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Chapter · November 2016

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Conversion Disorder

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Esther Yakobov, Tomas Jurcik, and Michael J.L. Sullivan

Topic

Conversion disorder is defined by one or more physical symptoms that are not under voluntary control and are not thought to be caused by neurological or medical conditions. The key feature of this disorder is thus the incongruence between presented symptomatology and medical conceptualizations of organic diseases. The most commonly observed conversion symptoms include blindness, psychogenic non-epileptic seizures, paralyses, unresponsiveness, anesthesia, aphonia, and abnormal gait [1, 2].

There is no unified model for conversion disorder and its conceptualization relies on psychological, social, and biological factors. The onset of the symptoms is sudden, and is often preceded by either psychological or physical trauma [1, 3]. The diagnosis of conversion disorder is often problematic. Since the presenting symptoms of this psychiatric disorder are neurological, a full

diagnosis often requires collaboration between a psychiatrist and a neurologist [4]. Once the diagnosis has been made several treatment options may be considered. While there are no specific pharmacological or psychological treatments for conversion disorder, case reports suggest that a multidisciplinary approach in rehabilitation settings with an emphasis on maximizing physical function appears to be most beneficial [5, 6].

Chapter Organization: The first part of the chapter provides the reader with a conceptual understanding of conversion disorder. Current terminology and etiologies are also outlined.

The second part of the chapter discusses the importance of conversion disorder, its epidemiology, clinical presentation of conversion symptoms, issues with its diagnosis, comorbidities, and differential diagnosis.

The third part of the chapter discusses treatment options, as well as addresses possible challenges and barriers to positive treatment outcomes

A. *Current Formulations*

The current understanding of the etiology and treatment of conversion disorders remains modest when compared to the progress made with other psychiatric disorders [5].

Despite the number of available theories, a unified model for the disorder does not currently exist; a combination of psychological,

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social, and biological factors appears to drive the symptoms and should be considered in the formulation and treatment of the disorder.

B. Terminology

To describe conversion disorder, the DSM-5 uses the terms:

- **Conversion** that is rooted in psychoanalytic models and psychogenic etiology
- **Functional neurological symptom** disorder that recognizes that underlying psychological factors might not be apparent (or present) at the time of diagnosis and emphasizes the importance of neurological examination [1].

Apart from conversion, most common terms that are currently used by clinicians to describe medically unexplained symptoms are:

- **Functional**, a term that denotes abnormal central nervous system functioning
- **Psychogenic**, a term that denotes an etiology of psychological origin

C. Theories of Etiology

1. Psychoanalytic theory

Psychoanalytic formulations of conversion disorder suggest that the medically unexplained physical symptoms represent expression of forbidden urges, unconscious drives, as well as the need to suffer or identify with a loss [7, 8]. A history of childhood sexual and physical abuse has also been associated with conversion disorder, suggesting that childhood traumatization may pose as a risk factor in some individuals [9]. While it remains unclear how stresses, traumas, or psychologically threatening or socially unacceptable thoughts translate into somatic symptoms, conversion symptoms are viewed as a consequence of a defense mechanism that occurs outside of the patient's awareness.

2. Sociocultural theories

Sociocultural formulations place an emphasis on gender roles, religious beliefs, and other sociocultural influences that may prohibit or dictate culturally acceptable ways to express emotion. Today conversion disorders are more commonly diagnosed in women, tend to affect

individuals from lower socioeconomic status, rural communities, and individuals with limited knowledge of physiology and anatomy [10]. Differences in prevalence rates of conversion disorders across cultural groups are unclear due to inconsistent methods of assessment. However, some findings have shown that psychogenic non-epileptic seizures and loss of consciousness are more common in some contexts (e.g., Turkey, Oman, and India), while other settings have more frequently reported motor disturbances (Netherlands) or visual disturbances (Japan) [11]. Certain cultural syndromes, such as *ataques de nervios* (e.g., in Puerto Rico) may include similar medically unexplained symptoms such as loss of consciousness, faintness, convulsions, and blindness [12].

3. Learning theory and secondary gains

The social learning perspective emphasizes the role of the environment and reinforcement in behavior. Of particular importance in this model is the concept of **secondary gains**—the benefits of the sick role behavior. Secondary gains, whether financial or interpersonal, act as a reinforcing consequence of the presenting symptoms and maintain the conversion disorder [13]. Positive reinforcement of the sick role behavior or the effect of secondary gains on symptoms maintenance may happen without the patient's conscious awareness.

4. Neurobiological correlates of conversion

The search for neural mechanisms by which psychological stressors translate into somatic symptoms is complicated by the low base rates, heterogeneity of symptoms, frequent comorbidities with anxiety and depression, as well as secondary gains and other psychological determinants of the behavior [14]. Despite the paucity and the heterogeneity of data, preliminary findings across studies point to converging mechanisms. Several investigations using functional magnetic resonance imaging and single-photon

emission-computed tomography between sensory symptoms and altered glial activity, as well as brain regulating and expressive results of these studies. The pattern of activation of the activation of motor function may override sensory or motor function needed to further determine their relevance.

Importance

A. Epidemiology

- It is estimated that patients in neuropsychiatric hospitals [19, 20], and subsequent to conversion disorder, patients with somatoform disorders are estimated at meeting the criteria for conversion disorder [22].
 - The disorder is commonly reported.
 - Its onset tends to be non-epileptic at a mean age of 16 years for motor symptoms, which can also occur in the elderly [1].
 - The symptoms are common and cause significant disability.
 - It has been observed that patients diagnosed with conversion disorder are commonly seen in primary care and attend school better than expected.
- It is noteworthy to mention that older diagnostic criteria for conversion disorder included psychological factors as a causative factor. Stricter criteria may have possibly led to the underdiagnosis of the disorder.*

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emission-computed tomography found associations between sensory and motor conversion symptoms and altered activity in the basal ganglia, as well as brain areas that are implicated in regulating and expressing emotion [14–17]. The results of these studies suggest that an abnormal pattern of activation in these regions may inhibit the activation of motor and sensory cortices, thus suggesting a mechanism by which intense emotion may override brain regions associated with sensory or motor function [18]. Future research is needed to further replicate these findings and determine their relevance for clinical practice.

Importance

A. *Epidemiology*

- It is estimated that approximately 30 % of patients in neurology settings have symptoms unexplained by organic pathology [19, 20], and up to 18 % of these patients are subsequently diagnosed with conversion disorder [20]. The prevalence of patients with some symptoms of conversion disorder in general hospital settings is estimated at 20–25 % [21] with 5 % meeting the criteria for full diagnosis [22].¹
- The disorder is two to three times more commonly reported in females.
- Its onset tends to be around 30 years for non-epileptic attacks and around 40 years of age for motor symptoms; however, it can also occur in young children and the elderly [1].
- The symptoms can be episodic or chronic and cause significant disability.
- It has been observed that the vast majority of patients diagnosed with conversion disorder are completely unable to work or attend school before receiving treatment.

¹It is noteworthy to mention that these statistics relied on the older diagnostic criteria that necessitated the existence of psychological factors associated with symptoms. These stricter criteria may have complicated the diagnosis and possibly led to the underdiagnosing and underreporting of the disorder.

More than 50 % of patients are bedridden and require assistance with daily functioning [23].

Practical Applications

A. *Clinical Presentation: What to look for*

Classification and diagnostic criteria

- In the DSM-5, conversion disorder is categorized under the umbrella of somatic symptoms and related disorders [1]. The first diagnostic feature, **Criterion A** is “one or more symptoms of altered voluntary motor or sensory function.” **Criterion B** requires that the clinician provides evidence of incompatibility between the presenting symptoms and existing neurological or medical conditions. For example, in conversion blindness the patient might successfully avoid obstacles in his or her path without the conscious experience of sight. **Criterion C** states that the symptoms cannot be better explained by another medical condition or mental disorder including malingering. Finally, as per **Criterion D**, the symptoms or deficit cause significant impairment and distress in social, occupational, or other areas of functioning.
- Patients with conversion disorder may not necessarily exhibit “*la belle indifference*,” an attitude that was thought to be unique to conversion disorder characterized by a lack of concern for alarming symptoms such as blindness or paralysis. Patients with conversion disorder may display as much concern over their symptoms as patients with organic diseases; they may also adopt a stoic attitude in the face of adversity, or feign it [24].
- Although the onset of the disorder is often thought to be precipitated by stress or trauma (psychological or physical), this requirement is no longer included in the current diagnostic criteria. Patients with conversion disorder do not always associate their symptoms with emotional distress,

thus the underlying psychological conflict (assuming it exists) may simply not be recognized and reported by the patient [4].

Most common symptom types associated with conversion disorder

Weakness or paralyses: paralysis of an arm or a leg [1]

Abnormal movement: tremor, dystonic movement (sustained muscle contractions causing repetitive movements or abnormal postures), myoclonus (a brief and involuntary muscle twitching), gait disorder, parkinsonism, abnormal limb posturing, ataxia (lack of voluntary coordination of muscle movements), periods of unresponsiveness resembling coma [1, 25]

Swallowing symptoms: Globus hystericus (sensation of a lump in one's throat) [1]

Speech symptoms: slurred speech, dysphonia (impaired ability to produce speech volume), aphonia (inability to produce sounds), dysarthria (impaired articulation) [1]

Attacks or seizures: psychogenic non-epileptic seizures, syncope (transient loss of consciousness) [1]

Anesthesia or sensory loss and other sensory symptoms: Altered sense of vision (blindness, double vision), reduced skin sensitivity, altered hearing [1]

The main feature of conversion disorder is inconsistency between presenting symptoms and an underlying organic pathology. Thus, the diagnosis necessitates an exclusion of medical or neurological conditions that may account for conversion symptoms. These may include simple bedside tests or muscle flexion exercises that can show incompatibility of presenting symptoms with neurological disorders. An electroencephalogram, X-ray, or imaging tests may be required to examine the organic basis for other presenting symptoms.

Examples of symptom incompatibility with neurological disease

Positive Hoover's sign: Normal pressure from the weak limb when asked to flex the contralateral hip against resistance [1]

Preserved deep tendon reflexes in the limb when presenting with complete paralysis or sensory loss [3]

Slower motor movements even when certain tests such as deep knee squat require more strength when performed slowly [26]

Resisting of manual eye opening by a physician during conversion unresponsiveness when in organically unresponsive patients a smooth and effortless glide is observed [27]

Psychogenic non-epileptic seizures: While differentiating a non-epileptic seizure from a real seizure is difficult, non-epileptic seizures do not display the characteristic electroencephalographic patterns. Their onset tends to be more gradual and may be accompanied by dramatic vocalizations, nontypical thrashing of extremities, and responsiveness to environmental stimuli (response to noxious stimuli) [28]

Tremors with inconsistent presentation; subsiding with distraction or changing in frequency after examiner's rhythmic tapping or movement of unaffected body part [1]

However, even in the presence of some of these positive signs that appear to be inconsistent with what is currently known about anatomy and pathophysiology, caution must be exercised when differentiating patients with conversion disorder from patients with organic diseases [29, 30]. First, the limitations and reliability of these symptoms in patients with motor and sensory neurological diseases has not been systematically investigated [31]. Moreover, in *functional overlay*, a situation where symptoms of conversion disorder co-occur with neurological dysfunction, the differentiation between disorders becomes increasingly complex [32]. However, the diagnosis of conversion disorder appears to have a reliable diagnostic stability, with a misdiagnosis rate of approximately 4% [33]. Given that one in 25 patients is misdiagnosed, caution still needs to be exercised to avoid jumping to false conclusions.

B. Differential Diagnosis

When considering a diagnosis of conversion disorder, several alternatives should be investigated. As per DSM-5, the diagnosis of conversion disorder cannot be made if the symptoms are better explained by:

• Neurological disease

- Progression of symptoms may signal previously unidentified neurological disease
- Patients may present with unusual symptoms of organic illness such as myasthenia gravis (muscle weakness) [34] or with neurological and medical conditions that may appear like conversion

disorder (e.g., paresis, cortical blindness, multiple sclerosis)

• Somatic symptoms

- Most somatic symptoms (e.g., fatigue) cannot be explained by organic disease, individuals are preoccupied with emotional distress, often invest energy in their health care

• Factitious disorder

- Feigning or simulating symptoms occur in factitious disorder characterized by a strong motivation to receive medical attention and malingering (attempt to obtain a financial gain)
- Malingeringers, particularly those with chronic pain, do not have control over their symptoms

• Dissociative disorders

- Dissociative disorders with conversion symptoms should be made after differential diagnosis for both disorders

• Body dysmorphic disorder

- The main characteristic is excessive preoccupation with perceived physical defects that are no sensory or functional

• Depressive disorders

- In some individuals, depression can produce symptoms such as heaviness in limbs, fatigue, and weakness reported by the patient. The weakness however is not due to depressive symptoms but core diagnostic features

• Panic disorder

- Transient neurological symptoms such as tremors and palpitations

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disorder (e.g., stroke, vocal cord dystonia, cortical-basal ganglia degeneration, multiple sclerosis) [23, 35]

- **Somatic symptom disease**

- Most somatic symptoms (e.g., pain, fatigue) cannot be examined for incompatibility with pathophysiology. Moreover, individuals with somatic symptoms are preoccupied with excessive thoughts, emotional distress, and anxiety about the seriousness of their symptoms, and often invest excessive effort devoted to their health concerns [1]

- **Factitious disorder and malingering**

- Feigning or simulating symptoms can occur in factitious disorder (a psychiatric disorder characterized by the motivation to receive medical care) or in malingering (external motivation to obtain a financial reward). Unlike individuals with factitious disorder or malingering, patients with conversion do not have conscious control over their symptoms [1]

- **Dissociative disorder**

- Dissociative disorders are often comorbid with conversion, and both diagnoses should be made if symptoms meet criteria for both disorders

- **Body dysmorphic disorder**

- The main characteristic of this disorder is excessive preoccupation with perceived physical defects; however, there are no sensory or motor dysfunctions

- **Depressive disorders**

- In some individuals, depressive disorders can produce general feelings of heaviness in limbs that can resemble weakness reported in conversion disorder. The weakness in conversion disorder however is more localized, and depressive symptoms are often not the core diagnostic feature [1]

- **Panic disorder**

- Transient neurological symptoms such as tremors and paresthesias (sensations

of tingling, ticking, or burning of a person's skin without a long-term physical effect) can occur in conversion disorder and panic attacks. In panic attacks, however, the symptoms are acute and short lived with associated physical symptoms [1]

- **Cultural concepts of distress**

- Certain cultural conceptualizations and manifestations of distress which include pseudoneurological symptoms such as *ataques de nervios* (e.g., pseudoseizures, fainting), *mareos* (e.g., dizziness, vertigo) in Latin Americans and among Latinos in the USA may need to be considered when working cross-culturally [1]

C. Comorbidity

Conversion disorders often coexist with other psychiatric disorders [1]. It is estimated that 10% of patients with conversion disorder experience panic attacks, 23–50% anxiety, 42% phobia, 9–34% obsessive compulsive disorder, 34–57% depression, 22% bipolar disorder, and 35–49% posttraumatic disorder [9, 36–38]. Personality disorders (PD), in particular borderline and histrionic PDs, are also more common in individuals with conversion disorder [1, 9, 36, 39]. Thus, identifying and treating the comorbid psychiatric disorder may provide a resolution to psychological conflict and remove the primary gain responsible for the conversion reaction.

D. Prognosis

A better prognosis of conversion disorder is often associated with a briefer duration of symptoms; thus, it is of importance to consider a timely referral to a specialist to rule out an underlying medical condition and begin treatment as soon as possible [14].

E. Diagnosing Conversion Disorder-Key Points

If a patient presents with one or more symptoms that affect their movement or bodily senses and are not under the patient's voluntary control:

- Refer the patient for thorough neurological and medical examinations to exclude organic causes.
- Even with the lack of evidence for organic basis for symptoms it is possible that symptoms reflect undiagnosed neurological disease. If symptoms progress, reassessment for neurological or medical condition is warranted.
- Conduct a clinical assessment to:
 - Evaluate for differential diagnosis. Keep in mind that patients can have conversion and other mental or neurological disorders.
 - Examine the patient's history for psychological or physical traumas. If psychological stressors can be linked to the onset of conversion symptoms, appropriate psychological treatment can be provided.
 - Assess the patient for comorbidities: anxiety, depression, and other psychological conditions often coexist with conversion disorder. Treatment of comorbid conditions may alleviate conversion symptoms.
- Be aware of sociocultural factors that can affect symptom presentation
 - Conversion symptoms may vary between cultural contexts.
 - Women, individuals living in rural settings, and individuals with limited knowledge of physiology appear to be affected more often.
- *La Belle Indifference* or lack of concern for serious medical symptoms is not required for the diagnoses of conversion disorder. Patients with conversion disorder may be just as concerned about their symptoms as patients with neurological conditions.
- Patients with conversion disorder experience very high levels of disability.
- Timely diagnosis and treatment are crucial for successful outcome.

Treatment

1. Challenges and barriers

The absence of a unified etiological model of conversion disorder poses a challenge for proposing avenues for interven-

tion. The clinician has to conduct a careful examination of the symptom timeline, often making inferences about the nature of factors precipitating the onset of the illness, the factors involved in symptom maintenance, as well as identifying possible comorbid psychiatric conditions and ruling out medical illnesses.

2. Presenting the diagnosis to the patient

If the patient denies psychological causes for their symptoms, treat the patient with respect. Patients are often unaware that their symptoms may be psychogenic. Caution must be exercised to not imply that malingering is suspected. Questioning the legitimacy of symptoms can cause significant emotional distress and hinder therapy.

Negative reactions from other health care providers may also be sensed. Many patients report that they feel accused of "faking" their symptoms or malingering and thus experience a sense of abandonment by their physicians [23]. Indeed, these attitudes are not uncommon among the neurologists, nurses, and rehabilitation staff [23].

- Emphasize that the symptoms are not under voluntary control to validate the patient and normalize the nature of the disorder to treating staff who may not be cognizant of this disorder [6].
- Suggest that symptoms may resolve spontaneously.

◦ Discuss the mind-body interconnection in illness: Patients may wonder why they are referred to mental health therapists for a physical problem; clinicians may thus consider validating the difficulty of the symptoms to patients, and outline how physical suffering may be alleviated if "life stress" can be better managed.

- Cultural influences related to conversion symptoms should be considered (discussed above) along with the DSM cultural formulation, and a consultation with a cultural consultant or interpreter when necessary [40].

3. Treatment Modalities

a. Psychological treatments

The traditional approach of this disorder were and psychoanalysis. Such however, have not been va their success has been li Cognitive Behavioral Ther aimed at changing the i thinking patterns about ps logical symptoms has sh effective in some studies (s review), but due to small sa and heterogeneity of sympt tation, replication is necess ster claims about effective success of all these treatmen the assumption that a ps stressor linked to conversion can be brought into the patie ness where it can be resolv maladaptive thoughts relat symptoms can be challenged while this assumption may patients with conversion di often unaware of the psy stressors that may have ca symptoms, and in some c may not be a clear stressor place. Furthermore, these p often reluctant to acknowledg chological underpinnings symptoms and may be re treatments that they constru appropriate and discordant v belief of a physical basis symptoms [6, 41]. Hence, an that genuinely acknowledges itating nature of the symptom educates patients more gener stress management and be interrelationships in a mai respects defenses, rather tha challenges them, may be ap The rehabilitation approach, another method aimed at with—rather than against—c symptoms.

has to conduct a careful history taking, including the symptom timeline, gathering information about the nature of symptoms, eliciting the onset of the illness, and identifying factors involved in symptom onset, as well as identifying possible organic conditions and ruling out other psychiatric conditions.

Diagnosis to the patient If the patient denies psychological causes for their symptoms, treat the patient as if they are not aware that their symptoms may be psychogenic. This can be exercised to not imply that the patient is suspected. Questioning about physical symptoms can cause significant emotional distress and hinder the diagnostic process.

Patients with conversion symptoms often seek reassurance from other health care providers. They may also be sensed. Many patients feel embarrassed that they feel accused of fabricating symptoms or malingering. This can lead to a sense of abandonment by their physicians [23]. Indeed, physician burnout is not uncommon among physicians, nurses, and rehabilitation staff who work with patients with conversion symptoms. Patients may feel that the symptoms are not under their voluntary control to validate the symptoms. This can normalize the nature of the symptoms in the eyes of the treating staff who may not fully understand the nature of this disorder [6].

Conversion symptoms may resolve spontaneously over time.

Mind-body interconnection: Patients may wonder if they are being referred to mental health professionals because of a physical problem; clinicians should consider validating the physical nature of the symptoms to patients. Patients may believe that new physical suffering may be caused by stressors of "life stress" can be better explained by the mind-body connection.

When considering the differential diagnoses related to conversion symptoms, other conditions should be considered (see Table 30.1 above) along with the DSM criteria for conversion disorder, and a consultation with a psychiatrist, neurologist, or consultant or interpreter may be needed [40].

3. Treatment Modalities

a. Psychological treatments

The traditional approaches to treatment of this disorder were hypnosis and psychoanalysis. Such approaches, however, have not been validated and their success has been limited [14]. Cognitive Behavioral Therapy that is aimed at changing the maladaptive thinking patterns about pseudoneurological symptoms has shown to be effective in some studies (see [14] for review), but due to small sample sizes and heterogeneity of symptom presentation, replication is necessary to bolster claims about effectiveness. The success of all these treatments relies on the assumption that a psychological stressor linked to conversion exists and can be brought into the patient's awareness where it can be resolved, or that maladaptive thoughts related to the symptoms can be challenged. However, while this assumption may hold true, patients with conversion disorder are often unaware of the psychological stressors that may have caused their symptoms, and in some cases there may not be a clear stressor in the first place. Furthermore, these patients are often reluctant to acknowledge the psychological underpinnings of their symptoms and may be resistant to treatments that they construe as inappropriate and discordant with their belief of a physical basis for their symptoms [6, 41]. Hence, an approach that genuinely acknowledges the debilitating nature of the symptoms but also educates patients more generally about stress management and body-mind interrelationships in a manner that respects defenses, rather than directly challenges them, may be appropriate. The rehabilitation approach, below, is another method aimed at working with—rather than against—conversion symptoms.

b. Rehabilitation approach

Evidence emerging from clinical cases suggests that a structured and active rehabilitation approach may be particularly effective for patients with motor conversion symptoms [6, 41–44]. These treatments are similar to those received by patients with symptoms arising from organic pathology and focus on maximizing physical function in rehabilitation settings.

- Thus, the treatment should be geared towards the presenting symptoms and the patient should be referred to the rehabilitation setting appropriate for their physical symptoms [43].
- This approach accomplishes several goals. Firstly, it acknowledges that presenting symptoms are not under the patient's voluntary control, thus validating the patient's dysfunction as real. Secondly, this approach is concordant with the patients' beliefs about the physical basis for their problem. Together these factors provide the patient with a non-threatening and supportive context for relinquishing the symptoms of conversion.
- Adopting an approach where remaining in treatment is contingent on patients' improvement appears to motivate patients and minimizes manipulative behavior, thereby reducing negative interactions with rehabilitation staff [6]. Treating the problem as physical rather than emphasizing psychological causation may help "save face" and minimize stigma associated with a psychiatric condition. However, given that a large number of patients with conversion disorder present with other psychiatric conditions as well as social problems that can impact treatment, an interdisciplinary approach to management may be needed.

Tips

- Symptoms of conversion disorder are not feigned, but may represent a bodily manifestation of emotional distress.
- Psychological, sociocultural, and biological factors may be involved in conversion disorder, suggesting the need for a multidisciplinary approach to formulation and treatment.
- A non-confrontational approach that emphasizes psychoeducation of the mind-body relationship and validates the patient's suffering rather than minimizing symptoms may help build the alliance.
- Treatment aimed at maximizing physical function in rehabilitation settings appears to be promising.
- Treating the underlying psychological conflict may be challenging but beneficial in patients with identified emotional distress.
- More treatment studies are needed in identifying effective clinical management.

References

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington, VA: American Psychiatric Publishing; 2013.
- Swartz MS, McCracken J. Emergency room management of conversion disorders. *Hosp Community Psychiatry*. 1986;37(8):828–32.
- Wolfson AB, Hendey GW, Ling LJ, Rosen CL, Schaider JJ, Sharieff GQ. Conversion disorder, in Harwood-Nuss' Clinical Practice of Emergency Medicine Wolfson (Ed.). Philadelphia, PA: Lippincott Williams & Wilkins; 2009.
- Aybek S, Kanaan RA, David AS. The neuropsychiatry of conversion disorder. *Curr Opin Psychiatry*. 2008;21(3):275–80.
- Allin M, Streerawitz A, Curtis V. Progress in understanding conversion disorder. *Neuropsychiatr Dis Treat*. 2005;1(3):205–9.
- Sullivan MJ, Buchanan DC. The treatment of conversion disorder in a rehabilitation setting. *Can J Rehabil*. 1989;2(3):175–80.
- Ford CV, Folks DG. Conversion disorders: an overview. *Psychosomatics*. 1985;26(5):371–4, 380–3.
- Hollender MH. The case of Anna O.: a reformulation. *Am J Psychiatry*. 1980;137(7):797–800.
- Sar V, Akyuz G, Kundakci T, Kiziltan E, Dogan O. Childhood trauma, dissociation, and psychiatric comorbidity in patients with conversion disorder. *Am J Psychiatry*. 2004;161(12):2271–6.
- Guggenheim FG, Smith GR. Somatoform disorders. In: Kaplan HI, Saddock BJ, editors. *Comprehensive textbook of psychiatry/VI*. 6th ed. Baltimore: Williams & Wilkins; 1995. p. 1251–70.
- Brown RJ, Lewis-Fernandez R. Culture and conversion disorder: implications for DSM-5. *Psychiatry*. 2011;74(3):187–206.
- Guarnaccia PJ, Rubio-Stipe M, Canino G. Ataques de nervios in the Puerto Rican Diagnostic Interview Schedule: the impact of cultural categories on psychiatric epidemiology. *Cult Med Psychiatry*. 1989;13(3):275–95.
- McHugh PR, Slavney PR. The perspectives of psychiatry. 2nd ed. Baltimore: John Hopkins University Press; 1983.
- Feinstein A. Conversion disorder: advances in understanding. *Can Med Assoc J*. 2011;183(8):915–20.
- Ghaffar O, Staines WR, Feinstein A. Unexplained neurologic symptoms: an fMRI study of sensory conversion disorder. *Neurology*. 2006;67(11):2036–8.
- Marshall JC, Halligan PW, Fink GR, Wade DT, Frackowiak RS. The functional anatomy of a hysterical paralysis. *Cognition*. 1997;64(1):B1–8.
- Vuilleumier P, Chicherio C, Assal F, Schwartz S, Slosman D, Landis T. Functional neuroanatomical correlates of hysterical sensorimotor loss. *Brain*. 2001;124(6):1077–90.
- van Beilen M, Vogt BA, Leenders KL. Increased activation in cingulate cortex in conversion disorder: what does it mean? *J Neurol Sci*. 2010;289(1–2):155–8.
- Snijders TJ, de Leeuw FE, Klumpers UM, Kappelle LJ, van Gijn J. Prevalence and predictors of unexplained neurological symptoms in an academic neurology outpatient clinic—an observational study. *J Neurol*. 2004;251(1):66–71.
- Stone J, Carson A, Duncan R, Coleman R, Roberts J, Warlow C, Hibberd C, Murray G, Cull R, Pelosi A, Cavanagh J, Matthews K, Goldbeck R, Smyth R, Walker J, Macmahon AD, Sharpe M. Symptom 'unexplained by organic disease' in 1144 new neurology out-patients: how often does the diagnosis change at follow-up? *Brain*. 2009;132(10):2878–88.
- Engl GL. Conversion symptoms. In: McBride CM, editor. *Signs and symptoms: applied pathophysiology and clinical interpretation*. Philadelphia: J.B. Lippincott; 1970. p. 650–68.
- Folks DG, Ford CV, Regan WM. Conversion symptoms in a general hospital. *Psychosomatics*. 1984;25(3):285–9, 291, 294–5.
- Rosebush PI, Mazurek MF. Treatment of conversion disorder in the 21st century: have we moved beyond the couch? *Curr Treat Options Neurol*. 2011;13(3):255–66.
- Stone J, Smyth R, Carson A, Warlow C, Sharpe M. La belle indifference in conversion symptoms

- hysteria: systematic review. *Arch Gen Psychiatry*. 2006;188:204–9.
- Lang AE. Phenomenology of conversion disorders. In: *Psychogenic and other conversion disorders*. New York: University press; 2011. p. 6–10.
- Watson CG, Buranen C. The phenomenon of false positive conversion symptoms. *Arch Gen Psychiatry*. 1979;167(4):243–7.
- Worden RE, Johnson EW. Hysterical paralysis. *Arch Gen Psychiatry*. 1961;42:122–3.
- Trimble MR. Pseudoseizures. *Arch Gen Psychiatry*. 1993;50:531–48.
- Chatrol H, Peresson G, Clarquier J. Revising the traditional criteria for conversion disorder. *Arch Gen Psychiatry*. 1995;52(6):317–23.
- Gould R, Miller BL, Goldstein J. The validity of hysterical signs. *Arch Gen Psychiatry*. 1986;174(10):593–7.
- Djaldetti R, Zoldan Y, Shabtai H. Diagnosis of "non-organic" objective motor assessment: the "gold standard". *J Neurol*. 1998;245(12):121–5.
- Haines P. Hysteria following neurosurgery. *Neurology*. 1992;42(1):10–4.
- Stone J, Smyth R, Carson A, Warlow C, Sharpe M. Systematic review of the prevalence and nature of conversion symptoms. *Br J Clin Res Ed*. 2005;331(75):103–10.
- Stone X, Ansseau M, Paré M, et al. A case of myasthenia gravis associated with conversion disorder. *Rev Med Bruxelles*. 2004;25(4):221–4.

Conversion Disorder

- Akyuz G, Kundakci T, Kiziltan E, Dogan M. Childhood trauma, dissociation, and psychiatric comorbidity in patients with conversion disorder. *Am J Psychiatry*. 2004;161(12):2271–6.
- Neihem FG, Smith GR. Somatoform disorders. In: Simeon HI, Saddock BJ, editors. *Comprehensive textbook of psychiatry/VI*. 6th ed. Baltimore: Lippincott & Wilkins; 1995. p. 1251–70.
- Lewis-Fernandez R. Culture and conversion disorder: implications for DSM-5. *Psychiatry*. 2013;4(3):187–206.
- Acciai PJ, Rubio-Stipece M, Canino G. Ataque de nervios in the Puerto Rican Diagnostic Interview Schedule: the impact of cultural categories on panic epidemiology. *Cult Med Psychiatry*. 2013;37(3):275–95.
- Slavney PR, Slavney PR. The perspectives of psychosomatics. 2nd ed. Baltimore: John Hopkins University Press; 1983.
- Stein A. Conversion disorder: advances in our understanding. *Can Med Assoc J*. 2011;183(8):50–5.
- Staines WR, Feinstein A. Unexplained organic symptoms: an fMRI study of sensory conversion disorder. *Neurology*. 2006;67(11):2036–8.
- Halligan PW, Fink GR, Wade DT, Blomhoff RS. The functional anatomy of a hysterical stroke. *Cognition*. 1997;64(1):B1–8.
- Umiker-Sebe P, Chicherio C, Assal F, Schwartz S, Danion D, Landis T. Functional neuroanatomical correlates of hysterical sensorimotor loss. *Brain*. 2004;127(6):1077–90.
- Leenders KL, Vogt BA, Leenders KL. Increased activity in cingulate cortex in conversion disorder: what does it mean? *J Neurol Sci*. 2010;289(1–2):155–8.
- de Leeuw FE, Klumpers UM, Kappelle JJ, Gijn J. Prevalence and predictors of unexplained neurological symptoms in an academic neurology outpatient clinic—an observational study. *Neurology*. 2004;63(1):66–71.
- Carson A, Duncan R, Coleman R, Roberts R, Hibberd C, Murray G, Cull R, Pelosi A, Mathews K, Goldbeck R, Smyth R, Macmahon AD, Sharpe M. Symptoms 'explained by organic disease' in 1144 new neurological patients: how often does the diagnosis change at follow-up? *Brain*. 2009;132(10):2878–88.
- McBride CM. Conversion symptoms. In: McBride CM, editor. *Signs and symptoms: applied pathologic physiology and clinical interpretation*. Philadelphia: Lippincott; 1970. p. 650–68.
- Ford CV, Regan WM. Conversion symptoms in the general hospital. *Psychosomatics*. 1984;25(4):291–5.
- Push PI, Mazurek MF. Treatment of conversion disorder in the 21st century: have we moved beyond the couch? *Curr Treat Options Neurol*. 2013;15(3):255–66.
- Smyth R, Carson A, Warlow C, Sharpe M. The indifference in conversion symptoms and hysteria: systematic review. *Br J Psychiatry*. 2006;188:204–9.
- Lang AE. Phenomenology of psychogenic movement disorders. In: *Psychogenic movement disorders and other conversion disorders*. New York: Cambridge University press; 2011. p. 6–9.
- Watson CG, Buranen C. The frequency and identification of false positive conversion reactions. *J Nerv Ment Dis*. 1979;167(4):243–7.
- Worden RE, Johnson EW, Burk RD. Diagnosis of hysterical paralysis. *Arch Phys Med Rehabil*. 1961;42:122–3.
- Trimble MR. Pseudoseizures. *Neurol Clin*. 1986;4(3):531–48.
- Chabrol H, Peresson G, Clanet M. Lack of specificity of the traditional criteria for conversion disorders. *Eur Psychiatry*. 1995;10(6):317–9.
- Gould R, Miller BL, Goldberg MA, Benson DF. The validity of hysterical signs and symptoms. *J Nerv Mental Dis*. 1986;174(10):593–7.
- Ziv I, Djaldetti R, Zoldan Y, Avraham M, Melamed E. Diagnosis of "non-organic" limb paresis by a novel objective motor assessment: the quantitative Hoover's test. *J Neurol*. 1998;245(12):797–802.
- Eames P. Hysteria following brain injury. *J Neurol Neurosurg Psychiatry*. 1992;55(11):1046–53.
- Stone J, Smyth R, Carson A, Lewis S, Prescott R, Warlow C, Sharpe M. Systematic review of misdiagnosis of conversion symptoms and "hysteria". *Br Med J (Clin Res Ed)*. 2005;331(7523):989.
- Coton X, Ansseau M, Parent M, Jadot M, Ernolle D. A case of myasthenia gravis diagnosed as conversion disorder. *Rev Med Liege*. 1999;54(9):722–4.
- Booij HA, Hamburger HL, Jobsis GJ, Beuerle Kruyt ND. Stroke mimicking conversion disorder in two young women who put their feet back on the ground. *Pract Neurol*. 2012;12(3):179–81.
- Bowman ES, Markand ON. Psychodynamics of psychiatric diagnoses of pseudoseizure subjects. *J Psychiatry*. 1996;153(1):57–63.
- Fink P, Steen Hansen M, Sondergaard L. Somatoform disorders among first-time referrals to a neurology service. *Psychosomatics*. 2005;46(6):540–8.
- Mokleby K, Blomhoff S, Malt UF, Dahlstrom Taubøll E, Gjerstad L. Psychiatric comorbidity and hostility in patients with psychogenic nonepileptic seizures compared with somatoform disorders and healthy controls. *Epilepsia*. 2002;43(2):193–8.
- Nicholson TR, Stone J, Kanaan RA. Conversion disorder: a problematic diagnosis. *J Neurol Neurosurgery Psychiatry*. 2011;82(11):1267–73.
- Kirmayer LJ, Thombs BD, Jurcik T, Jarvis Guzder J. Use of an expanded version of the DSM outline for cultural formulation on a cultural consultation service. *Psychiatr Serv*. 2008;59(6):683–6.
- Stewart TD. Hysterical conversion reactions: some patient characteristics and treatment team reactions. *Arch Phys Med Rehabil*. 1983;64(7):308–10.
- Cardenas DD, Larson J, Egan KJ. Hysterical paralysis in the upper extremity of chronic pain patients. *Arch Phys Med Rehabil*. 1986;67(3):190–3.
- Herutti RJ, Levy A, Adunski A, Ohry A. Conversion motor paralysis disorder: overview and rehabilitation model. *Spinal Cord*. 2002;40(7):327–34.
- Ness D. Physical therapy management for conversion disorder: case series. *J Neurol Phys Ther*. 2007;31(1):30–9.