

## Research Article

# Demographic data and clinical characteristics of patients with functional neurological (conversion) disorder



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### Abstract

**Background:** The causes of emergence of conversion/functional neurological symptoms has been debated since before Freud, but the relationship between trauma and symptoms remains unclear. This study aimed to assess the effect of sociodemographic characteristics and the development of conversion disorder. **Methods:** We retrospectively reviewed patients who attended Australia's first functional neurology clinic between 2014 and 2019. We reviewed patients' medical records, including referral and clinic letters formulating their assessment after interview by two psychiatrists, as well as a clinic questionnaire. **Results:** There were 106 females, 43 males and five transgender patients. Sensory (51%), motor (47%) and seizures (39%) were the most commonly reported functional symptoms, males and females showed differences in their types of conversion symptoms: females had more gait problems ( $p=0.004$ ) than males who experienced more impaired consciousness ( $p=0.006$ ). Females were more prone to childhood sexual abuse ( $p<0.001$ ) and adult other health issues ( $p=0.039$ ). Finally, three transgender patients experienced work problems before their illness ( $p=0.027$ ). **Conclusion:** Demographic data and clinical characteristics of patients impacted the emergence of conversion disorder.

**Keywords:** gender, age, conversion disorders

### Introduction

Conversion disorder (CD) is a very common presentation in neurological settings, accounting for around one sixth of outpatient neurology referrals<sup>(1)</sup>. Though it presents with neurological symptoms, it was considered a psychiatric disorder for over a century, because its symptoms did not appear to correspond with the growing understanding of neuropathology, and because psychogenic models gained acceptance, notably those of Pierre Janet<sup>(2)</sup> and Sigmund Freud<sup>(3)</sup>. These shared the aetiological view that psychosocial trauma were causative events, though they disagreed on the mechanism, and what kind of events might therefore be responsible<sup>(4)</sup>. In this study we aim to examine the association between the demographic and clinical characteristics and the

occurrence of conversion (functional neurological) symptoms.

### Patients and Methods

#### Patients and study design

We retrospectively reviewed all patients with CD who were assessed at the Functional Neurology Clinic, Austin Health, Melbourne, Australia between 2014 and 2019, and who had completed a questionnaire of demographic and clinical data. All patients were asked to complete a baseline questionnaire, and were assessed by a psychiatrist before review by the consultant neuropsychiatrist; further investigations, assessments, management and follow-up were arranged either in the clinic or locally, depending on the symptom and where the patient lived.

Some of the Data has been previously published<sup>(19)</sup>.

### Measures

Demographic data was acquired from patients' questionnaires by administrative staff. Patients' symptoms during their present illness were classified into fourteen reported symptom groups: Where appropriate, symptoms' laterality was determined (right, left or both).

We assessed both childhood trauma and adulthood events from the letters, noting when adult trauma preceded their illness. We also recorded personal and family psychiatric history.

### Statistical analysis

Statistical Package for the Social Sciences (SPSS) program version 25 was used for the analysis. The analysis was descriptive as well as quantitative. Chi-square tests and Fisher's exact test were used to determine associations between psychosocial traumas and conversion symptoms, as well as associations with gender. The level of statistical significance was established at  $p \leq 0.05$ .

### Results

#### Patient demographics and characteristics

One hundred and fifty-nine patients were assessed: 154 (96.8%) patients' diagnoses were confirmed as conversion disorder, with the other five (3%) excluded, as their primary diagnoses were instead multi-system atrophy, frontal lobe epilepsy, organic dystonia, postural hypertension and panic disorder. Of the 154 patients with CD, 106 (68.8%) were female, 43

(27.9%) male, and five (3.2%) were transgender. Patients' ages ranged from 17-77, median 41. Thirty-three patients (24.6%) were living with spouse/partner. Sixty-one patients (45.9%) were unemployed because of their illness. Twenty-five patients (18.4%) had completed a bachelor's degree or higher.

#### Psychiatric Comorbidity

There was substantial psychiatric comorbidity, with 94 patients (65%) reporting comorbidity with depression, 73 patients (51%) had anxiety symptoms, 68 (53%) had a history of suicidal ideation and 44 (35%) a history of self-harm. Depression was the commonly reported psychiatric illness in patients' families (43%). (Table 2)

#### Functional (conversion) presentation

Sensory symptoms, motor weakness and seizures were the most common symptoms reported by our patients (figure 1). Thirty-two patients (21%) also reported fatigue. There was an association between the gender of patients and type of psychological trauma - females were more vulnerable to sexual abuse ( $p < 0.001$ ) during their childhood and other health issues in adulthood ( $p = 0.039$ ). Additionally, there was a gender difference in the vulnerability to specific conversion symptoms, in that women experienced more functional gait and speech difficulties than men, who experienced more impairment of consciousness ( $p = 0.004$ ,  $0.048$  and  $0.006$ , respectively) (see table 3). Finally, though the number of transgender patients was small, 3 of 5 reported significant work problems before their illnesses began ( $p = 0.027$ ).

**Table (1): Sociodemographic characteristics**

Variable	Frequency (% of respondents)
<b>Gender (n=154)</b>	
Female patients	106 (69)
Male patients	43 (28)
Gender dysphoria/transition	5 (3)
<b>Living with (n=134)</b>	
Husband/wife/steady partner	33 (24)
Spouse/partner and children	25 (19)
Children (but not spouse/partner)	11 (8)
Parents	31 (23)
Alone	19 (14)
Other	15 (11)
<b>Employment status (n=133)</b>	
Full time employment (paid)	11 (8)
Part time employment (paid)	19 (14)
Voluntary work (unpaid)	7 (5)
Registered as unemployed but available for work	3 (2)
Unemployed due to illness	61 (46)
Stay at home parent	9 (7)
Student	6 (5)
Retired	3 (2)
Other	14 (11)

**Table (2): Psychiatric comorbidities**

Variable	Frequency (% of respondents)
<b>Psychiatric comorbidities (n=144)</b>	
Depression	94 (65)
Anxiety	73 (51)
Panic disorder	26 (18)
Mania	8 (6)
Psychoses	9 (6)
Alcohol dependence	10 (7)
PTSD	18 (12)
Borderline personality disorder	18 (12)
Suicidal ideation	68 (53)
Suicidal behaviour	44 (35)
<b>Family psychiatric history (n=111)</b>	
Depression	48 (43)
Anxiety	22 (20)
Panic disorder	3 (3)
Mania	14 (13)
Psychoses	12 (11)
Alcohol dependence	24 (22)
Other substance dependence	6 (5)
PTSD	5 (5)

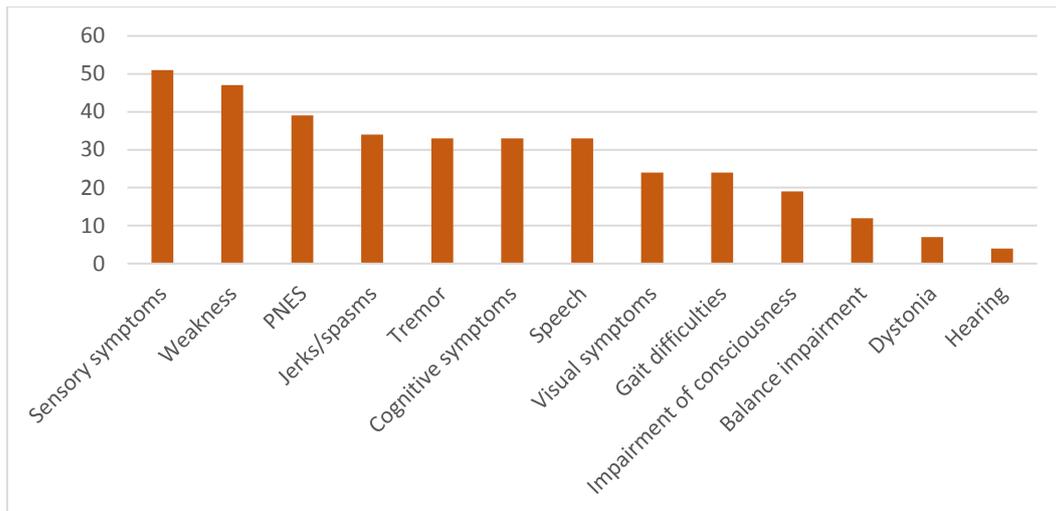


Figure (1): Percentage of sample reporting each conversion symptom

Table (3): Gender vulnerability to stressor and/or conversion symptoms

Gender	Conversion symptom/Trauma	p-value
Male	Impairment of consciousness	0.006*
Female	Gait difficulty	0.0041*
Female	Speech problem	0.048*
Female	Childhood sexual abuse	0.0001*
Female	Adult other health event	0.039*
Transgender	Work event	0.0271*

**Discussion**

The clinic’s sample is comparable with other studies in conversion disorder in many respects, remarkably the female preponderance and high rates of unemployment, and supports some stereotypes (lower educational attainment) but not others (less ethnically diverse). The striking number of transgender patients has not been previously noted in FND, but may be because transgenderism itself has not been regularly reported in clinical samples previously. In regards clinical presentation, sensory symptoms and weakness were the most commonly reported symptoms in our sample, similar to the only other Australian outpatient study of this type of which we are aware<sup>(5)</sup>, but relatively different to comparable studies from some countries where PNES feature more prominently<sup>(6)</sup>, raising again the unanswered question of cultural determinants of symptom presentation in conversion disorder<sup>(7)</sup>. Left-sided symptoms were more common, as has been frequently observed<sup>(8)</sup>. The vast majority of our

patients had at least one stressful life event before their illness (81% events in childhood and 92% events in adulthood), with emotional abuse<sup>(9)</sup> and relationship events<sup>(10-12)</sup> the most commonly experienced in childhood and adulthood, respectively, as reported by other studies.

The associations of gender and symptom is also perhaps a way of understanding the potentially confounding role of gender, rather than a point about conversion disorder and trauma. The associations of gender with trauma types, such as females and childhood sexual trauma, are not necessarily new, and likely reflect the differential social roles, of caring burdens on women, for example. Again, we confirm differences in a conversion disorder sample, as others have found<sup>(13-16)</sup> Associations of gender with symptom are more novel, though have been noted before<sup>(17)</sup> though not necessarily in the same direction as we found<sup>(18)</sup>.

The limitation in our study relied on its retrospective nature, and depend on patient

reporting and doctor recording, all potent sources of bias

### Conclusion

Demographic data and clinical characteristics of patients impacted the emergence of conversion disorder

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