



# Management of medically unexplained symptoms in children and young people: a secondary analysis of a 10-year audit of referrals to a Paediatric Psychology Service

Sally J Robinson <sup>1</sup>, Gillian A Colville <sup>1,2</sup>

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## ABSTRACT

This study evaluated service use of children and young people with medically unexplained symptoms (MUS) referred to a Paediatric Psychology Service between 2008 and 2017. Univariate analyses of activity data indicated that the MUS group (n=268) required more clinical sessions than other patients (n=3577) (inpatient MUS: 7.5 (12.5) vs general: 4.0 (6.0),  $p=0.006$ ; outpatient: MUS 10.7 (15.0) vs general 6.3 (8.9),  $p<0.001$ ). Multivariate analyses confirmed that MUS group status remained significantly associated ( $p<0.001$ ) with a higher number of contacts, even when age and gender were controlled for. Although both groups benefitted equally from psychological input, MUS referrals required more contact time than general referrals.

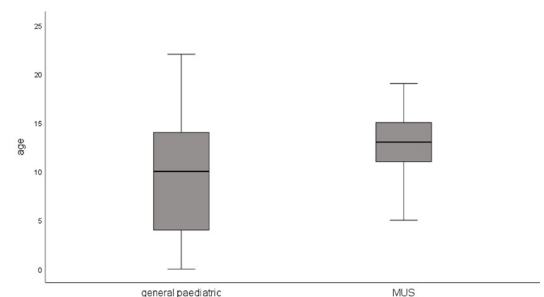
Medically unexplained symptoms (MUS) are increasingly being reconceptualised as ‘bodily distress’<sup>1</sup> and refer to persistent bodily complaints including pain, sensory changes and fatigue, for which insufficient explanatory pathology is identified. They account for a significant number of medical consultations,<sup>2</sup> with childhood presentations more common in paediatric than mental health settings.<sup>3</sup> The risk of serious economic and quality of life repercussions in adulthood of untreated MUS has led to calls for increased funding in this area of child services.<sup>4</sup>

The aim of this study was to use activity data relating to an acute hospital psychology service to inform future MUS service development. This was a retrospective review of a clinical database between 2008 and 2017. General paediatric psychology referrals were compared with MUS referrals in relation to age, gender, number of clinical appointments and whether treatment objectives (eg, return to school) were met. This secondary analysis built on previous analyses<sup>5</sup> by excluding cases referred for assessment only and controlling

for the impact of sociodemographic variables on outcomes.

Between 2008 and 2017, 268 MUS referrals and 3577 general referrals were received by the Paediatric Psychology Service. The majority of MUS referrals were from paediatric medicine, 68% (182/268), and paediatric neurology/neurosurgery, 19% (51/268). The most common symptoms were pain, 35% (94/268), primarily abdominal or headache, and functional neurological symptoms, 19% (51/268), including non-epileptic seizures, loss of speech and motor weakness. In just under half of cases, 46% (123/268), there was a coexisting medical diagnosis (eg, respiratory infection) but this did not explain impact on functioning. The treatment approach was mainly cognitive-behavioural with involvement of family and the multidisciplinary team.

The MUS referrals were more likely to be female, 56% (150/268) vs 49% (1753/3577),  $p=0.033$ , and were older, (mean (SD) 12.4 (2.7) years vs 8.9 (5.4) years,  $p<0.001$ ), with



**Figure 1** Age distribution (years) of children and young people referred for medically unexplained symptoms (n=268) compared with that of general paediatric psychology referrals (n=3577). MUS, medically unexplained symptoms.



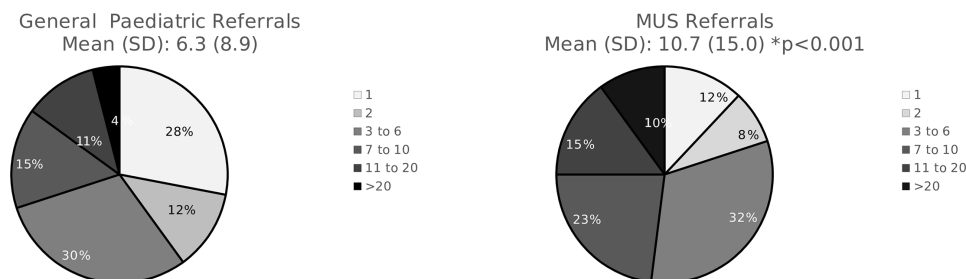
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<sup>1</sup>Paediatric Psychology Service, St George's University Hospitals NHS Foundation Trust, London, UK

<sup>2</sup>Population Health Research Institute, St George's University of London, London, UK

## Correspondence to

Dr Gillian A Colville; gcolvill@sgul.ac.uk



**Figure 2** Distribution of number of appointments provided for outpatient referrals for medically unexplained symptoms (n=114) compared with that for general paediatric psychology outpatient referrals (n=1374). MUS, medically unexplained symptoms.

age more narrowly distributed than for general referrals (figure 1).

The proportions of inpatients seen <48 hours were similar (MUS: 89% (75/84) vs general: 87% (1204/1381),  $p=0.574$ ), as were the proportions of outpatients seen <6 months (MUS: 89% (102/114) vs general: 93% (1284/1374),  $p=0.106$ ), and the proportions where treatment objectives were fully met (MUS: 68% (125/183) vs general: 71% (1868/2638),  $p=0.791$ ). However, children and young people with MUS required more mean (SD) appointments than the general group, whether as an inpatient (MUS: 7.5 (12.5) vs general: 4.0 (6.0),  $p=0.006$ ) or an outpatient (MUS: 10.7 (15.0) vs general: 6.3 (8.9),  $p<0.001$ ) (figure 2). This association between MUS group status and higher number of appointments remained significant, even when age and gender were controlled for in multivariate analyses (inpatients:  $B=3.25$  (95% CI 1.83 to 4.66),  $p<0.001$ ; outpatients:  $B=3.11$  (95% CI 1.46 to 4.76),  $p<0.001$ ).

The suggestion in the literature<sup>4</sup> that MUS are particularly resource intensive to treat was supported by the main finding of this study that MUS referrals required almost twice as many appointments as general referrals. The sociodemographic characteristics of the MUS sample were consistent with previous research in relation to age and gender,<sup>3</sup> with presentations concentrated around puberty, which may be relevant to aetiology. Strengths of this study were the sample size, the availability of data on a comparison group and the use of routinely collected contemporaneous audit data. Limitations include the fact that this was a single centre study and information was only available for a set of predetermined variables.

The findings of this study indicate that there are clear resource implications relating to this work, with MUS referrals requiring nearly double the input needed for other referrals, although encouragingly they appeared to respond equally well to psychological support.<sup>1,6</sup>

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**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

**Patient consent for publication** Not applicable.

**Ethics approval** This study involves human participants but Ethics not applicable as deemed an audit which was registered as such with the Trust Relevant Ethics Committee is St George's Research Ethics Committee. Reason for exemption: This service evaluation did not qualify as research according to the UK HRA (2022) guidance, since it did not aim to generate a new hypothesis or test a hypothesis and therefore did not require IRB ethics permissions. It was however registered with the Trust Audit Department, as it was based on routinely collected health data (Ref CADB002459).

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#### ORCID iDs

Sally J Robinson <http://orcid.org/0000-0001-8239-4354>

Gillian A Colville <http://orcid.org/0000-0001-8530-2822>

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