in which a person experiences physical symptoms that cannot be fully explained by a medical condition. In Pakistan, domestic violence as well as emotional, physical and sexual abuse in children are prevalent. Despite legal and social support for victims, stigmatisation regarding seeking psychological help complicates the challenge. Some of the research culminated that patients with neurological disorder reported high level of sexual abuse and trauma. The symptomatology of functional neurological disorder is being ignored in Asian countries due to indigenous factors like poverty, lack of information on reporting abuse, poor law-enforcement and victim blaming. Functional neurological disorder can be manifested in various ways in the human body, such as blindness, paralysis, dystonia, swallowing difficulties, difficulty walking, motor symptoms affecting limbs, voice production, problems in sensory functions, problems in cognitive function, psychogenic non-epileptic seizures and even dementia, whereas differential diagnosis is established after screening for organicity. The common risk factors of functional neurological disorder may include psychosocial stressors, family history of functional neurological disorder, and significant life changes. It is critical to understand the disorder in reference to predisposing risk factors, cultural context, comorbidities and gender specification to diagnose and treat functional neurological disorder in time so that better intervention protocols could be devised to treat it efficiently.

Keywords: Functional neurological disorder, Psychological trauma, Child abuse.

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Introduction

Abuse, whether physical, sexual or emotional, can lead to trauma, which in turn can result in the development of functional neurological disorder (FND). It can be

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manifested in various ways in the human body, such as blindness, paralysis, dystonia, swallowing difficulties, difficulty in walking, psychogenic non-epileptic seizures and even dementia.¹

The symptomology of FND may also manifest as a result of childhood sexual abuse, often leading to poor treatment outcomes. According to a study conducted on patients of FND, 70.3% people had suffered from sexual abuse and 64.1% people reported recent traumatic life events.^{2,3} Adults are not the only ones affected by FND as cases of children and adolescents have also been reported.²

Childhood trauma and abuse have been reported to be significantly higher in patients with FND.² However, the FND criteria presented by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) excluded the specific diagnostic criteria of the patient's association with conflicts or any stressors, and gave more importance to the positive clinical features, such as functional leg weakness, but this change has not been fully welcomed by mental health practitioners because this disorder is a condition that lies at the intersection of psychiatry and neurology, and is not properly comprehended.^{4,5} It is essential to understand the link between abuse and FND because many patients with this disorder have a history of traumatic events. However, it is important to note that not all cases of FND are solely caused by trauma and abuse as research findings have been inconsistent.⁶

In addition, South Asian countries have experienced significant political and social upheavals in recent decades, including war, terrorism and natural disasters.⁷ Despite this complexity, understanding the potential connection between trauma, abuse and FND can assist clinicians in identifying and treating patients with a history of traumatic events effectively.

Trauma can be categorised as events that are directly experienced by an individual, witnessed happening to someone else, or happened to a loved one.⁸ One study also shed light on childhood maltreatment which increased vulnerability to mood disorders. Exposure to childhood maltreatment can lead to child stunting and other biological vulnerabilities.⁹

A case study conducted a detailed analysis of mild

traumatic brain injury through electromyography (EMG), diffusion tensor tractography (DTT) and transcranial magnetic stimulation, which showed that the patient was suffering from FND as she was afflicted with severe arm weakness. The patient was suffering from motor weakness due to the conversion disorder.¹⁰

Sensory and motor seizures are the most common symptoms of the patients with FND.¹¹ These symptoms should be addressed carefully, and elaborative intervention should be planned to treat the symptoms of FND. Young individuals exposed to trauma and experiencing post-traumatic stress disorder (PTSD) often present with complex psychiatric issues, heightened vulnerability, and substantial functional challenges.¹²

A lack of understanding and acceptance of their psychological symptoms will lead the patients towards vulnerabilities.¹³ FND can be cured properly with appropriate diagnostic procedures, good provider-patient communication, and a specific guided management plan for addressing FND symptomatology.¹⁴ FND patients exhibit neurocognitive impairments, such as a significant deficit in the information processing speed. Their neurocognitive functioning is also compromised and cognitive behavioural therapy (CBT) effectiveness will be compromised with neurocognitive impairments and complications.¹⁵

Child maltreatment is a significant global public health concern that can lead to severe and long-lasting negative effects on physical and mental health as well as psychosocial development.¹⁶ Recent studies conducted in Pakistan have shown a strong connection between child maltreatment and the emergence of psychological symptoms in the subsequent stages of life. One of the researches reported that parent-to-child-maltreatment in the childhood phase led to the development of depressive symptoms later in the adolescent period.¹⁷ It is evident that their mental health is being compromised, and childhood maltreatment made them vulnerable and they were more prone to psychological manifestations of the symptoms.¹⁸

In many medical practices, a significant proportion of outpatient consultations are related to FND. It is essential to distinguish functional disorders from structural and psychiatric conditions, although they should not be regarded as diagnosis of exclusion. It is important to note that successful recovery from functional disorders is facilitated by establishing positive relationships between patients and healthcare practitioners.¹⁹

In India, studies have shown that child sexual abuse was mostly reported in girls aged <18 years at a frequency

ranging from 4% to 41%.²⁰ Besides, over 100 children were sexually assaulted every day in India in 2018 despite strict laws.²¹ Different countries have different levels of childhood trauma-prevalence due to different cultural and socio-economic factors, and other variations.²²

In Pakistan, a survey done by a mainstream media house in 2019 showed that 7 children were sexually abused every day.²³ Several South Asian countries lack efficient policies, laws, plans, programmes, and other measures to tackle mental health issues in their respective communities. As a consequence, mental health problems are often disregarded and stigmatised, and resources and infrastructure to aid those affected by such issues are insufficient, and providing timely and better treatment becomes a challenge.

The current narrative review was planned to explore the existing literature on the relationship of trauma and abuse with FND in low-income countries, particularly in Pakistan. Ultimately, the goal of the review was to increase understanding and awareness of the critical link, and to provide recommendations for improving prevention and treatment efforts in these regions.

Materials and Methods

The narrative review comprised search on Google Scholar, Pubmed and ResearchGate databases for relevant studies. The search was conducted with key words, including neurological disorder, functional, psychological trauma, child abuse, and psychological stressors.

The studies included were from the Asian populations with FND, and explored its association with childhood abuse and trauma. Studies related to FND without any linkage to abuse and trauma were excluded, and so were those published in any language other than English. Studies about abuse without the explanation of the manifestation of FND and dissociative symptoms were also excluded.

Results

Of the 1-3 studies initially identified, 4(3.9%) were analysed in detail.²⁴⁻²⁷ Of them, 3(75%) studies had been conducted in Pakistan, while 1(25%) was conducted in India. The studies employed a mix of analytical, cross-sectional, quantitative and qualitative research methodologies (Table).

Discussion

The narrative review aimed at shedding light on the need for early identification and intervention of FND cases having experienced abuse or trauma in Pakistan and other South Asian countries. The review also shed light on the stigmatisation and the stereotypes that are linked with the

Table: Study characteristics.

Author & Year	Type of Study	Method	Results
Farooq, 2016 ²⁴	Analytical	n=80, Females met criteria for FND OF DSM-5. Childhood abuse interviews were conducted to measure the extent of childhood trauma, while the Bermond Vorst Alexithymia Questionnaire, DSM Diagnostic Criteria Checklist, and Childhood Abuse Interview were used to assess alexithymia.	Among the participants, n=36 individuals reported experiencing childhood trauma and physical abuse was the most commonly reported type of trauma. The study also found a significant relationship between conversion disorder and alexithymia and childhood sexual abuse being a predictor of alexithymia.
Naz & Kausar, 2019 ²⁵	Quantitative	n= 150 female's adolescents diagnosed by the functional neurological disorder were approached from the psychiatric units of three hospitals in Lahore.	Results of the study childhood abuse is the significant predictor of the functional neurological disorder especially in girls.
Dar & Hassan, 2016 ²⁶	Cross-Sectional	Study was being conducted in Pakistan where they selected female patients of functional neurological disorder and the age bracket was 18 to 40 years. The scales that were being used were dissociative experiences scale, traumatic experiences checklist.	Emotional and sexual abuse was the significant predictor of the dissociation and functional neurological disorder.
Bammedi, 2021 ²⁷	Qualitative	n=50 patients were admitted to the department of psychiatry that were recruited in the study.	The manifestation of the symptoms of functional neurological disorder were characterized by psychosocial stressors.

RCT: Randomised controlled trial, N: Total number of patients, M: Male, F: Female, Int: Intervention, Con: Control, PCI: Percutaneous coronary intervention, CABG: Coronary artery bypass graft, CI: Confidence interval, HR: Hazard ratio, IU: International units, CVD: Cardiovascular disease, HPLC: High-performance liquid chromatography.

sexual abuse, especially in Pakistan. The abuse issues are not being addressed properly where there is the cultural stigmatisation, and it leads to the manifestation of FND symptoms. The findings of the studies conducted in Pakistan disclosed that during the coronavirus disease-2019 (COVID-19), women had to face physical violence as well as sexual abuse.²⁸ It referred to the "horrifying global surge", and stressed that women were prone to sexual violence and abuse.

The previous criteria in DSM-IV Text Revision (TR) of FND has been changed in DSM-V, making a traumatic/psychological incident before the onset of FND symptoms part of the FND diagnostic criteria. However, the change in the diagnostic criteria does not exclude the fact that individuals suffering from any trauma will not develop FND later in life. Therefore, by not excluding it as one of the major causes of FND, the current review aimed at assessing the prevalence of traumatic incidents with FND in Asian countries. The reviewed articles were a combination of cross-sectional studies as well as qualitative and quantitative research. The studies highlighted the importance of comprehensive assessment of psychological and social factors in the intervention of the FND. The diverse range of studies offered a comprehensive understanding of the complex interplay between the abuse, trauma and FND.²⁴⁻²⁷

The studies from Pakistan²⁴⁻²⁶ addressed the challenges associated with childhood sexual abuse due to cultural stigmatisation. These studies focussed on childhood physical and the emotional abuse, and emotional neglect that lead to the manifestation of FND symptomatology. Childhood trauma and abuse is the most significant type of trauma associated with FND patients. It focuses on social, cultural and environmental factors that contribute to the development of the FND.

The study conducted in India²⁷ found that the majority of FND patients were children and young adults (74%), females (62%), students (46%), married (54%), and from nuclear families (78%) and rural backgrounds (62%). In terms of socioeconomic status, the majority of patients (66%) belonged to the middle class. Motor symptoms were the most frequently reported presentation (84%) with pseudo seizures.²⁹ These findings provided valuable insight into the demographics and clinical characteristics of patients with conversion symptoms, which can inform the development of appropriate interventions and treatment approaches.

Studies in Pakistan suggested that childhood abuse and parental rejection could be the leading cause of FND. The findings revealed a significant positive correlation of FND with childhood physical abuse, emotional abuse and neglect.²⁵ One of the major reasons for not finding the relationship between sexual abuse and FND was the patients' unwillingness to report sexual abuse due to cultural stigmatisation and stereotypes. The fear of cultural stigmatisation in Pakistan is one of the major reasons that these issues are not addressed properly.³⁰

Recent studies, including epigenetics, biological markers, cognitive psychology and neurobiological mechanism of repressing traumatic incidents, also support that physical symptoms serve as potential protective defence mechanism in the face of stressors. Therefore, neuroscientific findings support the existing theories of psychological and neurological explanation on account of FND.³¹

There could be various triggering events related to FND that vary from traumatic injury to drug side effects. Even some neurological illnesses can cause symptoms of FND that are further treated by physical/occupational therapy

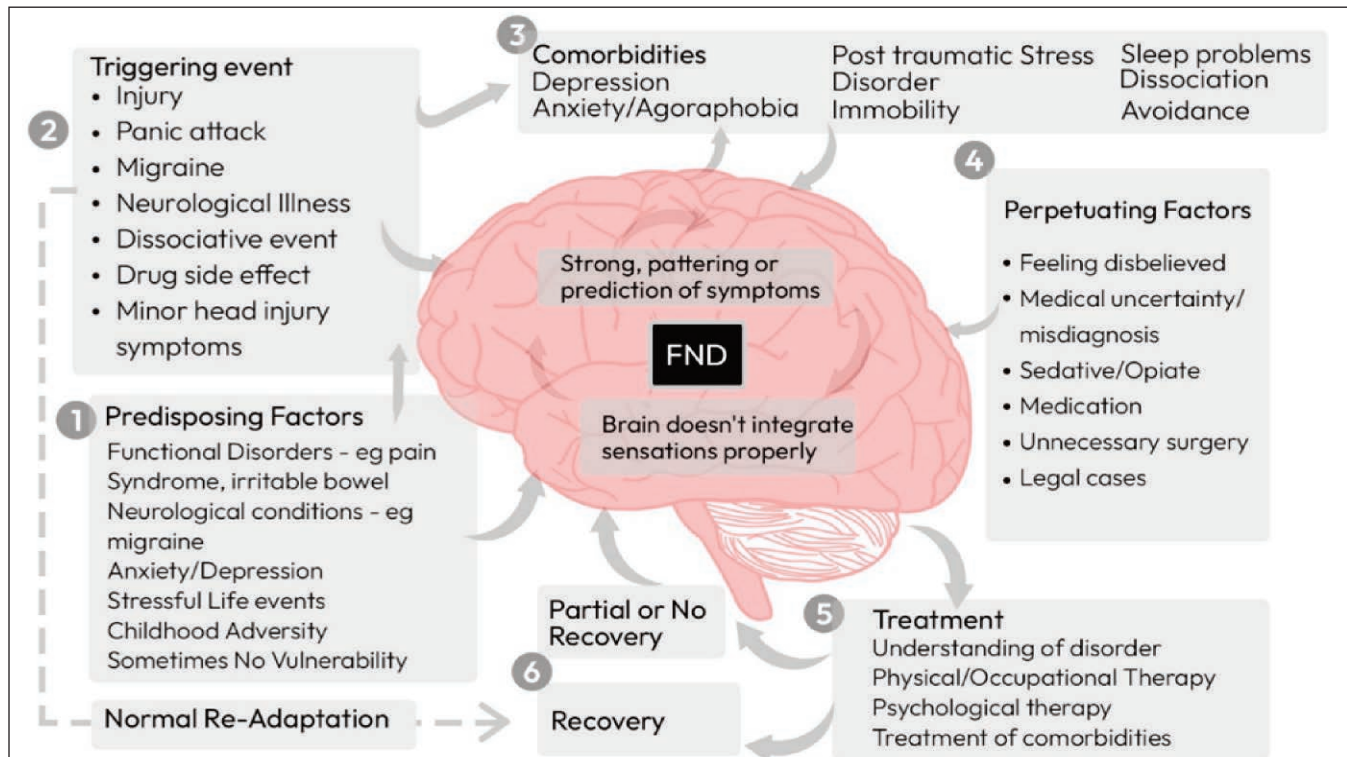


Figure: Factors relevant in the development of functional neurological disorder (FND).

as well as psychological therapy. The notion, according to the stress diathesis model, suggests that biological susceptibility along with early life adversity and later life trauma can precipitate FND.³² In certain cases, individuals show normal re-adaptation or readjustment, which means they have shown full recovery. There are various factors perpetuating the disorder for a long period of time, such as medical uncertainty or misdiagnosis, as it can also lead individuals affected by FND towards spending a lot of their money to get the wrong treatments which is a waste of time and resources. In third world countries, like Pakistan, this is highly common, and can lead to medical malpractice. Unnecessary surgeries can also perpetuate FND in patients and certain sedative/opiate medications can also be the reason for it. There are various comorbidities of FND, such as PTSD, depression, anxiety/agoraphobia, dissociative symptoms and sleep problems.³³ The summarized predisposing and precipitating factors are elaborated in figure.

Another notion summarises that individuals with FND diagnosis are more likely to be victims of emotional neglect than traditionally emphasised physical and sexual abuse, such as incestuous experiences, multiple forms of physical abuse, and longer duration of sexual abuse, than those who do not have the disorder.³⁴

The current narrative review has its limitations owing to

insufficient number of studies on FND conducted in South Asian countries, especially in Pakistan.

It is suggested that more studies on FND in Pakistan should be conducted to shed light on childhood maltreatment that cause psychological symptoms later in life.

Conclusion

The prevalence of FND is significantly high in Pakistan, and abuse and trauma have been identified as FND predictors. Despite the alarming prevalence rates, there is still a lack of awareness and understanding surrounding the role of abuse and trauma in the development of FND. Individuals who have experienced abuse are often reluctant to talk about their experiences. The stigmatisation is perpetuated around the surroundings of Asian countries. It is necessary that healthcare professionals, policy-makers and the whole community recognise the menace of abuse, and address the consequent psychiatric conditions. Interventions should be designed to provide support, including psycho-education, counselling and therapeutic interventions, to those who have experienced abuse and trauma. By breaking the silence around abuse and trauma, and by providing appropriate care and support, we can improve the quality of life of FND patients.

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Author Contribution:

UI: Conceived the idea, drafting, sorting inclusion and exclusion, proofreading.

AK: Writing sections of review, literature search, reviewing, editing, data extraction.

KF: Writing sections of review, literature search, reviewing, editing, data extraction.