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Diagnosis and management of functional neurological symptoms: The Dutch experience

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ABSTRACT

Objectives: Functional neurological symptoms (FNS) were considered as a psychiatric disorder at the beginning of the 20th century (conversion disorder). Psychiatrists performed diagnosis and treatment throughout most of the past century in the Netherlands, but in the latest decades patients were usually firstly referred to neurologists. The aim of this study was to investigate the opinions of today's neurologists, psychiatrists and rehabilitation physicians in the Netherlands, regarding pathogenesis, diagnosis and treatment of FNS.
Design: An electronic questionnaire was sent to all neurologists registered with the Dutch Society for Neurology and to the members of the Department for Consultation-liaison and General Hospital Psychiatry.
Results: 343 of 780 neurologists, 64 of 197 psychiatrists and 47 of 750 rehabilitation physicians completed the questionnaire. 60% of neurologists and 67% of psychiatrists considered disordered brain functioning together with psychogenic factors responsible for FNS. 29% of neurologists and 88% of psychiatrists felt a psychiatrist was needed for diagnosis. 55% of neurologists and 88% of psychiatrists preferred combined treatment consisting of explaining FNS to patients, psychotherapy and physiotherapy provided by a therapist trained in FNS. 15% of neurologists preferred only physiotherapy.
Conclusion: Most neurologists and psychiatrists did not consider FNS as a mere psychiatric disorder, but counted disordered brain functioning together with psychogenic factors responsible for FNS. Subsequently, according to the majority of neurologists and psychiatrists FNS should not be solely diagnosed and treated by psychiatrists. These results can help to formulate treatment strategies.

1. Introduction

Functional neurological symptoms (FNS) are symptoms that cannot be ascribed to any known neurological disease. FNS is among the most frequently made diagnoses in neurological practice [1,2]. Yet treatment is troublesome [3,4] and most patients fail to substantially improve [5–7]. Charcot viewed FNS as a neurological disorder in the 19th century, but objective evidence for the neurological origin of FNS was lacking at that time [8]. Subsequently, Freud developed a psychogenic theory at the beginning of the 20th century, in which emotional stressors are converted into physical symptoms [9]. The term conversion disorder originates from this model. Exact data is not available, but we estimate that until recently the majority of patients with FNS in the Netherlands were referred to a psychiatrist for diagnosis and treatment [8].

Opinions on pathogenesis, diagnosis and treatment have changed over the years [10,11]. Psychogenic factors cannot be determined in every FNS patient, moreover, neurologists often base their diagnosis on a careful neurological examination and identification of positive clinical findings suggestive of a functional disorder [12]. Therefore, it is very encouraging that the association of FNS with psychogenic factors, required in the DSM-IV criteria for conversion disorder, has been omitted in the recently published DSM-5 [10,13–15]. In addition the term 'functional neurological symptom disorder' is added to the DSM-5 [13,15].

Extensive psychiatric evaluation and psychotherapy was considered the treatment strategy of first choice, but during the second half of the 20th century physiotherapy was introduced as a good alternative approach in the Netherlands. Reassurance and

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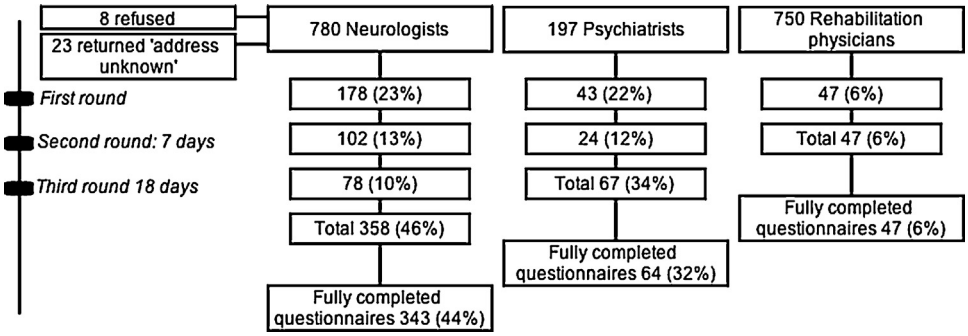

Fig. 1. Flowchart of response rates.

exercise alone was first shown to be effective in the 1980s in a study with 56 patients admitted with conversion disorder [16]. Physiotherapy is nowadays an internationally accepted therapy [17] regularly provided to patients with FNS. In the Netherlands expertise in physiotherapy for FNS can be found in some specialized centres for mental health care or rehabilitation medicine. This is, however, not a standard procedure and generally physiotherapists feel their knowledge of FNS is not sufficient to deal with FNS [18].

The aim of this study was to investigate the current opinions on FNS in the Netherlands among those who diagnose and initiate treatment. To this end, a questionnaire including questions dealing with pathogenesis, diagnosis and treatment was sent nationwide to neurologists, psychiatrists and rehabilitation physicians.

2. Methods

A requesting participation was sent to neurologists registered with the NVN (Nederlandse Vereniging voor Neurologie, 'Dutch Society for Neurology'). The contained a hyperlink to an online questionnaire at SurveyMonkey (http://www.surveymonkey.com). Response to the questionnaire was taken to indicate consent. The questionnaire consisted of 15 multiple-choice questions: 4 demographic questions and 11 questions on understanding and management of FNS for the neurologists and 12 for the psychiatrists. FNS was defined as all neurological symptoms and signs not explained by a known neurological disease (functional motor and sensory symptoms and also pseudo-seizures). Neurologists were asked not to take into account chronic fatigue, pain and dizziness. The authors of this article formulated questions, based on their expertise, the existing literature on FNS and the previously conducted studies by Kanaan et al. and Espay et al. [19,20]. These questions are shown in a Supplementary file. The questionnaire was first sent to independent external experts (three neurologists, three psychiatrists and three rehabilitation physicians) to rule out technical errors and to verify whether the questions were straightforward. Comments were taken into account before the final version was sent nationwide. A reminder was sent after 7 days to the neurologists and again after 18 days to the neurologists and psychiatrists. Every 25th respondent was given a bottle of wine as an incentive.

The questionnaire was also sent to psychiatrists registered with the ACZP (Afdeling Consultatieve en Ziekenhuispsychiatrie, 'Department for Consultation-liaison and General Hospital Psychiatry' of the Dutch Society for Psychiatry) and for the rehabilitation physicians a hyperlink to the questionnaire was placed in an electronic newsletter of the VRA (Nederlandse Vereniging voor Revalidatieartsen, 'the Dutch Society for Physical and Rehabilitation Medicine').

Only completed questionnaires were used for analysis. Data was entered into and analyzed with SPSS 21.0 (SPSS Inc.). Answers of neurologists and psychiatrists were compared using the χ^2 test for categorical data. All tests were two-tailed and $p < 0.05$ was considered to be statistically significant.

Response rates are presented in Fig. 1.

3. Results

Demographic characteristics of the participating neurologists and psychiatrists are listed in Table 1. Because of the low response rate among the rehabilitation physicians and subsequent unrepresentative results it was decided not to show the results of the questionnaires filled in by rehabilitation physicians.

3.1. Aetiology of FNS

When asking about the aetiology of FNS (Fig. 2), the majority of the neurologists (60%) and psychiatrists (67%) responded that they regarded FNS as disordered functioning of the nervous system, combined with psychogenic factors. As to provoking and predisposing factors, almost all neurologists and psychiatrists answered that stress precedes FNS: a psychogenic stressor (neurologists 94%, psychiatrists 97%) or a physical stressor (neurologists 72%, psychiatrists 77%). Seventy per cent of the neurologists and 75% of the psychiatrists believes that both a psychogenic stressor and a physical stressor are necessary to develop FNS. Sixty per cent of the neurologists and 58% of psychiatrists thought that patients usually or always develop FNS because of their personality traits or psychiatric comorbidity.

3.2. Diagnosis of FNS

Additional neurological investigation including imaging is considered necessary for diagnosis of FNS in 71% of the

Table 1
Demographics of participating neurologists and psychiatrists.

	Neurologists $N = 343$	Psychiatrists $N = 64$
Male gender, no. (%)	239 (70)	34 (53)
Age (years), no. (%)		
<41	102 (30)	11 (17)
41–45	41 (12)	4 (6)
46–50	46 (13)	11 (17)
51–55	59 (17)	10 (16)
56–60	55 (16)	17 (27)
>60	40 (12)	11 (17)
Years in practice (post-residency), no. (%)		
<6	83 (24)	9 (14)
6–10	71 (21)	8 (12)
11–20	73 (21)	23 (36)
21–30	87 (25)	19 (30)
>30	29 (9)	5 (8)
>5 patients seen with FNS per year, no. (%)	318 (93)	50 (78)