

# A Descriptive Study on the Clinical Correlates of Conversion Disorder

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## ABSTRACT

**Aim:** Conversion disorder is defined by the presence of deficits affecting the voluntary motor or sensory functions lacking any known neurological cause. The aim of the study is to describe the sociodemographic profile and clinical characteristics including the frequency distribution of various types of presentations of patients with conversion disorders in a tertiary care psychiatric facility and to assess the presence of depression and anxiety and its level of severity in those patients.

**Methods:** After obtaining informed consent, 50 consecutive patients who had met with the ICD-10 diagnosis criteria for conversion disorder and those who meet the inclusion/exclusion criteria, were enrolled for the study. They were interviewed using a semi-structured Performa and were administered Hospital Anxiety and Depression scale (HADS) and the results were analysed using SPSS software and interpreted.

**Results:** Majority of the study patients were young adolescents (48%), females (76%), rural residents (60%), mostly unmarried (46%). Dissociative motor disorders (30%) were the most common presentation followed by mixed dissociative disorder (26%) and Dissociative convulsions (22%). HAD scale revealed that, both depression and anxiety scores were significantly high in major number of patients.

**Conclusion:** The most common presenting symptom was that of dissociative motor type followed by dissociative convulsions with considerably high rates of depression (48%) and anxiety (54%). This made us to conclude that conversion as a phenomenon emerges to uphold its significance as a non-verbal communication process of the subconscious Mind.

**Keywords:** Conversion, Dissociation, Hysteria, Dissociative Motor Disorder, Dissociative Convulsions, Laterality, Depression, Anxiety

## INTRODUCTION

“The diagnoses that dare not speak its name” that is how hysteria was known of and there is no history of conversion disorder without mentioning hysteria, evidently it contributes a most important section of the psychiatric patient population particularly in the countries considered developing, whereas its incidence has been on the decline in the western countries. (Kamala *et al*, Aamir S *et al*)<sup>(1, 2)</sup>

Conversion disorder is defined by the presence of deficits affecting the voluntary motor or sensory functions lacking any known neurological cause, this excluding the symptoms fully explainable by a general medical condition, substance abuse or a culturally approved behaviour. The presenting symptoms of these patients are not deliberate and could imitate a neurological disease and form a major part of psychiatric patient population in developing countries. (Neki *et al*, German GA *et al*)<sup>(3, 4)</sup> In the recent past, the classification of Conversion disorder has significantly evolved. There is marked discrepancy in the psychiatric literature regarding frequency of dissociative disorder in psychiatric patients and even in general population and there has been confusion with respect to the comparative nosologies of both ICD 10, DSM IV-TR and the recent DSM 5 classification systems. (Wig NN *et al*)<sup>5</sup> Though the aetiology, pathogenesis,

phenomenology and management of these disorders continue to stir up debate, the accurate diagnosis of these patients and how these patients are spread out in the population has significant implications for their proven course.<sup>6</sup>

A few of the Indian studies shows interest on the clinical characters surrounding conversion disorder and have pointed out on the significance of stressors in various types of these disorders. (Mahli *et al*, Srinath *et al*)<sup>(7, 8)</sup>

As far as presentation of conversion disorders is concerned, almost any physical symptom can be produced but the most common manifestations are those that suggest a neurological disease, for example: paraparesis, pseudo seizures, fits of unconsciousness and aphonia. Differing from Western societies, conversion disorder is more commonly encountered and makes up to one of the most important psychiatric disorders in the subcontinent region.

The fact was that, a good number of the studies associated to conversion disorder done in western countries were by and large restricted to pseudo seizures and most studies concentrate on patients with amnesia, fugue and identity dissociations which are not found largely in the Indian sub-continent.<sup>1</sup> This paucity of proper studies stands as a hindrance to the attainment of a better knowledge of this disorder and its implication in the background of our regional and cultural diversities. In India, elevated incidence of conversion disorder erstwhile reported in unmarried young adults, with poor socio-economic status, and notably greater in females. (Vyas JN *et al*)<sup>9</sup>. Illiterates and adolescent females were also found in large number in this group. (Saxena *et al*)<sup>10</sup>

The studies on the subject of Conversion disorder are not adequate in this country, particularly in this region. For the reasons aforesaid, this descriptive study was considered to establish cultural, socio-demographic, and clinical correlates of patients afflicted by conversion disorder who are frequently seen in medical practice

and also to give a patient profile by analysing the results.

As said, not as much of is recognized from this region (South India) about the socio-demographic variables and clinical presentations with respect to conversion (dissociative) disorders and also the prevalence of depression and anxiety in such a population has been studied very rarely, hence the need for this study.

## LITERATURE REVIEW

### History

In psychiatry, most diagnoses in the yesteryears were mere descriptions of behaviour or of phenomena reported by the patient, whereas in somatic medicine a diagnosis usually includes the pathological process underlying a symptom or a syndrome.<sup>11</sup> Hence, when a group of conditions delineated as to be of somatic origin, yet for which no organic cause was apparent, terms implying aetiology were used.

The term '*hysteria*' owes its origin to the concept that the womb travels in the body and causes hysterical symptoms. During the middle Ages, possession by demons was regarded as the cause of such symptoms and the sufferers were denounced as witches. Later on, study of hysteria and so-called dissociative symptoms began at the last part of the 18<sup>th</sup> century relating the medical basis rather than the spiritual underpinnings.<sup>11</sup>

The first systematic descriptions of hypnosis were developed, by disciples of *Franz Anton Mesmer* from his theories of animal magnetism and many started to have an interest in magnetic diseases including amnesia, fugue, somnambulistic states, and alternating personality and treated them with hypnosis. *Paul Briquet* understood that distressing, traumatic, and grief-engendering experiences ended up in hysterical symptoms. Later, hysteria in conclusion was seen as a unifying model for every one of these conditions.<sup>14</sup>

*Jean Martin Charcot* then described the classic form as "*la grande crise*

*hystérique*,” which included phases such as the “prodromal,” “trance,” and also proposed the term “*functional lesion*” in an effort to resolve the absence of physical findings.<sup>12</sup> Charcot and *Pierre Janet* re-established hysteria as an basically psychological illness and postulated that the 'psychic energy' coupled with unacceptable and undesirable urges can be 'converted' into somatic symptoms which permit the release of repressed affects, and the ego is confined from experiencing them and the resulting anxiety. In the course of time this model has been so extensively adopted that it encompasses the wide range of psychosomatic illnesses.<sup>12</sup>

Soon clinical importance in dissociative phenomena had reoccurred when *Joseph Breuer* and *Sigmund Freud's* well-regarded “*Studies in Hysteria, 1893*” reflected Janet's concepts and initiated the cathartic technique of cure for hysterical disorders and then on theories on psychoanalysis began their ascendance.<sup>(14,15)</sup> *Sigmund Freud* emphasized the “*psyche and soma*” correlation, where “conversion is the mechanism whereby an internal intrapsychic conflict is unconsciously, converted into an external symptom”.<sup>16</sup>

Difficulties with terminologies and classification continue to get in the way of research in this area. Wherein, the place of conversion disorder in psychiatric classification depends on its alleged unconscious psychological mechanism and so inevitably relies on clinicians' judgment which is naturally subjective and tricky to validate.

### **Conversion and Dissociation**

Symptoms of hysteria represented unwanted emotional distress or conflict that was suppressed and kept unconscious by the individual, only to appear in the form of medically unexplainable bodily symptoms. An external symptom resolves these unconscious desires preventing a person to undergo a psychological stress, constituting the *primary gain* of illness<sup>14</sup> wherein the *secondary gain* represents the rewards that

tag along from the sick role, with benefits as extra attention, care, nursing and other special considerations. Secondary gain is the central part of the reinforcing mechanisms in the preservation of hysterical symptoms however; primary gain is part of the contributory system.<sup>16</sup>

The word 'conversion' is conventionally applied to somatic symptoms produced in the above fashion or to somatic symptoms which have a pattern due to an idea. If the symptom is psychological (e.g., a loss of memory or an external hallucination) rather than bodily (e.g., a loss of power or the presence of pain), it is regarded as dissociative.

Freud's idea that hysterical symptoms arose from the conversion of emotional energy to a physical symptom has remained in the labels for them in both ICD 10 and DSM IV while DSM 5 gives a diagnosis of “Functional Neurological Disorder” In both ICD 10 and DSM IV conversion symptoms are thought as arising from an intolerable emotional conflict. ICD 10 takes the logical step of subsuming conversion disorders under dissociative disorders. The section on these topics is entitled ‘*Dissociative [conversion] disorders*’, and the list of dissociative motor disorders includes paralysis, ataxia, aphonia, etc ICD-10 also lists dissociative amnesia and dissociative fugue, but places it under ‘Other dissociative (conversion) disorder’. ICD-10 provides two additional categories, ‘Dissociative stupor’ and Trance and possession disorders.<sup>17</sup>

Dissociative (conversion) disorders as interchangeably used, in line with the ICD 10 are further sub classified according to their presenting symptom.<sup>17</sup>

### **DISSOCIATIVE (CONVERSION) DISORDERS**

1. Dissociative Disorders of Movement and Sensation
  - a. Dissociative motor disorders
  - b. Dissociative convulsions
  - c. Dissociative anaesthesia and sensory loss

- d. Mixed dissociative [conversion] disorders
2. Dissociative amnesia
3. Dissociative fugue
4. Dissociative stupor
5. Trance and possession disorders
6. Other dissociative [conversion] disorders
  - a. Ganser's syndrome
  - b. Multiple personality disorder
  - c. Transient dissociative disorders occurring in childhood and adolescence
7. Other specified dissociative [conversion] disorders
8. Dissociative [conversion] disorder, unspecified

The universal premise shared by dissociative (or conversion) disorders is a partial/complete loss of the usual integration between immediate sensations, command over bodily movements, memories of one's past, and awareness of self identity.<sup>17</sup>

There is an Estimate of (20-25%) admitted to a general medical hospital with conversion symptoms at some time during life and (5-16%) on several psychiatric consultation services are referred for support in diagnosis, treatment and management of conversion symptoms<sup>18</sup>

Dissociative amnesia has been reported in approximately 1.8 to 6 percent of general population samples, with 7.3 percent (sample of Turkish women) meeting diagnostic criteria. Cases of dissociative fugue in the Sar V *et al* study found a lifetime prevalence of 0.2 percent, lowest for any dissociative disorder.<sup>30</sup>

### Age and Sex

In a study by Kamala *et al*, incidence of conversion disorders was found to be higher in females (92.5%) than in males (7.5%),<sup>1</sup> and a majority of their patients were young adults in the 18-29 years age group (57.5%), followed by those in the 6-17 years age group (32.5%) in concordance with previous studies by Vyas *et al*, Bagadia *et al* and Choudhury *et al*.<sup>(9, 21, 22)</sup> These findings evidently support previously established findings of dominance of

conversion disorder in females. Malik *et al* found 95% of his study sample of conversion disorder patients were females and the commonest age group was (13-19 years) whereas, Chandrasekaran *et al* found that the start of the disorder is more common at (16-20)years of age which is consistent with findings from other studies by Alexander *et al* (19-21 years) and Guze *et al* (24 years).<sup>(23-26)</sup>

Social bias leads to the tendency that conversion disorder in female sex is insignificant and possibly will be cured by home remedies; a medical remedy is sought for when it occurs in males because they are considered the breadwinners of the family.<sup>27</sup>

### Marital Status, Literacy and Socio-Economic Status

Marriage is protective against the occurrence of medical morbidity and mortality as well as psychiatric illnesses especially in conversion disorders too. Evidently Kamala *et al* found that there were literates commonly in their study (80%); most of whom had finished only 10 or less than 10 years of formal education.<sup>1</sup> Their predominant study sample was of students (50%) and hence they were mostly unmarried (72.5%). This is in contrast with the findings by Choudhury *et al*, Jain and Verma *et al*, who found housewives and married group to be their predominant group in their study.<sup>(22,28)</sup> Akhtar *et al* found 60% of his study subjects were single (unmarried) in contrast to a Turkish study, Sar V *et al* which showed with 24% married patients.<sup>(29,30)</sup>

Similarly, Akhtar *et al* found that most of his study subjects also had lower socioeconomic status.<sup>29</sup> Results by Alvi *et al* suggest that most of the participants belonged to lower 23 (46%) and middle 27 (54%) socioeconomic classes.<sup>31</sup> Conversion Disorder has been reported to be more frequent in uneducated or primary school group population, middle- low economic group, unemployed men and housewives.

## **TYPES OF CLINICAL PRESENTATION**

### **Dissociative Disorders of Movement and Sensation**

#### **Dissociative Motor Disorders Paresis/Paralyses**

Paralyses may affect one or more limbs, or one side of the face. And an interesting finding is the laterality of symptoms frequently involving the left side of the body. They may be flaccid or occur with contractures.<sup>31</sup> 'Frozen shoulder' is a common modern example of supposed hysterical contracture; a partially frozen shoulder, or arm, which is limited in movement is usually related to a physical cause.

#### **Abnormal Movements**

Certain abnormal movements such as facial tics, tremors, blepharospasm, dyskinesia, and Tourette's syndrome were often thought to be psychological in origin. Occasionally blepharospasm can accompany a depressive illness or other emotional changes and remit with them.

#### **Dissociative Convulsions**

Hysterical seizures or non-epileptic seizures or psychogenic seizures as they are also called occur only in the presence of an audience and may be precipitated by stressor or by a potentially traumatic event. The fall to the ground is not usually abrupt or quick, but rather more gradual. Movements may follow the fall with clutching, but the characteristic regular tonic-clonic sequence of epilepsy is not found.<sup>34</sup> Incontinence of urine and tongue biting are infrequent in hysterical fits whereas the corneal reflexes are preserved, and the plantar responses are flexor, unless previously abnormal. Firm handling and pressure on the supraorbital nerves to the point of pain may arouse the patient.

#### **Hyperventilation**

Anxious patients may hyperventilate and feel short of and over breathe. The fall in carbon dioxide blood levels can result in

carpopedal spasms, loss of consciousness, and epileptiform convulsions. Hyperventilation as a symptom of conversion is very common, but is principally due to anxiety.

#### **Globus Hystericus**

'Globus' or Difficulty in swallowing can present hysterically. Lehtinen *et al* confirmed the classical syndrome as a 'median or paramedian feeling of an unidentified object or lump in the pharynx'. The symptom is related with dry swallowing, or the need to dry swallow, and disappears through eating. Historically, globus was almost always found in women and was called 'suffocation of the mother'. The symptom was also linked with the idea that the uterus could wander and block the channels of respiration.<sup>35</sup>

#### **Aphonia**

Defined as the lack of vocalization or phonation different from mutism, which is the complete absence of speech. Dissociative aphonia is characterized by a normal ability to cough. Examination with a direct laryngoscope shows normal vocal cord movement with respiration. Though western literature shows very few evidences of aphonic, dysphonic or mute presentations, in the Indian sub-continent it is a common occurrence.<sup>36</sup>

#### **Dissociative Anaesthesia and Sensory Loss**

##### **Blindness**

Hysterical blindness is thought to be common in ophthalmological practice and is often incomplete. It may present as blurring of vision or difficulty in reading. Another pseudo neuro-ophthalmologic presentation was ptosis. Presence of ipsilateral eyebrow depression with pseudoptosis rather than the brow elevation is the diagnostic clue. Evoked-potential studies will help to demonstrate intact visual pathways. Other evidence on the processing of visual information may be obtained by finding

discrepancies in reading different sizes of print at different distances.<sup>37</sup>

### **Deafness**

Hysterical deafness is quite rare in psychiatric practice but was common among soldiers exposed to blast injury. Absolute hysterical deafness can be detected during sleep because noise may awaken the patient. Incomplete hysterical deafness is only likely to be diagnosed through audiological testing.<sup>36</sup>

### **Peripheral Nerve Sensory Loss**

Dissociative sensory loss may involve half the entire body from top to toe or from right to left. It may affect the whole of a limb, and characteristically has a glove or stocking distribution on the arms or legs, or both. The sensory loss fails to fit in with known anatomical and physiological boundaries. Dissociative sensory loss is likely to stop sharply at the midline, while non-hysterical sensory change will only approach the midline since at this point segmental nerves overlap by 1 or 2 cm on each side.<sup>37</sup>

### **Laterality & Dissociation**

Functional motor and sensory symptoms such as weakness, tremor, and numbness are often unilateral and are said to be more common on the left side of the body than the right. (Trimble *et al*)<sup>39</sup> this apparent asymmetry of symptoms has led to much assumption that is this left sided preponderance due to functional asymmetry of emotional processing favouring the right hemisphere? J Stone *et al* in their analysis of the systematic review of studies proposing this finding the proportion of left sided symptoms overall was slightly above that in the general population at 16% and studied various factors that could be involved.<sup>38</sup>

### **Dissociative Amnesia**

The crucial feature of dissociative amnesia is a lack of ability to recall vital personal information, generally of a traumatic nature, that is too extensive to be

explained by usual forgetfulness. There is a reversible memory impairment in which islands of memories for own experience that would normally be accessible for recall to the conscious mind cannot be retrieved. (Wilson *et al*)<sup>40</sup>

### **Dissociative fugue**

The common feature is as sudden, unforeseen travel away from home or one's routine place of daily activities, with lack of ability to recall some or all of one's past accompanied by uncertainty about personal identity or assumption of a fresh identity causing considerable impairment in social and occupational functioning. After the termination of a fugue, the patient may experience perplexity, confusion, trance-like behaviours, depersonalization, and conversion symptoms, in addition to amnesia. But fugue episodes are a thing of rare occurrence in the Indian literature with very few case studies reporting such behaviour.<sup>41</sup>

### **Dissociative Stupor**

Stupor is diagnosed on the foundation of a profound reduction or absence of voluntary movement and normal responsiveness to external stimuli such as light, noise, and touch.

The person lies or sits for the most part motionless for extensive periods of time with speech and spontaneous purposeful movements are totally absent. Individual is neither asleep nor unconscious even though some degree of disturbance of consciousness might be seen. It ought to be differentiated from stupor of catatonia and depressive /manic stupor<sup>17</sup>

### **Dissociative trance and possession disorders**

These are disorders that manifest by a temporary, striking alteration in the state of consciousness or by loss of the sense of personal identity without the replacement by an alternate sense of identity in which reduction of responsiveness of the immediate surroundings or a discerning

focus on stimuli within the environment occurs.<sup>17</sup>

### Possession Trance

The initial onset is an acute triggering stressor followed shortly by convulsive or uncontrolled movements, trembling, flailing, or fainting. Then, the individual may lapse into a stupor or may appear to be struggling in the grip of an unseen force, when, suddenly, a distinctly different personality emerges. A dramatic physical and psychological transformation occurs in the individual's face, voice, demeanour, and behaviour as the altered identity may claim to be a deity, demon, spirit, ghost, deceased relative. Being a sharply time-limited condition (usually hours), it is usually related to immediate stressors where the possessing personality seeks to differentiate itself as external to the victim, and projects to the public with its stereotypical speech and behaviour.<sup>17</sup> The Indian psychiatric literature shows, possession syndrome or hysterical possession is the most common form of dissociative disorder, whereas dissociative identity disorder is thought to be rare.

### Dissociative Identity Disorder/ Multiple Personality Disorder

Dissociative identity disorder (formerly multiple personality disorder) requires 'the presence of two or more distinct identities, or personality states, each with its own relatively enduring pattern of perceiving, relating to, and thinking about the environment and self.

At least two of these identities or personality states must recurrently take control of the person's behaviour. There should also be inability to recall important personal information that is too extensive to be explained by ordinary forgetfulness.<sup>29</sup> Individuals with dissociative identity disorder frequently report having experienced severe physical and sexual abuse, especially during childhood.

Kamala *et al* found motor symptoms were the commonest presentation (87.5%)<sup>1</sup>

in her study, of which pseudo seizure (71.4%) was the most frequent. This is dissimilar to the findings by Alvi *et al* who found mixed dissociative disorder symptoms as the single largest category of presentation among the motor symptoms to be the commonest.<sup>31</sup> Malik *et al* found that the most common presenting disorder in their study was dissociative seizures (63%), which is constant with results of other similar studies.<sup>23</sup> similarly; Stone J *et al* and other studies reported that dissociative motor disorder was the commonest presentation.<sup>38</sup>

### Depression, Anxiety and Dissociation

Although psychiatric behaviour can seemingly be absent or masked, one key aspect, indicating that a relationship between conversion disorder, depression and anxiety disorders plays a significant role, is the documented co-morbidity of these illnesses.

Dissociation is by and large correlated with and high general psychiatric co morbidity (particularly major depression and various anxiety disorders) regardless of the main diagnosis. (Seritan *et al*)<sup>42</sup> There was high frequency of scores of anxiety (60%) and depression (61%) in patients presented with dissociative (conversion) disorder in their study that reflects the findings of other studies by Uguz *et al*, Stone *et al*,<sup>(43,44)</sup> Mazhar Malik's study at Fauji Foundation Hospital Rawalpindi showed considerably high rates of depression (61%) in conversion disorder patients.<sup>23</sup> whereas a study by Akhtar *et al* showed 76% were depressed among these patients.<sup>29</sup>

Anxiety symptoms common in patients with conversion disorder include panic attacks, nightmares and flashbacks. Earlier literature had already focused on the strong association between depression and conversion disorder<sup>(6, 9)</sup> The tendency to express emotional distress and discomfort in somatic terms is more among the less educated and lower social class persons, in particular cultures, among the ethnic groups

that discourage expression of emotions and among rural dwellers (Crandell and Dohrenwand, 1967). This also depends upon the concept of illness the people perceive in their particular Cultures.<sup>45</sup>

Alarming situations may also produce symptoms resembling hysterical complaints, such as loss of sight or hearing, the occurrence of aphonia, belief in loss of the ability to use the limbs, overt paralysis, and amnesia. Zeigler *et al* from an analytic standpoint, argues that in hysteria, the urge causing the anxiety is changed into functional symptoms which serve to reduce consciously felt anxiety.<sup>46</sup>

### **Role model/Modelling/Identification**

“Role model” has been seen in conversion disorder in some prior studies (Srinath *et al*, 1997). A role is “an automatic learned goal-directed pattern or sequence of acts developed under the influence of significant people in a growing child’s environment”.<sup>8</sup> Patients with conversion disorder may unconsciously replicate their symptoms on those of someone near or important to them. In her study Kamala *et al* found that Role models were present in 52.5% of the cases.<sup>1</sup> With pathological grief reaction, bereaved persons commonly have symptoms of the deceased. It is explained as how a patient may “identify” his problems with a person close to him and may even replicate the exact symptoms.

## **MATERIALS & METHODS**

This was a hospital based cross sectional descriptive study, conducted at Government Rajaji Hospital, Madurai for a period of six months. Approval from the Institutional Ethical Committee was obtained. The sample for this study was chosen from psychiatry outpatient department and comprised of those with age group (13-60) of both sexes and who have had met with the ICD-10 (International classification of mental disorders, 10th edition) diagnostic criteria as Conversion (Dissociative) Disorders were included while patients with any other co-morbid

Psychiatric disorders except (Depression & Anxiety) and with evidence of major systemic illness, organic brain disorder or neurological disorders (including seizures), with history of severe head injury, history of substance dependence, patients with Learning difficulties/Intellectual disability and Patient/ Guardian who were not willing to consent for the study were excluded.

Depending on the inclusion and exclusion criteria, every consecutive patient diagnosed with this disorder for the first time, till the attainment of a sample size of 50, were included in the study using convenient sampling. The subjects were explained about the nature of the study and an informed written consent was obtained. They were then interviewed using a semi-structured Performa that included demographic profile assessment, detailed psychiatric history, personality profile and other psychosocial characteristics. Subsequently in order to rule out organic causes all these subjects underwent complete neurologic, internal medicinal and laboratory evaluations that were reviewed for each patient which consisted of the necessary radiological and laboratory evaluations, i.e.; routine blood and urinetests, EEG and in the case of any specific indication, CT and MRI were also done (as needed). TOOLS USED were Semi-structured Performa for socio-demographic details, Modified Kuppaswamy’s socio-economic status scale 2012 and Hospital Anxiety and Depression Scale. These tests were administered in a quiet room in a fixed pre-set order according to standard administration instructions.

### **Kuppaswamy’s Socioeconomic Status Scale Revised-2012**

Socioeconomic scale consists of scores based on three variables namely education, occupation, and income on the basis of ten-point scale. It consists of ten categories are grouped with 5 social class namely very high, high, upper middle, lower middle and very low. Socio Economic

Status is a recognized determinant of wellbeing. Kuppaswamy's socioeconomic status scale is an essential tool in hospital and community-based research in India. Proposed originally in 1976, the scale was revised in 2012 where the monthly family income was modified based on current consumer price index. (BP Ravi Kumar *et al*).<sup>47</sup>

**Hospital Anxiety and Depression Scale (HADS)**, developed to identify states of anxiety, depression, and emotional distress, is a self-assessment scale and applied among patients who are being treated for an array of clinical disorders (Zigmond & Snaith *et al*)<sup>48</sup>

It has a total of 14 items, with responses scored on a scale of 0-3, with 3 signifying elevated symptom frequencies. Score for each subscale for depression and anxiety ranges from 0 to 21 with scores categorized as: Normal (0-7), Mild (8-10), Moderate (11-14), Severe (15-21). Higher Scores on the whole scale assesses emotional distress with scores ranging from 0-42, where higher scores representing distress. It takes on an average 2 to 5 minutes to complete.

**Statistical Analysis**

Statistical design was formulated using the data collected as above, for each of the scales and sociodemographic variables the descriptive statistics including the central values and dispersion were found. Moreover, for single variable distribution analysis Chi square test-goodness of fit test was used. In further study of the data, Karl Pearson's correlation coefficient (Chi-square test) for categorical variables and student t test and one way ANOVA for numerical variables were used. For testing several independent samples Kruskal Wallis H test was used. The data was analysed by means of the Statistical package for Social Sciences (SPSS) version 17.0 for Windows. "p" value of < 0.05 was considered as significant.

**RESULT**

The socio-demographic characteristics of the subjects were observed and analysed. Throughout this study, the following notations were used for convenience. \*<0.05, \*\*<0.01

A total of 50 outpatients with confirmed diagnosis of Conversion (dissociative) disorders according to ICD 10 criteria were included. The age ranged from 13 to 58 years with a mean of 25.84±12.19 years. The mean age for the female and male group was 26.74±12.78 and 23±10.06 years respectively. A majority of the subjects were females 38(76%), and most were in the age group of range 13-20 years 24(48%), followed by 21-40 years age group 17(34%). Figure 2 shows a greater part of them to be unmarried 23(46%) followed by the Married group (36%), while separated/divorced group formed 9(18%). Almost 30(60%) of the lot were from a rural background. (Table 1)

**Table 1: Socio-demographic profile of the subjects (n = 50)**

Variable	Variants	N	(%)
Age	13-20	24	48
	21-40	17	34
	41-60	9	18
Sex	Male	12	24
	Female	38	76
Marital Status	Single/unmarried	23	46.0
	Married	18	36.0
	Separated/divorced	9	18.0
Religion	Hindu	35	70.0
	Christian	7	14.0
	Muslim	5	10.0
	Others	3	6.0
Rural/Urban	Rural	30	60.0
	Urban	20	40.0

Table 1 shows socio demographic profile of Conversion disorder patients.

Table 2 shows majority of our study subjects were from a low socioeconomic status 40(80%) About 27(54%) of the study subjects were educated, where Students formed a greater part of the subjects, hence were unemployed.

The subjects presented with different physical symptoms, which were categorized according to International Classification of Disease-10 Mental and Behavioural Disorders-Diagnostic Criteria for Research. (Table 3)

**Table 2: Socio-demographic profile of the subjects (n = 50)**

Variable	Variants	N	(%)
Education	Illiterate	8	16.0
	Primary school	15	30.0
	Middle school	9	18.0
	High school certificate	11	22.0
	Post high school diploma	6	12.0
	Graduate or PG	1	2.0
Occupation	Unemployed	12	24.0
	Unskilled work	15	30.0
	Semiskilled work	11	22.0
	Skilled work	5	10.0
	Cleric/ shop owner /farmer	6	12.0
	Semi profession	0	0.0
	Profession	1	2.0
Income	No income	16	32.0
	<1600	5	10.0
	1601-4809	15	30.0
	4810-8009	4	8.0
	8010-12019	4	8.0
	12010-16019	1	2.0
	16020-32049	4	8.0
>32050	1	2.0	
Socio-Economic status	Upper (26-29)	1	2.0
	Upper middle (16-25)	2	4.0
	Lower middle (11-15)	7	14.0
	Upper lower (5-10)	30	60.0
	Lower <5	10	20.0

**Table 3: Distribution of Types of Presentation**

Variable	Variants	N	(%)
Types of Presentation	Dissociative Convulsions	11	22.0
	Dissociative Motor Disorders	15	30.0
	Dissociative Anesthesia & Sensory Loss	2	4.0
	Mixed Dissociative Disorders	13	26.0
	Trance & Possession Disorders	4	8.0
	Dissociative Amnesia / Fugue/Stupor	3	6.0
	Other Dissociative Disorders	2	4.0
	Total	50	100.0

Table 3 shows “Dissociative Motor disorders” 15(30%) (*Paresis, hyperventilation, dizziness, limb paralysis, aphonia/dysphonia and astasia abasia*) were the most common type of clinical presentation, followed by “Mixed dissociative disorders” 13(26%). As many as 11(22%) of the subjects presented with “Dissociative convulsions (pseudo seizures)” and 4 cases (8%) presented as a “Trance/possession disorders”. Subjects presenting with amnesia/fugue and stupor were totally 3(6%) while 2(4%) subjects each were categorized under “Dissociative anaesthesia and sensory loss” and “Other dissociative disorders” that in turn included one case of multiple personality disorder.

**Table 4: Laterality of Dissociative Motor/Sensory Symptoms**

Laterality	Frequency	Percent %
Generalized	20	40.0
Left	18	36.0
Right	3	6.0
Not applicable	9	18.0
Total	50	100.0

Table 4 shows Interestingly 41 of the 50 cases were assessed for laterality of the presenting symptom, where 20(40%) of the symptoms were generalized, a major bulk of 18(36%) lateralized to the left side.

**Table 5: Distribution of Birth order, Role Models**

Variable	Variants	N	(%)
BIRTH ORDER	1	15	30.0
	2	27	54.0
	3	8	16.0
ROLE MODEL	Absent	22	44.0
	Present	28	56.0

Table 5 As observed the Birth order of these patients, a large part fell under the second birth 26(54%) category followed by first birth 15(30%). According to our study, about 28(56%) of the subjects had a definite Role model and interestingly among them nearly many were their closest of kin.

**Table 6: Frequency of Depression in Conversion Disorder**

HADS-D	Frequency	Percent	HADS-D Score	
			Mean	SD
No Depression	26	52.0	7.8600	4.11076
Mild	13	26.0		
Moderate	6	12.0		
Severe	5	10.0		
Total	50	100.0		

**Table 7: Frequency of Anxiety in Conversion disorder**

HADS-A	FREQUENCY	PERCENT	HADS-A SCORE	
			MEAN	SD
No Anxiety	23	46.0	8.3400	4.36877
Mild	16	32.0		
Moderate	5	10.0		
Severe	6	12.0		
Total	50	100.0		

Table 6 and Table 7 depict the prevalence of Depression and Anxiety among the study subjects, with HADS-depression & anxiety subscale scores showing a mean of 7.86±4.11 and 8.34± 4.36 respectively.

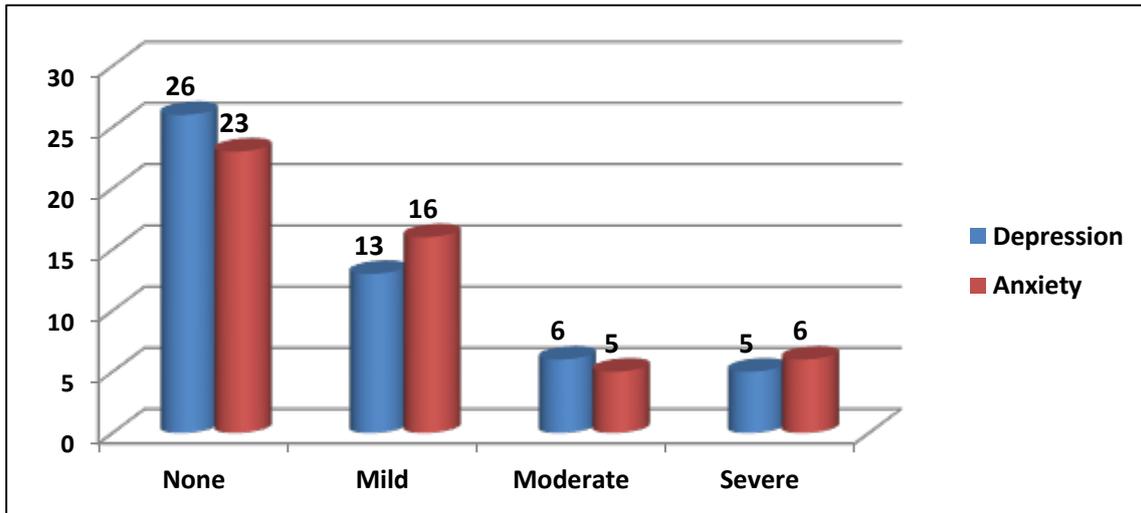


Figure 1: Distribution of Depression and Anxiety & its Severity

Figure 1 Shows Severity of Depression & Anxiety in these Subjects

Table 8: Pearson's Chi-Square Test for Socio Demographic Data

Variables	$\chi^2$	df degree of freedom	'p' value
Age	6.760	21	.034*
Sex	13.520	1	.000**
Marital Status	6.040	2	.049*
Religion	54.640	3	.000**
Education	13.360	5	.020*
Occupation	16.240	6	.006**
Income	38.960	7	.000**
Socio-Economic Status	55.400	4	.000**

Note \* $p < 0.05$ , \*\* $p < 0.01$

Table 8 shows, Chi square test applying goodness of fit for sociodemographic variables which showed statistically significant difference for all the above variables

Table 9: Pearson's Chi Square Test for Clinical Correlates

Variables	$\chi^2$	df	'p' value
Types of Presentation	26.720	6	.000**
Birth Order	11.080	2	.004**
Role Model	.720	1	.396
HADS-D	22.480	3	.000**
HADS-A	17.680	3	.001**

\* $p < 0.05$ , \*\* $p < 0.01$  HADS-D, HADS-A (Hospital Anxiety and Depression Scale)

Table 9 shows goodness of fit test using Chi square, where all the clinical variables except Role model were found to have statistical significance.

## DISCUSSION

It is convenient and less threatening to express the somatic distress rather than

emotional distress that forms the basis for conversion symptoms and our study tried to explore the factors thereof.

## Age and Sex

The average age was 25.84 years, suggesting that the young adult age is hugely vulnerable for conversion disorder. There was declining tendency of the conversion disorder patients as the age increased, with very high number of the cases falling in the first group (13-20 years). Conversion disorder was more common amongst the female gender as the distribution showed 76% of cases being female and only 24% were male. (Table 1)

Our study has also shown that the beginning of the disorder is more common between the ages of (13-20) years which were consistent with the study by Chandrasekaran *et al.*<sup>24</sup> indicating the same. It has been reported by Kuloglu *et al.*<sup>27</sup> that this disorder can occur at any age but it is more frequent in adolescents and young adults which was also supported by Goodyer *et al.*<sup>48</sup> Kamala *et al.* saw a large group of their study sample landing in the young adults' group while in contrast with the results of our study where a major part were adolescents (13-20) followed by young adult group (21-40).<sup>1</sup> It is worried that early onset conversion symptoms have an inclination to become persistent even though the symptoms may lessen from

period to period. Thus, the commonality of this disorder in the adolescent population should be observed in future. (Table 8)

The demographic factors identified in this study revealed that majority of the patients were young females; proportion of female patients in our study is in broad agreement with the numerous other studies by Vyas *et al*, Bagadia *et al*, Choudhury *et al*, (9,21,22) Uguz *et al* and Sar *et al*. (43,30) In a study by Kuloglu *et al* the ratio of female patients is much higher than that of male patients, nearly 3:1 also in the west of Turkey female-male ratio is 10:1, similar to above said studies.<sup>27</sup> Moreover, these findings obviously support already established findings of prevalence of conversion disorder. Since 76% of the cases in our study are females, it can be theorized that women cannot articulate their feelings sufficiently and also somatization of the internal suffering (conflicts) is more common in them, as a result conversion may perhaps be interpreted as a non-verbal communication process, consequently, conversion disorder is more common in women.

The home remedies for female patients with conversion symptoms advised by religious healers and by and large other members in the family is that she may become free from the disease if she gets married and hence get them married at a very early age.

### **Marital status, Education and Socioeconomic status**

The predominant study population was students; hence most of them were unmarried (46%) and the next larger category were Married (36%). This result was in line with a Turkish study where only 24% of patients were married and a study where 33% to be married which is in contrast with the findings by Jain and Verma *et al* and Choudhury *et al*., who found housewives and married to be their predominant group. (22, 28) (Table 1) (Table 8)

The fact that a large number of our study sample being students presently continuing their schooling, naturally they were unemployed and almost many were unmarried. This made them the primary group in our study. On the other hand, 18% of patients were either separated or divorced, this was important in the sense that scored high on co morbid anxiety and depression symptoms on HADS scale.

Majority of subjects in the study by Kamala *et al* were literate (80%) with less than 10 years of formal education which can be similarly compared with our study results where 54% had more than 5 years of formal education. It was observed that the education level of our study group was average, with 54% of them were educated up to primary level of education whereas in other studies contrasting results were seen. <sup>1</sup>

Lower socioeconomic levels and rural background go hand in hand as with our study results showing evidence for the same with 80% from upper lower and lower socioeconomic groups and 60% of them coming from a rural background. As rural domicile was a predominant part of the region studied, the test results were not shocking. (27)

Along with a poor academic level, increasing number of traumatic events, more family conflicts and poorly understood coping skills in this region, patients presenting with such symptoms almost every single time end up in magico-religious settings or in the faith healers' hands. In concordance with these factors, a major part (70%) of the study group was from a Hindu religious background which was not surprising as Hindus form the major religion in this region of study. We also see in our study that Christian patients formed 14% which was over representation of the normal population. we hypothesize that, in our study population the cultural and social attitudes teach people to think of these symptoms to be the ill effects of a dark power or as a means of anger expressed by their Gods or as a life changing spiritual phenomenon, so naturally end up with more

spiritual rather than a mere medical explanation to this disorder.

### **Birth order and Conversion**

We had checked for the birth order of the study subjects and interestingly found that most of the subjects were the second (54%) of the family followed by patients as first born of the family (30%). As with many studies revealing positive correlations between birth order and other psychiatric disorders we tried to establish any association between birth order and clinical presentations of conversion disorder, and to find a common factor that may help in understanding the disorder better. Apart from a study by Kamala *et al*<sup>1</sup> which showed third birth group as their predominant sample no other reliable researches were available on this regard. (Table 5) (Table 9)

### **Role models and Conversion**

In patients with conversion, identifying their unconscious conflicts through a role model to express the symptom forms the base to study the role of modelling. Role models were present in 56% of the cases comparing to Kamala *et al* who found 52.5% role models in their patients.<sup>1</sup> Role models here were identified mostly as persons closely related to the patients or even close friends. Study of these role models and the process of modelling throw light into the clinical profile of these patients and how they form a pattern parting information to learn more about conversion as a disorder. (Table 5) (Table 9)

### **Types of Presentation**

In our study, dissociative motor disorder (30%) was the most common conversion subtype followed by mixed dissociative disorder (26%) and then dissociative convulsions (22%). Similar results were noted in studies by Guze *et al* and Stone *et al*<sup>(19,38)</sup> while study by Uguz *et al*<sup>43</sup> confirms convulsions to be the commonest presentation and Alvi *et al*

found mixed dissociative disorders to be the commonest.<sup>31</sup> (Table 3) (Table 9)

Kamala *et al* found in their study that pseudo seizure (71.4%) was the most frequent presentation but in our study, it was only 22%. This is in contrast to the findings by Roelofs *et al.* who found dissociative motor symptoms (paresis/paralysis) to be the commonest akin to our study results.<sup>1</sup> Additionally, in this region, the majority of the patients with conversion disorder seek help from religious healers because of their religious interpretations of the illness. This situation may cause long duration of illness and thus the problem of persistence of the illness into adulthood was also thought of, according to Roy *et al.*<sup>49</sup>

4 cases (8%) presented as a “Trance/possession disorders” which compared to the common Indian population and its socio-cultural and religious background was less.

Subjects presenting with Dissociative amnesia/fugue and stupor were totally 3(6%) while 2(4%) subjects each were categorized under “Dissociative anaesthesia and sensory loss” and “Other dissociative disorders” that in turn included one case of multiple personality disorder.

### **Laterality and Conversion symptoms**

By confiding by various proposed hypothesis, excluding those symptoms such as amnesia, stupor and trance disorders as not applicable, we found that a major portion of the motor symptoms were lateralized to the left side (36%) followed only by generalized (40%) type of presentations. (Table 4) Likewise, Dissociative paresis and paralysis was the commonest of presentations to be lateralized to the left side followed by dissociative convulsions. Studying the laterality in connection to the symptoms gives a broader view about the structural and biological models of conversion disorder. Based on the detailed analytical study by Stone *et al*, our study too tries to implicate that the laterality of a patient’s symptoms should not be used to judge whether symptoms are likely to be

related with identifiable neurological disease.<sup>19</sup> (Table 9)

### Depression and Conversion

Our study showed that high proportion of conversion co existed with depression as seen by a considerably high 24(48%) of them having it. This correlated well with Akhtar *et al* who found 76% depression in his study subjects. Findings of the study conducted by Wah Cantt, showed 74% of their study patients to have depression and anxiety<sup>29</sup> (Table 6)

Similar Study result was seen in Northern Ireland where, 13 out of 20 patients had co morbid depression. Studies by Uguz *et al* and Sagduyu *et al* also show the comparable results.<sup>(43, 50)</sup> The high scores on HADS depression scale and significantly high proportion of patients suffering from severe depression indicates that the majority of the patients presenting with dissociative (conversion) disorder have an underlying depressive illness.<sup>50</sup> Inability of these patients, in presenting psychological symptoms of depression, results in presentation in the form of dissociative disorder which receives more attention. (Table 9) (Figure 1)

### Anxiety and Conversion

It has been reported by Roy *et al* that the most commonly associated disorders in conversion reaction are: depressive disorders, somatization disorder, panic disorder, evidently in our study Anxiety symptoms were found to be in 27(54%) with a mean score in HADS anxiety subscale was  $(8.34 \pm 4.36)$ .<sup>49</sup> (Table 7) (Figure 1)

Though the process of conversion also involves anxiety, it is possible that anxiety can operate separately as an independent factor as seen in our study. So, recognition and treatment of underlying anxiety, needs to be considered for patients presenting with dissociative (conversion) disorder. Hence the presence of depression and anxiety both as an etiological factor and as a co morbid factor in patients with

dissociation has been extensively proved by recent studies as evident in our study too. This gives us a conclusion that these factors are hugely inter related, so derangement or dysfunction in any of these domains may significantly reflect in the other. (Table 9)

Eventually, it can be certain that conversion disorder will continue to be an important disorder in Southern India as long as the ensuing settings persist in the midst of people i.e., Existence of financial, marital and traumatic problems with poorly adapted coping skills, viewing conversion symptoms through religious and cultural dark glasses, Non acceptance of conversion as a disorder in the population, and misconceptions regarding the management, among the non psychiatrists, are to name a few. Pseudo neurologic syndromes very frequently occur, and primary care physicians be supposed to be aware of them. A proper history and physical examination give the best clues to an accurate diagnosis, which saves time and money by avoiding extensive and costly investigations and prevent agony these procedures cause.

The Patients with hysterical symptoms deserve the same empathetic treatment as any other patient. They are behaving in what seems to be the only cultural and situational manner fitting for them. They should on no account be ignored or ridiculed. Instead, they must be given the time, support, and back-up required going back to normal function.

### CONCLUSION

By observing and analysing these patients with conversion disorder, the following conclusions were made.

Adolescent and young adult females were the major proportion to present with Conversion symptoms. A major section of these patients was unmarried and belonged to the rural population and lower socio-economic status. A major part of them were students, so were unemployed while a huge fraction belonged to the Hindu religion. Large proportions of them had definite Role models as a model for their presenting

symptom and a majority of the cases were the second born child of the family.

The most common of the presenting symptom was that of dissociative motor type in particular paresis/ paralysis and convulsion symptoms forming the major bulk while the least common were dissociative amnesia, fugue and dissociative identity disorder presentations.

The key role of depression and anxiety symptoms along with variable clinical parameters in the pattern of presentations of conversion disorder appears to be undeniable. Pre-existing subclinical depression and anxiety may make certain individuals more vulnerable to conversion disorder in the aftermath of a trauma. Most of the patients seek help from religious healers as the first line of treatment owing to their religious and cultural beliefs. In the event of these findings, we may come to a conclusion that conversion emerges to uphold its significance as a non-verbal communication process and in view of the fact that conversion disorder is one of the commonest psychiatric disorders in our set up; and based on our study findings there is need for further studies on this subject at the community and socio-cultural level.

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