SHORT REPORT

The function of 'functional': a mixed methods investigation

Richard A Kanaan,[1] David Armstrong,[2] Simon C Wessely[1]

[1]King's College London, Department of Psychological Medicine, Institute of Psychiatry, Weston Education Centre, London, UK
[2]King's College London, Department of General Practice, London, UK

Correspondence to
Dr R Kanaan, Department of Psychological Medicine, P062, Weston Education Centre, Institute of Psychiatry, London SE5 9RJ, UK;
richard.kanaan@kcl.ac.uk

Received 18 July 2011
Revised 12 October 2011
Accepted 19 October 2011
Published Online First
16 January 2012

ABSTRACT

Objective The term 'functional' has a distinguished history, embodying a number of physiological concepts, but has increasingly come to mean 'hysterical'. The DSM-V working group proposes to use 'functional' as the official diagnostic term for medically unexplained neurological symptoms (currently known as 'conversion disorder'). This study aimed to explore the current neurological meanings of the term and to understand its resilience.

Design Mixed methods were used, first interviewing the neurologists in a large UK region and then surveying all neurologists in the UK on their use of the term.

Results The interviews revealed four dominant uses—'not organic', a physical disability, a brain disorder and a psychiatric problem—as well as considerable ambiguity. Although there was much dissatisfaction with the term, the ambiguity was also seen as useful when engaging with patients. The survey confirmed these findings, with a majority adhering to a strict interpretation of 'functional' to mean only 'not organic', but a minority employing it to mean different things in different contexts – and endorsing the view that 'functional' would one day be a neurological construct again.

Conclusions 'Functional' embodies real divisions in neurologists' conceptualisation of unexplained symptoms and, perhaps, between those of patients and neurologists: its diversity of meanings allows it to be a common term while meaning different things to different people, or at different times, and thus conceal some of the conflict in a particularly contentious area. This flexibility may help explain the term's longevity.

INTRODUCTION

'Functional' is a common term for medically unexplained symptoms. It has a much broader medical history, however, with 'function' serving as one of the organising concepts of early neurology[1] where a number of meanings evolved. Today it is strongly associated with Jean-Martin Charcot, who classified hysteria as a 'functional disorder' in that no structural lesion could be found but where a currently undetectable physiological abnormality was hypothesised.[2] This demonstrated two of the established meanings of 'functional'[3–5]—a disorder not explicable by gross anatomical lesion and a disorder explicable physiologically—and popularised a third—a psychiatric disorder, as hysteria would soon become.[1 3]

The impeccable history of 'functional' meant that the psychiatric use could be accepted as a 'place holder' for the expected physiological explication,[6] but the psychiatric soon obscured the other meanings, with associated stigma.[1 3] It has retained some popularity among neurologists as a medical term for conversion disorder[7] and been found less offensive than some of the alternatives to patients,[8] but recent commentators have considered the term fallen into misuse,[1 3 4] so it may be surprising to find 'functional' restored to eminence as the proposed replacement for 'conversion disorder' in the forthcoming DSM-5.[9 10] In this study, we aim to explore the current meaning(s) of 'functional' and to understand its lingering influence.

METHODS

This study employed mixed methods: a qualitative exploration of the uses of 'functional' in a group of consultant neurologists (ie, those whose training is complete), which guided a quantitative survey of all consultant neurologists in the UK.

Interviews

All practising consultant neurologists in a large UK region were approached, with respondents undergoing depth interviews exploring their understanding and management of conversion disorder. The meaning of 'functional' often arose naturally, but was directly enquired about at the end if it had not. Further recruitment proceeded by snowball sampling until thematic saturation was reached. Interviews were audio recorded, transcribed, coded and inductively analysed, consistent with grounded theory, using NVIVO 7 (see Kanaan and colleagues[11 12] for further details, including the interview guide).

Survey

A postal survey was sent to all consultant neurologists registered with the Association of British Neurologists. After 4 weeks, a second round was sent to non-respondents. The survey contained 33 questions exploring their understanding and management of conversion disorder. Question 30 addressed the meaning of 'functional':

If you say a conversion patient has a functional disorder, what does that mean? (tick all that apply)
a. Abnormality of brain function?
b. Abnormality of bodily function?
c. A psychiatric problem?
d. Not 'organic'?

A further question asked whether the respondent saw conversion to be neurological, 'in the same way as multiple sclerosis (MS)'.

Data were analysed with SPSS V.16. Reported p values represent χ^2 tests (see Kanaan and colleagues[13] for further details, including the full survey).

UNLOCKED

This paper is freely available online under the BMJ Journals unlocked scheme, see http://jnnp.bmj.com/site/about/unlocked.xhtml

J Neurol Neurosurg Psychiatry: first published as 10.1136/jnnp-2011-300992 on 16 January 2012. Downloaded from http://jnnp.bmj.com/ on March 28, 2024 by guest. Protected by copyright.

The local research ethics committee approved the study. All interviewees gave written informed consent; response was taken to indicate consent for the survey.

RESULTS

Interviews

Twenty-two neurologists were interviewed, of the 35 in the region. Fifteen were men and seven were women, with a median age of 45 years and a median of 20 years of neurology experience.

They described a range of uses of 'functional'. In approximate order, these were 'not organic' (seven neurologists), an alteration in brain function (n=6), a bodily dysfunction or disability (n=4) and a psychiatric/conversion disorder (n=3). Many (n=6) explicitly used it ambiguously, typically between physical disability and 'not organic' meanings:

> S15: I use it when I talk about disabilities, about real functions… or I just use it as 'medically unexplained'…

Sometimes it was used differently for different problems, sometimes in the same patient:

> S2: I might talk of somebody with MS as having some functional disability… a problem with carrying out their functions of everyday life, but I also might say …they had functional overlay …a bit of a conversion disorder on top of the true MS…

Some found this ambiguity useful in avoiding difficult discussion:

> S22: …it …enables you to say that it doesn't fit, without actually having to speculate on the psychopathology.

While others said they did not use the term because of this ambiguity, or because it insinuated a false dichotomy between structure and function, or psychiatric and neurological:

> S16: I don't see a particular reason to see somebody with …a non-organic… disorder as particularly different to a migraine …all we can say is '…I don't know the nature of this disease'.

Some saw 'functional' in its associations with functional neuroimaging and functional neurosurgery, as a herald of modernity, in which physiological explanations would be widely found:

> S3: …the fact that now there's a professor of functional neurosurgery …tells us that actually there are physical explanations for absolutely everything…

Others saw it as false confidence that this kind of dysfunction could explain the pathology:

> S9: [It] negates everything we try and tell them …that there isn't a neurological problem… they say my functional scan …says that I've got a blob in the inferior orbital frontal lobe …that's why I've got my illness.

Survey

Of the 616 neurologists of the Association of British Neurologists, 319 responded to the first round and 57 to the second round. Excluding blank surveys, wrong addresses and those who were not practising neurologists gave an adjusted response of 349 from 591 eligible subjects (59%).

The respondents were largely male (82%), with a median age range of 46–50 years and an average of 19.5 years of neurology experience.

Respondents showed a significantly unequal ($p<0.0001$) pattern of responses that roughly paralleled the frequencies of meanings from the interviews, with 'not organic' the most popular choice (table 1).

The tendency to ambiguity observed in the interviews was confirmed in a minority by the survey, with 219 neurologists employing just a single meaning, 73 using two, 29 using three and 18 using all four meanings. This ambiguous usage was not itself evenly distributed between selections, however, with the proportion of those choosing each response exclusively widely diverging ($p<0.0001$): while a clear majority of those who selected 'not organic' chose *only* that use, only a minority of those making the other selections did so (see table 1); of those who selected 'abnormality of bodily function', for example, 58% also chose 'abnormality of brain function'.

The optimism that some interviewees showed that a physiological view of 'functional disorders' would be achieved proved a minority persuasion in the survey: 10% said they saw conversion to be neurological now; 26% said they expected to one day; 63% said they thought they never would (reported in Kanaan and colleagues[13]). This co-segregated with the response to the preceding question: only 27% of those who used functional to mean 'non-organic' thought conversion was or would one day be considered neurological, compared with 50% of those who used functional to mean 'abnormality of brain function' ($p<0.0001$).

DISCUSSION

The results confirm significant ambiguity in the meaning of 'functional' among UK neurologists but with this ambiguity unevenly distributed. While a majority of neurologists hew resolutely to a strict interpretation of 'functional' as 'non-organic', a considerable minority use it to indicate abnormalities in brain or body function, or a psychiatric disorder, and that minority seem to embrace the ambiguity as offering some utility in clinical management.

There is a view among neurologists that their diagnostic obligation ends with the diagnosis—or exclusion—of neuropathology: once they have established that a problem is not 'with the wiring' they should properly remain 'agnostic' about what it otherwise is.[12 14] Those who adopt the 'non-organic' use for 'functional' can be seen as taking that line, refusing to be drawn into speculation about the nature of the disorder.

By contrast, the neurologists who employ the other uses of 'functional' do so adaptively, aware that the other meanings can have their place. It can, for example, be used to mean a disturbance of bodily function or it can be used to denote conversion disorder; and by telling a patient they have a 'functional disorder' they may encourage them to contemplate the former meaning, without being aware of the latter. The use of euphemisms or codes is extremely common in conversion disorder—three quarters of neurologists do so at least some of the time[13]—but there is also a divergence between the terms neurologists use medically and with laypeople.[7 15] One

Table 1 Responses to survey question No 30, the meaning of 'functional'

Selection	Proportion (%) choosing the selection at all	Proportion (%) of those choosing *only* that selection
Abnormal brain function	127/349 (36)	45/127 (35)
Abnormal body function	77/349 (22)	17/77 (22)
Psychiatric problem	104/349 (30)	29/104 (28)
Not organic	216/349 (62)	128/216 (59)

J Neurol Neurosurg Psychiatry: first published as 10.1136/jnnp-2011-300992 on 16 January 2012. Downloaded from http://jnnp.bmj.com/ on March 28, 2024 by guest. Protected by copyright.

advantage of 'functional' may thus be as a simplifying euphemism, allowing neurologists to use the same term to mean one thing to colleagues and another to patients. It may be precisely this ambiguity which has allowed the construct to survive despite the uncertainty and conflicts underpinning its meaning at any point in time.

The wide circulation of the term may also conceal fundamental differences on the nature of unexplained 'neurological' illness. A minority of neurologists, for example, take a functional model for conversion disorder seriously. That is to say, the vision articulated by Charcot where 'more powerful microscopes' will reveal the subtle physiological alterations underlying hysteria is seen to be a real possibility with the advent of functional neuroimaging. The functional/structural dichotomy may have broken down as the distinction between psychiatry and neurology, but some clearly see the result of that being functional, psychiatric illness welcomed back into the neurological fold.

This study is, inevitably, limited in a number of ways. The study investigated only UK neurologists; the response rates may have introduced a degree of selection bias; and responses may have been shaped by the structure of the survey and the nature of the interview despite the mixed methods approach. But this is not to suggest that there is a right answer to the question of the meaning of 'functional'. The variability of meanings identified across and within neurologists attests to the vibrancy of the construct, despite—or more likely because of—its ambiguity. Its proposed use in DSM-V indicates that in certain clinical areas ambiguity has its own function.

Funding This study was funded by Biomedical Ethics Fellowship 079743 from the Wellcome Trust. The funders had no role in the design, execution, analysis or writing of this study.

Competing interests RK had support from The Wellcome Trust for the submitted work.

Ethics approval Ethics approval was provided by King's College Hospital.

Contributors RK designed the study, collected the data, analysed the data, drafted the manuscript and acts as guarantor; DA designed the study, cleaned the data, analysed the data and edited the manuscript; SW designed the study and edited the manuscript. All authors had full access to all of the data in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

1. **Reynolds EH.** Structure and function in neurology and psychiatry. *Br J Psychiatry* 1990;**157**:481—90.
2. **Charcot JM.** *Clinical lectures on diseases of the nervous system.* London: New Sydenham Society, 1889.
3. **Trimble MR.** Functional diseases. *BMJ (Clin Res Ed)* 1982;**285**:1768—70.
4. **Kendell RE.** The distinction between mental and physical illness. *Br J Psychiatry* 2001;**178**:490—3.
5. **Fahn S.** The history of psychogenic movement disorders. In: Hallett M, Cloninger CR, Fahn S, *et al*, eds. *Psychogenic movement disorders*. Philadelphia: Lippincott Williams & Wilkins, 2005.
6. **Loughran T.** Hysteria and neurasthenia in pre-1914 British medical discourse and in histories of shell-shock. *Hist Psychiatry* 2008;**19**:25—46.
7. **Espay AJ,** Goldenhar LM, Voon V, *et al*. Opinions and clinical practices related to diagnosing and managing patients with psychogenic movement disorders: an international survey of movement disorder society members. *Mov Disord* 2009;**24**:1366—74.
8. **Stone J,** Wojcik W, Durrance D, *et al*. What should we say to patients with symptoms unexplained by disease? The "number needed to offend". *BMJ* 2002;**325**:1449—50.
9. **Stone J,** LaFrance WC Jr, Levenson JL, *et al*. Issues for DSM-5: conversion disorder. *Am J Psychiatry* 2010;**167**:626—7.
10. **Kanaan RA,** Carson A, Wessely SC, *et al*. What's so special about conversion disorder? A problem and a proposal for diagnostic classification. *Br J Psychiatry* 2010;**196**:427—8.
11. **Kanaan R,** Armstrong D, Wessely S. Limits to truth-telling: neurologists' communication in conversion disorder. *Patient Educ Couns* 2009;**77**:296—301.
12. **Kanaan R,** Armstrong D, Barnes P, *et al*. In the psychiatrist's chair: how neurologists understand conversion disorder. *Brain* 2009;**132**:2889—96.
13. **Kanaan RA,** Armstrong D, Wessely SC. Neurologists' understanding and management of conversion disorder. *J Neurol Neurosurg Psychiatry* 2011;**82**:961—6.
14. **Hallett M.** Psychogenic movement disorders: a crisis for neurology. *Curr Neurol Neurosci Rep* 2006;**6**:269—71.
15. **Mace CJ,** Trimble MR. 'Hysteria', 'functional' or 'psychogenic'? A survey of British neurologists' preferences. *J R Soc Med* 1991;**84**:471—5.

J Neurol Neurosurg Psychiatry: first published as 10.1136/jnnp-2011-300992 on 16 January 2012. Downloaded from http://jnnp.bmj.com/ on March 28, 2024 by guest. Protected by copyright.