Research Letter: Are we teaching our students what they need to know about ageing? – Results from the UK National Survey of Teaching in Ageing and Geriatric Medicine

Adam L Gordon[1], Adrian G Blundell[2], John R Gladman[1], Tahir Masud[2]

[1]Division of Rehabilitation and Ageing, University of Nottingham
[2]Nottingham University Hospitals NHS Trust

This is the author's final draft version of the article which has now been accepted, subsequent to peer-review, for publication in Age and Ageing. The final version of the article is now on Age and Ageing Advance Access and can be found using the reference: doi:10.1093/ageing/afq011

Competing interests

All authors declare that they have no competing interests to declare.

Acknowledgements

We would like to acknowledge Prof Peter Crome, University of Keele; Dr Oliver Corrado, West Yorkshire Foundation School; and Prof Steven Allen, University of Bournemouth, who all contributed to earlier research work around which this project was based and consulted during development of the research protocol.

We would like to acknowledge Charlotte Potter of Help the Aged and Age Concern and the members of the British Geriatrics Society Education and Training Committee for their comments on study design, data analysis and the manuscript.

We would also like to acknowledge the following medical schools which participated in the study: Brighton and Sussex University Medical School, Bristol University Medical School, Cambridge University Medical School, Hull York Medical School, Kings College London Medical School, Leicester University Medical School, Oxford University Medical School, Peninsula Medical School, Queen's University Belfast Medical School, St George's Medical School, University College London Medical School, University of Aberdeen Medical School, University of Dundee Medical School, University of East Anglia Medical School, University of Edinburgh Medical School, University of Nottingham Medical School and University of Sheffield Medical School.

Ethics Approval

This research is a survey of teaching provision against nationally stated guidelines. It was discussed with the Chair of the University of Nottingham Medical School Research Ethics Committee who deemed that no ethical approval was required.

Details of Funding/Sponsorship

This research was supported by the British Geriatrics Society and the British Council on Ageing. Both of these organisations are charitable. Support was in the form of approval to use these organisations' names and copyrighted logos on survey literature. Both organisations support the decision to submit this article for publication.

The members of the British Geriatrics Society Education and Training Committee reviewed and commented on the research protocol and manuscript at several points. No financial support was received from either organisation.

Sir,

Learning about ageing and the appropriate management of older patients is important for all doctors. The over 65s comprise between 15% and 18% of admissions to UK Emergency Departments [1 2] and two-thirds of acute hospital inpatients in England and Wales and 36% of acute admissions are over 65[3].

However, recent changes to postgraduate medical training within the UK[4-6] have resulted in a more streamlined training programme, with the British Geriatrics Society (BGS) stating "it cannot be assumed that doctors will have further education in Geriatric Medicine after graduation"[7]. This places increased onus on the quality of undergraduate education, yet previous research has suggested undergraduate teaching in geriatrics to be in decline[8]. This assertion was based upon examination of trends in the number of discrete academic units and modules in the specialty but did not examine what was actually taught to undergraduates[9].

This study set out to evaluate what medical undergraduates in the UK are taught about ageing and geriatric medicine and how this teaching is delivered.

Method

The study took place in 2008. We validated the current British Geriatrics Society (BGS) curriculum for undergraduates by mapping it to the 2003 version of Tomorrow's Doctors[10], which provides national guidance for the teaching of UK medical undergraduates[11]. An electronic questionnaire was developed, in which outcomes from Tomorrow's Doctors were used as topic headings, with relevant learning outcomes from the BGS curriculum listed beneath.

For each outcome, we asked whether and how it was taught and examined, the disciplines involved in teaching and the amount of time devoted to teaching. Only teaching delivered to all students was included. Topics taught to sub-groups of students or as part of a student selected component were not recorded. A free text box was provided at the bottom of every page for clarification.

The deans of all 31 UK medical schools were approached by both email and letter, asking them to nominate a respondent who would have a comprehensive overview of ageing as delivered across the undergraduate curriculum. Where direct approaches were unsuccessful, members of the BGS Education and Training Committee, comprising representatives from every UK postgraduate deanery, were asked to identify colleagues within their local medical school who could provide a response.

The electronic survey was then sent to all nominated respondents. Telephone and face-to-face support was offered if necessary.

Once responses were collated, a copy was sent to each participating school for them to verify, augment or comment on.

Results

Three medical schools declined to participate at outset, one only taught preclinical medicine and two had a policy not to respond to surveys. Invitations and instructions on how to complete the electronic questionnaire were therefore sent to 28 schools. Responses were received from 18/28 (64%) schools. One of these responded only in vague terms despite requests to be more specific, stating that their problem-based curriculum covered most of the learning objectives specified. Thus responses from

17/30 (57%) of the UK medical schools teaching a full five year course were analysed.

Fourteen respondents were geriatricians: 12 consultants (10 academic; 2 clinical) and 2 registrars (1 academic; 1 clinical). Only 3 were non-geriatricians (vice deans or course directors).

The numbers of schools teaching and examining each learning outcome are outlined in Table 1.

Table 1 Learning outcomes taught and assessed

	Taught n (% of respondents)	Examined n (% of respondents)
Cellular ageing	7 (41%)	5 (29%)
Physiology of ageing	9 (53%)	8 (47%)
Ageing and pharmacology	15 (88%)	11 (65%)
Delirium	17 (100%)	14 (82%)
Dementia	17 (100%)	14 (82%)
Falls	17 (100%)	14 (82%)
Incontinence	17 (100%)	14 (82%)
Osteoporosis	16 (94%)	13 (76%)
Parkinsonism	17 (100%)	14 (82%)
Pressure ulcers	14 (82%)	9 (53%)
Stroke	17 (100%)	14 (82%)
Polypharmacy	17 (100%)	15 (88%)
Ethics	17 (100%)	13 (76%)
Mental Capacity	15 (88%)	11 (65%)
Advance directives	15 (88%)	11 (65%)
Elder abuse	11 (65%)	5 (29%)
Terminology & classification of health	6 (35%)	3 (18%)
Assessment scales in health	16 (94%)	10 (59%)
Demographics	15 (88%)	10 (59%)
Social ageing	9 (53%)	7 (41%)
Models of services	14 (82%)	9 (53%)

Teaching was subdivided according to formal methods (lectures/seminars/tutorials /small group teaching/formal ward teaching/CAL) and informal (library, book based and informal ward teaching). Results are summarised in Table 2.

Table 2 Formal vs Informal Teaching

	Formal n (% of respondents)	Informal n (% of respondents)
Cellular ageing	6 (35%)	1 (6%)
Physiology of ageing	9 (53%)	0 (0%)
Ageing and pharmacology	14 (82%)	1 (6%)
Delirium	17 (100%)	0 (0%)
Dementia	17 (100%)	0 (0%)
Falls	15 (88%)	2 (12%)
Incontinence	14 (82%)	3 (18%)
Osteoporosis	15 (88%)	1 (6%)
Parkinsonism	15 (88%)	2 (12%)
Pressure ulcers	7 (41%)	7 (41%)
Stroke	16 (94%)	1 (6%)
Polypharmacy	13 (76%)	4 (24%)
Ethics	16 (94%)	1 (6%)
Capacity	15 (88%)	0 (0%)
Advance directives	12 (71%)	3 (18%)
Elder abuse	8 (47%)	3 (18%)
Terminology & classification of health	2 (12%)	4 (24%)
Assessment scales in health	11 (65%)	4 (24%)
Demographics	16 (94%)	0 (0%)
Social ageing	9 (53%)	0 (0%)
Models of services	10 (59%)	4 (24%)

Discussion

These results show a mixed picture with regard to undergraduate teaching in ageing and geriatric medicine. The common presentations in older patients, the so-called "geriatric giants"[12] - delirium, dementia, stroke, falls, osteoporosis, parkinsonism, polypharmacy and incontinence - were taught in the majority of schools. Ethics was also taught widely. Despite this, only eight out of twenty-one learning objectives were taught in all schools and none of them were examined in all schools.

Assessment plays a pivotal role in learning. Ramsden[13] stated that, for many students, assessment *is* the curriculum – students focus their efforts on learning outcomes which they know are assessed. Biggs[14] proposed that students are more motivated if outcomes assessed map closely to those specified in the curriculum and taught during the course ("curricular alignment"). Thus the failure to assess core concepts may result in a failure to learn core concepts.

Elder abuse was taught formally in only 8/17 schools, despite "abuse of the vulnerable patient" receiving explicit mention in Tomorrow's Doctors. This is a significant omission given the relevance of elder abuse to clinical practice. A fifth of older people presenting to the Emergency Department report abuse[15], whilst older people who are abused are 3·1 times more likely to die during a 3-year follow-up period[16].

Pressure ulcers were taught about in 14/17 schools but taught formally in only 7/17 of these and examined in only 9/17. Pressure ulcers have a prevalence of 9.6-11.9% in hospitalised adults in the UK [17] and the annual cost of pressure ulcer care for the NHS in 2000 was £1.77 billion. [18]

Only 9/17 schools reported teaching in social ageing, 7/17 in cellular ageing and 9/17 in the physiology of ageing. Tomorrow's Doctors states that, "graduates must know about and understand normal and abnormal structure and function, including the natural history of human diseases, the body's defence mechanisms, disease presentation and responses to illness."[10] It would be seen as unacceptable to assert that doctors could effectively manage heart failure without an understanding of cardiac physiology. By analogy, the physiology underpinning the altered pharmacology of later life and the social demography underpinning the funding of healthcare provision in care homes are equally essential.

The strengths of this study include the use of an objective questionnaire based upon the national curricula for medical undergraduates, delivered to all UK medical schools, with respondents nominated by deans. We took a number of measures to maximise response rate including using an electronic interface, providing schools with paper copies of the questionnaire on request, and repeated email and formal mail

reminders. Despite these measures, our response rate was suboptimal, raising the possibility of response bias. The reasons for the low response rate are not entirely clear – however, informal feedback was that both the amount and detail of information requested made the questionnaire difficult to complete. On contacting schools, we specifically requested that they nominate respondents with an overview of the whole undergraduate course. It is unlikely, given the predominance of geriatricians amongst respondents, that this objective was fully realised. We may have under-recorded tuition in biogerontology and sociogerontology if our respondents did not have an adequate overview of the curriculum to know about these specialties. However, this does not seem to have affected the comprehensiveness of the response in other multidisciplinary areas such as ethics, demographics and service models. Despite these issues, this remains the most comprehensive survey of undergraduate teaching in ageing and geriatric medicine within the UK to date. Those schools which responded did so comprehensively. Even if the non-responding schools were teaching ageing and geriatric medicine perfectly (which seems unlikely), then these findings would still raise significant issues.

Since this study, the General Medical Council has published a new version of Tomorrow's Doctors, which will affect undergraduates commencing studies from 2011[19]. This revised document continues to support teaching in abuse of vulnerable people, in normal and abnormal structure and function and in common medical presentations. It therefore does not contradict our conclusions.

On the basis of these findings, all UK medical schools should examine the degree to which they both teach and examine the learning objectives listed here, with particular attention to topics that tend to be overlooked such as elder abuse and pressure sores, as well as the underlying sciences of biological and social ageing. Since ageing is a global phenomenon, similar exercises could be undertaken in other countries.

References

1. Downing A, Wilson R. Older people's use of Accident and Emergency services. *Age Ageing* 2004;34(1):24-30.
2. Eagle DJ, Rideout E, Price P, McCann C, Wonnacott E. Misuse of the emergency department by the elderly population: myth or reality? *J Emerg Nurs* 1993;19(3):212-8.

3. Department of Health. National Service Framework for the Older Person. London: Department of Health, 2001.
4. Department of Health. Modernising medical careers : the next steps - The future shape of Foundation, Specialist and General Practice Training Programmes. London: Department of Health, 2004.
5. Tooke J. Aspiring to excellence. Final Report of the Independent Inquiry into Modernising Medical Careers, 2008.
6. Delamothe T. Modernising Medical Careers: final report. *BMJ* 2008;336(7635):54-55.
7. BGS Education & Training Committee. The Medical Undergraduate Curriculum in Geriatric Medicine, online at http://www.bgs.org.uk/Publications/Compendium/compend_5.1, 2004.
8. Bartram L, Crome P, McGrath A, Corrado OJ, Allen SC, Crome I. Survey of training in geriatric medicine in UK undergraduate medical schools. *Age Ageing* 2006;35(5):533-35.
9. Gordon AL, Blundell AG, Gladman JRF, Masud T. Undergraduate education in geriatrics within the United Kingdom. *Age Ageing* 2007;36(6):705-.
10. GMC. *Tomorrow's Doctors – Recommendations on Undergraduate Medical Education*: The General Medical Council, 2003.
11. Blundell A, Gordon A, Gladman J, Masud T. Undergraduate Teaching in Geriatric Medicine: The Role of National Curricula. *Gerontology & Geriatrics Education* 2009;30(1):75 - 88.
12. Isaacs B. *An introduction to geriatrics*. London: Balliere, Tindall and Cassell, 1965.
13. Ramsden P. *Learning to Teach in Higher Education*. London: Routledge, 1992.
14. Biggs J. Enhancing teaching through constructive alignment. *Higher Education* 1996;32(3):347-64.
15. Cooper C, Selwood A, Livingston G. The prevalence of elder abuse and neglect: a systematic review. *Age Ageing* 2008;37(2):151-60.
16. Lachs MS, Pillemer K. Elder abuse. *The Lancet* 2004;364(9441):1263-72.
17. Papanikolaou P, Lyne P, Anthony D. Risk assessment scales for pressure ulcers: A methodological review. *International Journal of Nursing Studies* 2007;44(2):285-96.
18. Bennett G, Dealey C, Posnett J. The cost of pressure ulcers in the UK. *Age Ageing* 2004;33(3):230-35.
19. GMC. *Tommorrow's Doctors (2009)*: The General Medical Council, 2009.