CONVERSION DISORDER: EPIDEMIOLOGY, SYMPTOMS AND MANAGEMENT

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KEYWORD:
Cognitive behavioural therapy; Conversion disorder; Dissociative disorder; Electroencephalogram; Functional Neurological Disorder; Non-epileptic seizures

ABSTRACT

Conversion disorder is also known as Functional Neurological Symptom disorder or Dissociative disorder. Conversion disorder is largely defined as a psychiatric illness in which symptoms and signs affecting voluntary motor or sensory function cannot be explained by a neurological or general medical condition. Symptoms are believed to be either caused or exacerbated by psychological factors such as conflicts or stress. Quite a number of research works have looked extensively into adequate understanding of this disorder.

Conversion disorders are very common but most often misdiagnosed by primary health workers. This is largely due to the typical presenting complaints of neurological symptoms rather than psychiatric symptoms. Conversion disorders are manageable once an accurate diagnosis is made.

Despite the multitude of studies that have been done concerning understanding conversion disorder, knowledge gaps still exist. There is a need for further insights concerning the appropriate therapeutic modality for each patient, predictors of response, dose and duration of various treatment approaches and the value of combination therapy. This can very well be achieved by further research works.

This article discusses the epidemiology, symptoms and management of conversion disorder. This review pursuits to explain the extent and scope of conversion disorders, highlighting its epidemiological features, clinical characteristics, management and prognostic factors. Materials used for this writeup were largely from medical journals and published articles on pubmed, google and google search.

INTRODUCTION

The connection between mental and physical symptoms is evident in conversion disorders. The interest in the study of conversion disorder by medical practitioners has undergone a revival in the past decade after a steady decline in interest since its peak at the turn of the 20th century.

Conversion disorder is also called Functional neurological symptom disorder[1] and classified as a dissociative disorder[2]. It is defined as a psychiatric illness in which symptoms and signs affecting voluntary motor or sensory function cannot be explained by a neurological or general medical condition[3]. Symptoms are believed to be either caused or precipitated by psychological factors such as conflicts or stress.

The term conversion disorder was coined by Sigmund Freud, who hypothesized that the occurrence of certain symptoms not explained by organic diseases reflect unconscious conflict, with the word conversion referring to the substitution of a somatic symptom for a repressed psychological conflict[4].

The term Dissociative, implies compartmentalization or detachment of neurological functioning from normal awareness on account of the apparent disconnect between neurological function and awareness by the patient of these symptoms[5].

The aetiology of conversion disorder has been observed to involve psychological as well as biological factors and neurological factors. Psychodynamically, its symptoms have been explained to be as a result of unconscious conflict between a forbidden wish of the patient and his or her conscience. The conversion symptoms symbolically represent a partial wish fulfilment without the individual's full awareness of the unacceptable desire[4]. Female gender and younger age are some of the identified demographic risk factors while impaired cerebral hemispheric communication and excessive cortical arousal are some of the identified biological factors that may characterize conversion disorder. These identified biological risk factors inhibit the individual's awareness of bodily sensations, and have been shown to result in the subtle impairments on neuropsychological tests[4]. Some of the identified psychological risk factors are stress, poor coping skills and internal psychological conflicts.

Symptoms of Conversion disorder include blindness, paralysis, dystonia, psychogenic non epileptic seizures (PNES), anaesthesia, swallowing difficulties, motor tics, difficulty walking, hallucinations, and dementia. These symptoms are not caused directly by a physiological effect; rather these symptoms are caused by a suppressed psychological conflict. Despite the lack of a definitive organic diagnosis, the patient's distress is very real and the physical symptoms the patient experience cannot be controlled at will (i.e. The patient is not feigning the signs and symptoms)[3].

This review pursuits to explain the extent and scope of conversion disorders, highlighting its epidemiological features, clinical characteristics, management and prognostic factors.

METHODOLOGY

Design, searching procedure and keyword

This literature review was undertaken from January 2020 to February 2020. I searched PubMed, Google Scholar and Google for the words 'conversion disorder', 'conversion disorder epidemiology', 'conversion disorder symptoms', 'conversion disorder management', 'conversion disorder in Sub-Saharan Africa, conversion disorder in Nigeria', 'functional neurologic disorder', 'prevalence', 'psychogenic symptoms' etc., and examined the topic's reference lists for relevant papers and journal reviews.

Selection procedure

Initially, over 100 papers were retrieved, but only about 30 were useful for the purposes of this review. The most important studies were those conducted in Africa and/or written in English. A restriction in article date was effected, as majorly articles published in the last 20 years were selected with very few exceptions. A major limitation of my review was the scarcity of literature on conversion disorder in Sub-Saharan Africa, with a focus on Nigeria.

EPIDEMIOLOGY

The epidemiology of conversion disorder is complex and has been hampered over the years by a lack of clear definition, with previous definitions struggling with an uneasy mix of both physical and psychological components[6]. Likewise prevalence rates vary according to the composition of the population studied and whether the authors reported the frequency of conversion symptoms or the diagnosis of the disorders[7].

Prevalence of conversion disorders depends on several factors such as the setting of the study etc. In a community study, an incidence of 4 to 12 per 100,000 population per year was reported while the prevalence rate reported was of 50 per 100,000 people[6]. This contrasts with a general hospital study conducted by[8] which estimated incidence of conversion disorder at between 15 and 22 per 100,000.

A different study reported by[9] as cited by[7] estimated that 20% - 25% of patients have individual symptoms of conversion disorders. A study reported by[8] as cited by[7] showed 5% of such patients meeting the criteria for the full syndrome.

Similarly, another study of a psychiatric care registry [11] reported a lifetime prevalence rate of 11 to 22 per 100,000 people. Compared to a study in a neurology setting which suggests a lifetime prevalence rate of 23 per 100,000 people[10].

Not surprising, percentages increase in a neurologic setting. This is seen in a study of 3781 outpatients of neurology clinic conducted by[12] which showed that 5.4% had a primary diagnosis of conversion disorders while 30% had symptoms that were described only somewhat or not at all explained by the disease.

Women are more frequently affected and are estimated to be 60% to 75% of the patient population, although specific presentations such as functional myoclonus or Parkinsonism appear to have greater frequency in men[13]. The female to male ratio ranges from 2:1 to 10:1[14] same as reported by[4] and similar to 6:1 as reported by[15]. The age onset is usually in adolescence or early adulthood, typically age 10- 35 years[11], although conversion disorder may develop in middle age or later[16].

Several studies which include[7,4,16] amongst others have reported the increased frequency of conversion disorders among people of low socio-economic class, those residing in rural areas, those with lower levels of education, military members exposed to combat and patients with low intelligence quotient. There has been no racial predilection noticed by investigations.

There is an association between a history of abuse and conversion disorder. Several studies have examined this association and found between 28% and 44% of patients reported a history of physical abuse while 24–26% reported sexual abuse[17].

It has been shown that patients with conversion disorder often have associated mental illnesses, mostly depression and anxiety disorders[17] reported 23% of patients with conversion disorder had associated phobia, anxiety or panic attacks based on a study by[18]. Based on another study by[19], it reported 50% anxiety, 42% phobia, 34% obsessive–compulsive disorder, 10% panic attacks, 71% affective disorder and 34% depression

among patients with conversion disorder[17]. In patients with psychogenic non epileptic seizures, researchers found 47–57% had associated depression, 39–47% anxiety, 35–49% post-traumatic disorder, 62% personality disorder, and no psychotic disorders[17]. Hence multiple psychiatric co-morbidities are common.

SYMPTOMS

Regarding onset, some stressors, trauma, or psychological distress typically precedes symptoms of conversion disorder which thus manifests itself as a physical deficit. There's often no identifiable underlying physical cause for the symptom(s), and the affected individual cannot control the symptom(s). Symptoms generally may vary in severity and may come and go or be persistently present.

Four types of conversion disorders are specified based on presenting symptom (s); those with motor symptoms or deficits, those with sensory symptoms or deficits, those with seizures and those with mixed presentations[7].

Motor symptoms of conversion disorders are typically of sudden onset, disappears with distraction, increases with attention and excessive fatigue or demonstration of effort. Symptoms includes; tremors, involuntary movements, tics, torticollis, opisthotonus, abnormal gaits (e.g. excessive gait slowness, astasia-abasia, and knee buckling)[20], syncope, paraplegia, paralysis and weakness of any part of the body. The diagnosis of motor symptoms of conversion disorder is based on ascertaining specific elements of the neurological examination demonstrating inconsistency (i.e., changing patterns of symptoms overtime with susceptibility to distraction) and/or incongruence (i.e., a clinical picture incompatible with known neurologically determined patterns)[5].

Sensory symptoms of conversion disorders include; anaesthesia, paraesthesia, blindness, aphonia, dysphonia, deafness, swallowing difficulties, urinary retention and diarrhoea[21].

Seizures occurring as a symptom of conversion disorder are referred to as psychogenic non-epileptic seizures. This differs from the epileptic seizures as they are stress-induced and result from traumatic psychological experiences, at times from a forgotten past[22]. Helpful clinical clues in distinguishing psychogenic non-epileptic seizures are the long duration of shaking episodes (>3minutes, placing patients at risk of being mismanaged for status epilepticus), fluctuating course of seizures, asynchronous limb movements, pelvic thrusting, side to-side head movements, closed eyes, ictal crying, recall of ictal events and lack of response to increasing doses of anticonvulsants[5].

Those with a mixed presentation have one or more symptoms from the three categories stated above occurring together.

MANAGEMENT

Proper management of conversion disorder involves taking a detailed and thorough history, doing a complete and thorough physical examination, ordering the appropriate investigations, making the right diagnosis and employing the right treatment modality.

HISTORY TAKING

A thorough history taking is very necessary to help differentiate conversion disorder symptoms and symptoms of organic disorders. For example; a patient with blindness as a symptom of conversion disorder, though complaining of recent onset of blindness, neither sustains injury while manoeuvring around the office nor displays any expected bruises or scrapes. Likewise, patients with psychogenic non-epileptic seizures generally lack response to treatment with anti-epileptic drugs or may have a paradoxical increase in seizures with anti-epileptic drug treatment. The negative history of injury or loss of control of bladder or bowel during the seizure episode is also significant[3].

A thorough psychiatric history and examination is necessary to explicate the onset of symptoms, the presence of stressors, and the presence of comorbid conditions.

PHYSICAL EXAMINATION

Clinical examination findings are of utmost importance before making a diagnosis of conversion disorders. According to[1], internal inconsistency at examination is one way to demonstrate incompatibility with neurological disease (i.e. demonstrating that physical signs elicited through one examination method are no longer positive when tested a different way). Examples of some of the clinical findings on examination;

- Hoover's sign, in which weakness of hip extension returns to normal strength with contralateral hip flexion against resistance[1].
- Marked weakness of ankle plantar-flexion when tested on the bed in an individual who is able to walk on tiptoes[1].
- Positive findings on the tremor entrainment test. On this test, a unilateral tremor may be identified as functional if the tremor changes when the individual is distracted away from it. This may be observed if the individual is asked to copy the examiner in making a rhythmical movement with

their unaffected hand and this causes the functional tremor to change such that it copies or "entrains" to the rhythm of the unaffected hand or the functional tremor is suppressed, or no longer makes a simple rhythmical movement[1].

- In attacks resembling epilepsy or syncope ("psychogenic" non-epileptic attacks), the occurrence of closed eyes with resistance to opening or a normal simultaneous electroencephalogram (although this alone does not exclude all forms of epilepsy or syncope)[1].
- For visual symptoms, a tubular visual field (i.e., tunnel vision)[1].
- Whack-a-mole sign is the emergence or worsening of an involuntary movement in a separate body part when the initially affected body part is suppressed by someone holding it down[5].
- Drift without pronation sign in functional weakness is present when the affected outstretched arm, held in supination at the outset, fails to pronate when drifting[5].
- Finger abduction sign is weakness of fingers abduction that resolves with contralateral finger abduction against resistance[5].

The diagnosis of conversion disorder should be based on the overall clinical picture and not on a single clinical finding[1].

INVESTIGATIONS

The diagnosis of conversion disorder via investigations can be challenging since computed tomography (CT) and magnetic resonance imaging (MRI) of the brain and electroencephalogram (EEG) typically show no abnormalities. However, long-term monitoring, such as inpatient video-EEG monitoring and ambulatory video-EEG recording, in addition to a thorough psychiatric history and physical examination findings offer reliable diagnostic tools with high levels of certainty[23]. This monitoring is very cumbersome and expensive and most times only relevant for psychogenic non epileptic seizures.

DIAGNOSIS

Diagnosis of conversion disorders continues to represent a clinical challenge, according to various literatures. This is because although conversion disorder is a psychiatric diagnosis, it usually presents to the neurologist than to the psychiatrist due to the typical presenting complaints of deficits or symptoms of voluntary motor or sensory function as in the (criterion A in[1]. The diagnosis of conversion disorder in addition to the above complaint however requires an associated psychological factor (criterion B) which most neurologists fail to explore in sufficient depth during their evaluation. This has led to misdiagnosis of conversion disorder. The misdiagnosis rate of conversion disorder as found in a thorough meta-analysis by[24] is around 4%, no more frequent than schizophrenia.

Therefore, a good collaboration between a psychiatrist and a neurologist is required to make an accurate diagnosis of conversion disorder. A multi-step process which includes a careful history taking and physical examination by the neurologist, referral to the psychiatrist who further takes a thorough psychiatric history and examination and a clear joint explanation to the patient should be employed to achieve an accurate diagnosis[17].

The diagnostic criteria for conversion disorder[1] which is most commonly used require the presence of all of the following according to the DSM:

A. One or more symptoms of altered voluntary sensory or motor function;
B. Clinical findings provide evidence of incompatibility between the symptom and recognized neurological or medical conditions;
C. Symptoms or deficits are not better explained by another medical or mental disorder;
D. Symptoms or deficits cause clinically significant distress or impairment in social, occupational, or other important areas of functioning or warrants medical evaluation.

TREATMENT MODALITY

Treatment is multidisciplinary. Psychoeducation of patients and their caregivers within a biopsychosocial framework is the critical first step in the treatment process of conversion disorders. This increases the degree of adherence to and success from other therapeutic strategies. The explanation would encompass how the diagnosis was made, including the specific features on examination that make it clinically definite, the possibility of other concurrent or future medical comorbidities (e.g., comorbid epilepsy or Parkinson disease). This leaves the patient with an understanding of the rationale for tailored multidisciplinary management, which may include psychological interventions, prevent the need to seek other medical opinions amongst others[5].

Treatment options for conversion disorders need to reflect the diversity of symptom phenotypes as well as the heterogeneity and comorbidity within the patient population; there is no one -size-fits-all approach.

The treatment of choice for conversion disorders traditionally is psychological interventions such as cognitive-behavioral therapy, behavioral therapy, or psychodynamic therapy and for functional motor

disorder, rehabilitation strategies. Numerous studies on this have been conducted with particularly promising results for disorder-adapted cognitive behavioral therapy for non-epileptic seizures and functional movement disorders. Cognitive behavioral therapy is a structured, time-limited therapy that helps patients identify how thinking affects emotional states or specific behaviors. Cognitive behavioral therapy and other psychotherapies include components such as education, skills in gaining control of seizures, recognizing triggers, changing cognitions and behaviors associated with seizures and widening therapy to other aspects of interpersonal functioning[5].

Physical treatment plays a great role when motor symptoms predominate. This is mainly done by the physiotherapists and helps prevent secondary complications from conversion disorder. Example of physical treatment includes sit-to-stands in a patient presenting with paralysis or weakness. However, for a better outcome, psychotherapeutic modalities are incorporated[5].

Other treatments include pharmacological interventions when there are comorbid symptoms such as pain and anxiety. Many non-pharmacological interventions have been used in single cases or small case-series, as ancillary treatments these include transcutaneous electrical stimulation, transcranial magnetic stimulation, and therapeutic sedation with propofol. The mechanism of action is uncertain, although likely to be mediated by a cognitive behavioral effect rather than by a modification of cortical excitability[5].

Prognosis of conversion disorder is poor partly because of under recognition; hence the disorder persists and sometimes even worsens over time in such patients. Persistence and/or worsening of symptoms in patients with conversion disorder would eventually result in poor quality of life.

CONCLUSION

Conversion disorders are quite common and are treatable. Quite a number of studies have been done concerning understanding conversion disorder, however knowledge gaps still exist. Further research needs to be done concerning the appropriate therapeutic modality for each patient, predictors of response, dose and duration of various treatment approaches, the value of combination therapy.

ACKNOWLEDGEMENT

I would like to express my special thanks to God Almighty for the success of this article. Special thanks to Dr. H. Abdurahman and Miss Jemila for the opportunity to work on this topic and their tremendous support. I would like to also thank my mom Mrs Ebele Nwafor and Mr Innocent Agbai for their constant encouragement while I was working on this article. God bless you all.

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