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Patterns of Conversion Disorder cases reported at neurological outpatient clinic.

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ABSTRACT… Objectives: This study was carried out to see the commonest presenting symptoms of conversion disorder attending Neurology Department Liaquat University of Medical & Health Sciences Jamshoro/Hyderabad. **Study Design:** Cross-sectional study. **Setting:** Department of Neurology Outpatient at Liaquat University Hospital, Hyderabad, Pakistan. **Period:** September 2017 to August 2019. **Material & Methods:** Sample size of 111 was estimated using Open epi online sample size calculator by taking statistics of conversion disorder as 63%, margin of error as 9% and 95% confidence level. All patients of age more than 9 years of either gender diagnosed as conversion disorder were included in the study using non-probability consecutive sampling technique. **Results:** A total of 111 patients were registered. 33 (29.7%) were male and 78 (70.3%) were females with male to female ratio of 0.4. The age ranged from 10 years to 30 years and the mean age was 23.30 ± 9.94. Out of 111 patients 47 (42.3%) were married and 64 (57.7%) were unmarried. On the other hand majority of patients having conversion disorders 51 (45.9%) had no formal education or educated up to primary 28 (25.2%). Most common symptom was episodic loss of consciousness 24 (21.6%) followed by seizure like activity 23 (20.7%), aphonia 9 (8.1%) & headache 7 (6.3%). **Conclusion:** The results from our study showed conversion disorders with unexplained symptoms are relatively common in outpatient neurology clinics.

Key words: Conversion Disorders, Functional Neurological Disorders, Headache, Seizure Like Activity, Tremors.

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INTRODUCTION

Conversion disorder is characterized by neurological symptoms that areincompatible with organic damage to the nervous system and not explained by physical examination and diagnostic testing[1,2] It should be at least one symptom of alteredvoluntary motor or sensory function.However, conversion disorder is not rare conditions, with prevalence rates of 1 to 3 % in the general population[3,4] and attain approximately 3 to 5% of all new neurological out-patients.[5] Symptoms associated with conversion disorders are not under the individual's voluntary control, although the severity of the symptoms may be modulated by the patient under certain circumstances. Nevertheless, factitious disorders & malingering are also characterized by unexplained symptoms, but production of these symptoms is under voluntary control.[6] Diagnostic and Statistical Manual of Mental Disorders, 4th Edition describes four subtypes of conversion disorder: conversion disorder with motor symptom or deficit; with sensory symptom or deficit; with seizures or convulsions; and with mixed presentation. Conversion disorder may present at any age but is rare in children younger than 10 years or in the elderly & typically femalesoutnumber the male.[7]

This psychiatric disorder exists in theboundary between neurology and psychiatry, soit may acquire multi etiological factors existing from historical relevance of the disorder in relation to hysteria and the current knowledge of neurological background.[6,8] Psychological trauma and its repression is highly plausible and often associated with the onset of conversion disorder.[7] In current neurological findings thosebrain areas

whichare essential for motor-planning, motor-selection or autonomic response seems to be relevant.[3]

Symptoms unexplained by organic disease, conversion disorders are second most common presentation after headache reported in neurological outpatient clinic.[9] These are ranging from motor and sensory, signs and symptoms include motor weakness or paralysis, abnormal movements, swallowing symptoms, speech symptoms, attacks or seizures, anaesthesia or sensory loss, or mixed symptoms.[10]

The clinical presentation of conversion disorders somewhat differs in different regions of world & depend upon the local taboos and rituals. This study was planned to see the commonest presenting symptoms of conversion disorder at tertiary care Hospital from 2nd largest city of sindh. It may enable to evaluate, manage and rehabilitate these patients and make liaisons with psychiatric facility.Up till now no such study has been done here in past to reveal the spectrum of symptoms related to conversion disorder.

MATERIAL & METHODS

This was a cross-sectional study conducted at the neurology outpatient department at Liaquat University Hospital, Hyderabad, Pakistan. Sample size of 111 was estimated using Open epi online sample size calculator by taking statistics of conversion disorder as 63%[11], margin of error as 9% and 95% confidence level. All patients of age more than 9 years of either gender diagnosed as conversion disorder were included in the study using non-probability consecutive sampling technique. The patients suffering from organic brain disease, physical illnesses, psychiatric co morbidity other than anxiety and depression, learning disability, substance abuse, those having language barrier, those who refused to participate in study were excluded from the study.

The study protocol was approved by the Research Ethical Committee of Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan. An informed consent was obtained from the participants. Afterobtaining demographic information, all patients were evaluated by consultantNeurologist to exclude any motor or sensory abnormality and Conversion Disorder diagnosis was established based on an extensive neurologicalworkup and DSM-5 criteria.[1] Semi-structured pro-forma was filled to distinguish the different patterns of conversion disorder.

Statistical Package for the Social Sciences for Windows software (SPSS 20. for Windows/ SPSS) was used for statistical processing and analysis of the collected data. Frequency and percentages were reported for all the categorical variables and mean with SD was computed for all the quantitative variables. Cross-tabulation was done between conversion disorders and age and gender.

RESULTS

A total of 111 patients were registered through Out Patient Department (OPD) of Neurology Jamshoro/Hyderabad & Neurology department at Liaquat university of Medical & health sciences (LUMHS) Hospital Jamshoro. Out of these 33 (29.7%) were male and 78 (70.3%) were females with male to female ratio of 0.4. The age ranged from 10 years to 30 years and the mean age was 23.30 ± 9.94 (Figure-1). Out of 111 patients 47 (42.3%) were married and 64 (57.7%) were unmarried. On the other hand majority of patients having conversion disorders 51 (45.9%) had no formal education or educated up to primary 28 (25.2%). Overall basic characteristics of study group as shown Table-I.

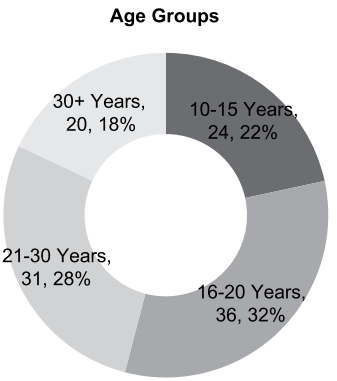
Frequency distribution of age is displayed in Figure-1. Most of the patients were of age 16-20 years (32%).

The frequency of major categories of conversion disorder including episodic loss of consciousness, seizure like activity, aphoniaheadache, tremor in rt upper limb and odd vocalization was 33%, 19%, 7%, 9%, 4%, 1%, 2%, 16% and 9% respectively (Table-II).

Cross tabulation of Functional Neurologic disorders with Age and gender are shown in Table-III and IV.

	n	Percent %
Total patients enrolled (N)	111	
Gender		
Male	33	29.7
Female	78	70.3
Age		
Minimum	10	
Maximum	60	
Mean ± SD	23.30 ± 9.94	
Median (Q1-Q3)	20 (16 - 27)	
Marital Status		
Married	47	42.3
Unmarried	64	57.7
Education		
No Formal Education	51	45.9
Primary	28	25.2
Matriculation	11	9.9
Intermediate	8	7.2
Graduation	11	9.9
Masters	2	1.8

Table-I. Basic characteristics of study population



DISCUSSION

Conversion disorder presents with symptoms that typically resemble a neurological disorder. These symptoms are attributed to conversion disorder when a medical explanation for the afflictions cannot be found.[12] Symptoms of conversion disorder usually occur suddenly. Patient with functional neurologic disorder do not have voluntary control over their symptoms, this all happens at subconscious level. Majority of these patients first visit to primary care physician or Neurologist rather than Psychiatrist.[13] Conversion disorder present as physical symptoms represent underlying psychological distress most of time. As a result of the conversion symptoms, a patient may gain the attention and support of loved ones and may be removed from situations that require his or her responsibility.[14]

Complains	N	%
Episodic Loss Consciousness	24	21.6%
Seizure Like Activity	23	20.7%
Aphonia	9	8.1%
Headache	7	6.3%
Tremor R U Limb	7	6.3%
Odd Vocalization	6	5.4%
Hemiparesis R	5	4.5%
Paraparesis	4	3.6%
Abnormal Posturing of Neck	3	2.7%
Backache	3	2.7%
Monoparesis L L Limb	2	1.8%
Monoparesis R U Limb	2	1.8%
R Face Deviation	2	1.8%
Tremulousness of Trunk	2	1.8%
Abnormal Posturing of R Hand	1	0.9%
Clench Fist R Hand	1	0.9%
Dropping of Head	1	0.9%
Episodic Falls backward	1	0.9%
Episodic Hemi Anesthesia R	1	0.9%
Gait Difficulty	1	0.9%
Gait Difficulty Jumping Like	1	0.9%
Generalized stiffness of body	1	0.9%
Hemiparesis L	1	0.9%
Lack of Coordination	1	0.9%
Loss of Memory	1	0.9%
Monoparesis L U Limb	1	0.9%
Paresthesias	1	0.9%
Shouting	1	0.9%
Speech Difficulty	1	0.9%
Swallowing Difficulty	1	0.9%
Tremor Neck	1	0.9%
Tremor of Hands	1	0.9%
Tremor R Leg	1	0.9%
Tremulousness of body	1	0.9%
Triplegia	1	0.9%
Visual Loss Bilateral	1	0.9%

Table-II. Frequency wise distribution of all functional neurologic disorders.
(Note: R-Right, L-Left, L-Lower, U-Upper)

S. No	Complains	10-15 Y	16-20 Y	21-30 Y	30+ Years	Total
1	Abnormal Posturing of Neck	1	2	0	0	3
2	Abnormal Posturing of R Hand	0	1	0	0	1
3	Aphonia	0	4	4	1	9
4	Backache	0	3	0	0	3
5	Clench Fist R Hand	1	0	0	0	1
6	Dropping of Head	1	0	0	0	1
7	Episodic Falls backward	0	0	0	1	1
8	Episodic Hemi Anesthesia R	0	0	1	0	1
9	Gait Difficulty	1	0	1	0	2
10	Generalized stiffness of body	0	0	1	0	1
11	Headache	4	1	2	0	7
12	Hemiparesis L	0	0	0	1	1
13	Hemiparesis R	0	0	3	2	5
14	Lack of Coordination	0	0	1	0	1
15	Loss of Memory	0	0	0	1	1
16	Monoparesis L L Limb	0	1	1	0	2
17	Monoparesis L U Limb	0	0	0	1	1
18	Monoparesis R U Limb	1	1	0	0	2
19	Odd Vocalization	1	3	1	1	6
20	Paraparesis	0	1	1	2	4
21	Paresthesias	0	0	1	0	1
22	R Face Deviation	1	1	0	0	2
23	Seizure Like Activity	7	11	1	4	23
24	Shouting	0	1	0	0	1
25	Speech Difficulty	0	1	0	0	1
26	Swallowing Difficulty	1	0	0	0	1
27	Tremor Neck	1	0	0	0	1
28	Tremor of Hands	0	0	1	0	1
29	Tremor R Leg	0	0	1	0	1
30	Tremor R U Limb	0	0	4	3	7
31	Tremulousness of body	0	1	0	0	1
32	Tremulousness of Trunk	1	1	0	0	2
33	Triplegia	0	0	0	1	1
34	Visual Loss Bilateral	1	0	0	0	1
35	Episodic Loss Conscious	4	9	8	3	24

Table-III. Cross tabulation of functional neurologic disorders with age

Diagnosis of conversion disorderis very challenging. It requires detailed history, appropriate neurological examination & many times various diagnostic tools applied in order to exclude underlying neurologic/medical conditions.[3,15] In addition psychiatric assessment is cornerstone to reveal concomitant or underlying psychological condition. Meanwhile it is also necessary to separate a conditions so called factitious & malingering disorders which simulate functional disorders by producing physical symptoms.[9,16]

Conversion disorder may present at any age but is rare in children younger than 10 years or in the elderly.[17] In the present study, 25% of the patients with conversion disorders were of age 10-15 years whereas 60% of the patients were of age more than 16 years. Conversion disorder is usually seen in women[17] and it is also evident by the current study, 70.3% of the patients were females.

S. No	Complains	Male	Female	Total
1	Abnormal Posturing of Neck	1	2	3
2	Abnormal Posturing of R Hand	0	1	1
3	Aphonia	2	7	9
4	Backache	0	3	3
5	Clench Fist R Hand	0	1	1
6	Dropping of Head	0	1	1
7	Episodic Falls backward	1	0	1
8	Episodic Hemi Anesthesia R	0	1	1
9	Gait Difficulty	1	1	2
10	Generalized stiffness of body	1	0	1
11	Headache	2	5	7
12	Hemiparesis L	0	1	1
13	Hemiparesis R	2	3	5
14	Lack of Coordination	0	1	1
15	Loss of Memory	0	1	1
16	Monoparesis L L Limb	0	2	2
17	Monoparesis L U Limb	0	1	1
18	Monoparesis R U Limb	0	2	2
19	Odd Vocalization	2	4	6
20	Paraparesis	2	2	4
21	Paresthesias	0	1	1
22	R Face Deviation	2	0	2
23	Seizure Like Activity	9	14	23
24	Shouting	0	1	1
25	Speech Difficulty	0	1	1
26	Swallowing Difficulty	1	0	1
27	Tremor Neck	0	1	1
28	Tremor of Hands	1	0	1
29	Tremor R Leg	0	1	1
30	Tremor R U Limb	4	3	7
31	Tremulousness of body	0	1	1
32	Tremulousness of Trunk	0	2	2
33	Triplegia	1	0	1
34	Visual Loss Bilateral	0	1	1
35	Episodic Loss Consciousness	6	18	24

Table-IV. Cross tabulation of functional neurologic disorders with sex

This study reviewed 111 patients with neurologically unexplained symptoms and after detailed history examination and necessary investigations found to be sufferers of conversion disorder. Common symptoms or patterns found in this study were episodic loss of consciousness, seizure like activity, aphonia headache, tremor in right upper limb and odd vocalization that is also comparable with previous studies which also showed similar patterns of presentation a low incidence of neurological conditions that might have explained their initial symptoms (3 out of 69 patients). Seventy five percent of their sample had a psychiatric diagnosis (predominantly affective, anxiety, or somatization disorders) at presentation, and 45% were diagnosed with a personality disorder. In a follow-up study by Binzer and Kullgren, none of the 30 patients with Conversion Disorder was subsequently reclassified as suffering from a neurological disease.[18] By contrast, a study in 10 patients (somatization disorder ($n = 6$), undifferentiated somatoform disorder ($n = 4$)) showed increased bilateral caudate volumes compared to controls.[19] In another study, 20 women with somatization disorder compared to controls showed smaller

bilateral amygdalar volumes.[20]

CONCLUSION

Conversion disorder with unexplained symptoms are relatively common in outpatient neurology clinics. Diagnosis of these patients requires careful & detailed history taking, thorough neurological assessment and whenever necessary required investigation to exclude organic disorders. Outcome of functional neurologic symptoms is poor. Neurologists need to work in collaboration with (liaison) psychiatrists, psychologists, and general practitioners to develop treatment programmes for patients with functional neurological symptoms.

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2	Abdul Hafeez Bughio	Study design, Data collection and Review.	
3	Muhammad Raza	Supervision of study.	