Understanding barriers to delirium care: a multicentre survey of knowledge and attitudes amongst UK junior doctors

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Abstract

Background: delirium is under-diagnosed and under-treated in comparison to other common and serious acute disorders. The reasons for this are unclear.

Objective: we conducted a multicentre survey of knowledge of and attitudes to delirium in trainee general physicians.

Design: questionnaire-based survey in 34 acute hospitals in the UK.

Methods: we developed a questionnaire designed to test knowledge of delirium prevalence, DSM-IV diagnostic criteria, use of specific screening tools, association with adverse outcomes, and pharmacological management. Questionnaires were completed and returned by hand to the researchers immediately after recruitment. Participants were a convenience sample of trainee doctors in general and emergency medicine.

Results: 784 trainee physicians participated. Most participants expressed the view that delirium has a high prevalence and that it is associated with serious adverse outcomes. However, they had poor knowledge of its diagnosis and treatment, reporting the need for better training. Experience working in geriatric medicine had only a modest effect on the ability to diagnose delirium.

Conclusions: UK training doctors’ lack of basic knowledge of the diagnosis and management of delirium, rather than a lack of awareness of its high prevalence and clinical significance, appears to be important in determining its under-recognition.

Keywords: delirium, questionnaire, survey, elderly

Introduction

Delirium is one of the most common acute disorders in general hospitals, affecting 11–42% of older patients [1]. Delirium independently predicts several adverse outcomes, including higher mortality, increased length of stay, long-term cognitive and functional decline and increased risk of institutionalisation [2]. Furthermore, an episode of delirium is highly distressing for patients and carers. Recognition can improve outcomes [3]. For these reasons, it is essential to identify correctly all cases of delirium and manage them appropriately in the acute hospital setting. Indeed, recent UK guidelines recommend that delirium be screened for in all older people admitted to hospital using specific assessment tools [4].

However, delirium is widely under-diagnosed in acute hospitals, with 65–75% of cases going undetected [5]. The reasons for this are uncertain. A survey of intensive care unit physicians and nurses in the USA found that respondents thought delirium was common and serious, but that only 40% conducted routine screening, with 16% using specific assessment tools [6]. There are no comparable data among general hospital physicians.

The primary research aim was to ascertain respondents’ knowledge of delirium, specifically with respect to its phenomenology and relation to adverse outcomes. Furthermore, we aimed to determine attitudes of trainee physicians towards their own understanding of delirium diagnosis and management. We therefore conducted a survey to examine this in a large sample of trainee physicians in the UK.

Methods

The questionnaire was constructed by DD and AM. It was designed to test knowledge of delirium prevalence, diagnostic criteria using DSM-IV, use of specific screening tools, association with adverse outcomes and pharmacological management. Attitudes and beliefs with respect to confidence in delirium diagnosis and clinical significance of the condition were assessed using a five-point Likert scale. Some items were
based on the recent Royal College of Physicians guidelines on the diagnosis and management of delirium in older people [4].

Through contacts within the British Geriatrics Society, we recruited a National Delirium Survey Group, which comprised 37 doctors working in 34 acute hospitals in the UK. All members of the group reviewed the draft questionnaire and approved the final version (Appendix A, available at Age and Ageing online). The questionnaire was piloted among the members, and some questions were altered for clarity without substantially changing the content of the questionnaire. Where possible, knowledge items were triangulated through a range of questions with overlapping content. For the Likert ratings, attitudinal trends were broadly intermixed to distribute the direction of responses. Use of a standardised administration procedure across several hospital doctors also strengthened its reliability (see below). The Lothian Health Board Research and Ethics Committee determined that the project did not require full committee review.

The survey period was 1st December 2006 to 31st January 2007. Participants were drawn from a convenience sample of trainee doctors in general medical and emergency medical specialties. Researchers explained the rationale to potential participants and those agreeing to proceed were asked to complete the questionnaire at the point of contact, in one sitting, without discussion, or access to books, computers or other material. Questionnaires were placed in sealed envelopes and handed back to the researchers. Anonymity was assured, and no incentives were offered.

Results
There were 784 participants working in 34 hospitals across the UK (Supplementary data 1). Participants’ mean time from qualification as doctors was 30 months (median 18 months, range 6 months to 23 years), with postgraduate experience in the following specialties: geriatric medicine (51%, N = 399); neurology (7%, N = 57), psychiatry (4%, N = 29). Given the recruitment methodology, the majority of centres reported that all potential participants approached took part in the survey, though two centres (Borders General Hospital and St George’s Hospital) had a response rate of 66% and 75%, respectively.

The main results were that there was an understanding that delirium has a high prevalence and that it is associated with serious adverse outcomes. However, there were also apparent large deficits in knowledge of the diagnostic criteria for delirium.

Knowledge of delirium prevalence and outcomes
There was wide variation in estimates of the prevalence of delirium in the questionnaire example of acutely admitted patients aged over 70 (question 1). For example, 17% (N = 135) estimated the prevalence as <5%, and 17% (N = 130) gave an estimate of >20%. Overall, 56% of respondents gave estimates consistent with the available evidence (10% or greater). Thus, a substantial percentage underestimated the prevalence of delirium. There were also wide variations in participants’ estimates of the outcomes of delirium. When asked to estimate the 1-year mortality of an average 70-year-old woman with delirium in association with urinary tract infection (question 2), 25% (N = 198) gave this as <5%, and 15% (N = 122) as >25%. Estimates of relative risk of death at 1 year following an episode of delirium for non-demented, community-dwelling patients over the age of 70 (question 5) also showed large variations, with 20% (N = 163) stating there would be no increased risk, and 17% (N = 130) stating that there would be five or 10 times the risk. There was more agreement in relation to the question of whether delirium is distressing for patients (86%, N = 675) and relatives (97%, N = 763) (question 6).

Knowledge for diagnostic criteria of delirium
Responses to the knowledge-based items did indeed suggest that participants generally had poor knowledge of the diagnostic criteria for delirium. Inattention is a core diagnostic feature of delirium, but just 32% (N = 249) recognised this. A large majority (87%, N = 682) correctly stated that acute onset was an essential criterion. Half of respondents (51%, N = 399) considered agitation an essential feature of delirium; however, only a minority of delirious patients demonstrate the hyperactive subtype in clinical practice. Visual hallucinations were considered a requirement for diagnosis by 36% (N = 282), though this feature only occurs in 30–50% of patients with delirium. Further results are shown in Table 1.

Knowledge of drug dosages in delirium treatment
Participants were asked about appropriate starting dosage of haloperidol in 70-year-old man with delirium and severe agitation in whom behavioural management had been unsuccessful (assuming no contra-indications) (question 7). The Royal College of Physicians guidelines state that the starting dose should be 0.5 mg. However, only a minority (37%, N = 290) followed this guidance, with 33% (N = 246) opting for dosages of 2.5 mg or more. Moreover, 9% (N = 70) stated that they would use benzodiazepines as first-line medications. These are important results in the context of the finding that 81% (N = 637) indicated that patients were often oversedated because of staffing constraints.

Attitudes to the importance of delirium
The vast majority (97%, N = 763) of participants agreed or strongly agreed that doctors working in acute medical settings should have a good working knowledge of delirium, and 83% (N = 740) thought that responsibility for delirium diagnosis did not lie primarily with psychiatrists. Participants largely considered delirium to be treatable (88%, N = 686).

Confidence in diagnosing and managing delirium
Only 21% (N = 163) agreed or strongly agreed that they had good knowledge of the diagnostic criteria for delirium, and 30% (N = 239) stated that they were confident in managing delirium. These results were consistent with the 81%
(N = 634) of respondents stating that delirium was under-recognised and also the small proportion of respondents stating that they had adequate training in delirium (16%, N = 129).

Self-rated knowledge of diagnostic criteria for other common acute conditions was strikingly different to that of delirium: acute coronary syndromes (90%, N = 708), pneumonia 95% (N = 741) and acute pancreatitis (77%, N = 606). A very small proportion of participants (8%, N = 64) had used validated assessment tools for delirium, such as the Confusion Assessment Method [7], and a minority (24%, N = 183) indicated that they used serial cognitive assessments.

**Effects of experience in geriatric medicine**

Specialty experience (in geriatric medicine) had limited effects on responses. Those reporting experience in geriatric medicine (51% of the sample) were more confident in their knowledge of the diagnostic criteria of delirium [28% vs. 14%, P < 0.001 (chi-square)]. Furthermore, they were more likely to report that they had adequate training in delirium (24% vs. 9%, P < 0.001), and were more likely to use the recommended starting dose of haloperidol (42% vs. 31%, P < 0.001). However, there were no significant differences with respect to the respondents’ knowledge of the diagnostic criteria for delirium.

**Discussion**

These results suggest that UK trainee physicians working with acutely ill medical patients largely recognise that delirium is common, serious, distressing and treatable. However, respondents generally lacked confidence in their diagnostic and management skills with respect to delirium. This was reflected in responses to the knowledge items, where there appear to be important gaps in basic knowledge of the diagnostic criteria for delirium, and in some respondents, appropriate drug dosages. Unfortunately, even specialty training in geriatric medicine had limited effects on delirium knowledge. Thus, lack of appreciation of the significance of delirium does not appear to be a fundamental cause of its under-recognition and under-treatment. Rather, lack of knowledge of the diagnostic criteria and standard screening tools appear to be more important.

To our knowledge, this study is the largest survey conducted on this topic among doctors. One limitation of this study relates to the use of a convenience sample, which introduces the possibility of selection bias. However, because of the large sample size and the use of 34 centres across the UK, we believe that the survey gives a useful indication of the views and practices of UK training doctors.

These results provide interesting parallels to those of a previous large survey of intensive care unit physicians and nurses [6]. In that report, 92% of respondents considered delirium to be a significant problem, but only 40% stated that they routinely screened for delirium. Delirium was also acknowledged to be an important determinant of clinical outcome of older patients by 89% of respondents. Thus, intensive care unit physicians and nurses thought that delirium was common and serious, but that it was relatively under-detected.

Delirium is very common and is clinically important. However, in comparison to other serious acute conditions,

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**Table 1. Number of correct responses to knowledge-based survey questions according to specialty experience in geriatric medicine**

<table>
<thead>
<tr>
<th>Feature required for diagnosis</th>
<th>Correct answers</th>
<th>Reference/reason</th>
<th>Specialty experience (n = 399)</th>
<th>No specialty experience (n = 351)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence estimate on acute take</td>
<td>Over 10%</td>
<td>247 (62%)</td>
<td>169 (48%)</td>
<td></td>
</tr>
<tr>
<td>Prevalent in 30%</td>
<td>T</td>
<td>Clinical standard</td>
<td>347 (87%)</td>
<td>302 (86%)</td>
</tr>
<tr>
<td>Reduced motor activity and lethargy as most common change in arousal</td>
<td>D or E</td>
<td>RCP standard</td>
<td>44 (11%)</td>
<td>18 (5%)</td>
</tr>
<tr>
<td>Benzodiazepines as first line medical treatment</td>
<td>A or B</td>
<td>RCP standard</td>
<td>320 (80%)</td>
<td>219 (62%)</td>
</tr>
<tr>
<td>Appropriate first dose of haloperidol*</td>
<td>D or E</td>
<td>RCP standard</td>
<td>170 (42%)</td>
<td>108 (31%)</td>
</tr>
<tr>
<td>Self-reported knowledge of diagnostic criteria for delirium</td>
<td></td>
<td></td>
<td>112 (28%)</td>
<td>48 (14%)</td>
</tr>
<tr>
<td>Adequate training†</td>
<td></td>
<td></td>
<td>63 (16%)</td>
<td>33 (9%)</td>
</tr>
</tbody>
</table>

*P* < 0.001 (chi square). All other *P*-values are > 0.05.

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*N* = 741) of respondents stating that delirium was under-recognised and also the small proportion of respondents stating that they had adequate training in delirium (16%, N = 129).

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Delirium is very common and is clinically important. However, in comparison to other serious acute conditions,
it is substantially under-recognised. It is remarkable that respondents to this survey are aware of the importance of delirium, but fail at the outset by not knowing the diagnostic criteria. This apparently widespread knowledge gap has implications for all professionals involved in undergraduate and postgraduate education of doctors, nurses and other healthcare staff.

The most obvious solution to this problem is that delirium education at all stages of training should expand in scope such that it occupies a position proportionate to its clinical impact. Some previous work has sought to improve the diagnosis and management of delirium through education of staff on acute medical wards, demonstrating improved frequencies of delirium detection and a reduction in the point prevalence of delirium [8]. However, when the implementation of a previous version of the UK Royal College of Physicians guidelines was tested, there was little evidence of improvement in subsequent care [9]. These and other attempts to improve delirium care at the ward level have produced mixed results [10]. It is highly likely that these efforts are undermined by the problem that excellence in delirium care is not yet generally considered to be a core element of the skills of a physician. Remarkably, delirium is still absent or covered inconsistently in UK national guidelines and curriculums [11]. Remediying this deficit is likely to require proactive engagement with training bodies and policy-making institutions at the national and international levels. Such engagement is yielding important advances, for example in the setting up of a new delirium guideline development group by the UK’s National Institute for Clinical Excellence and the national ‘Let’s Respect’ educational initiative, which aims to improve standards in older people’s mental health in acute hospitals [12]. Advocacy by new interest groups such as the European Delirium Association will play a further role [13].

Conclusion

In conclusion, this survey suggests that there are significant gaps in UK training doctors’ knowledge of delirium. However, it is highly encouraging that respondents recognised both the importance of delirium and their own need for training. This suggests that improved education is likely to be well received and effective.

Key points

- We conducted a large, multi-centre survey of knowledge and attitudes to delirium in UK junior doctors.
- In this group, there was an understanding that delirium is prevalent and that it is associated with serious adverse outcomes.
- However, a significant lack of the basic knowledge required to diagnose and manage delirium was important in determining its under-recognition.

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Conflict of interest

None declared.

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Supplementary data

Supplementary data are available at Age and Ageing online.

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