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Hot topic in geriatric medicine

## A systematic review of surveys on undergraduate teaching of Geriatrics in medical schools in the XXI century



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#### ARTICLE INFO

Article history: Received 19 June 2013 Accepted 26 December 2013 Available online 21 January 2014

Keywords:
Geriatrics
Medical education
Undergraduate education

#### ABSTRACT

*Background*: Due to population aging, different international organizations recommend that all medical students should receive training in geriatric knowledge and skills.

Methods: A systematic review of national and international surveys on the provision of geriatric education to undergraduate medical students was done for articles published from 2000 to July 2013. The analysis included all studies on the presence and characteristics of geriatric teaching in medical schools. Eighteen surveys were identified: 13 in single countries, 3 European-wide, 1 in two countries, and 1 global.

Results: Most surveys were based on the answers of geriatricians and academic staff. Average answer rate was 83%. Forty-one percent of the countries report some geriatric contents in the curricula of their medical schools. Mean national prevalence of geriatric teaching was 81% of medical schools (range 15 to 100%, with wide differences between aged and aging countries); courses were mandatory in only 62%. The main topics taught are geriatric syndromes and geriatric assessment. Between 21% and 65% of the persons responsible for this teaching are geriatricians. An increase in the number of geriatric departments has been observed in Europe and in the USA. Human and financial resources are the main limitations to the inclusion of Geriatrics in the curricula.

Conclusion: Geriatric training has been evaluated mainly in North American and European countries. Geriatric contents in the medical curricula, academic structures and qualified teachers are not systematically available in most countries. In a rapidly ageing world, many physicians are not receiving formal education on geriatrics at medical schools.

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#### 1. Background

The rapidly growing number of older individuals around the world requires the incorporation of the principles of Gerontology and Geriatric Medicine in all health care disciplines [1–3]. Recently, a European Union sponsored document on age related disease stated that training of health professionals and academics should routinely incorporate Clinical Gerontology as a core component of undergraduate and postgraduate curricula. Medical schools should have academic departments of geriatric medicine to provide leadership in undergraduate and postgraduate training and research, so every student of medical, nursing or allied health professions receives training in old age medicine and psychiatry. This document called for this training to become a compulsory part of academic curricula [4]. The World Health Organization and many Geriatrics Societies (including the European Union Geriatric

Medicine Society and the American Geriatrics Society through the Eldercare Workforce Alliance) have supported the view that all medical students should receive training in Geriatrics [5–7].

However, this does not seem to be the case. A recent European report showed that geriatric teaching is quite heterogeneous, both between and within countries [5]. Some other surveys have explored if geriatric contents are offered to medical students, the quality of this teaching and other aspects. They have been carried out in different countries and settings, and have used different methodologies, so, the results are not easy to interpret.

We thus aimed to perform a systematic review of recently published articles that explore how geriatric medicine is taught in medical schools, exploring the scope, methods and results of both national and international surveys on this topic.

#### 2. Methodology

A systematic review was done following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology [6] to identify all surveys on geriatric undergraduate

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teaching, published from 2000 to July 2013 in English, Spanish, French, German, Italian and Portuguese. Medline and Índice Médico Español (IME, a database for papers published in Spanish) were searched. Some experts and researchers in this topic were also contacted in order to identify other relevant studies not indexes in these databases.

The search strategy used for the systematic review was:

- Pubmed: Curriculum [MeSH Terms] or curriculum or curricula or activity, educational [MeSH Terms] or education or short-term course or educational activities or training programs and medical schools [MeSH Terms] or medical schools or medical school or undergraduate medical education [MeSH Terms] or education, medical, undergraduate [MeSH Terms] and geriatrics [MeSH Terms] or geriatrics [Title] or gerontology [Title];
- Índice Médico Español (IME): Enseñanza de geriatría.

In total, 361 articles were identified from the search in MEDLINE and 19 from Índice Médico Español; 4 additional articles were included after references were browsed and contact with experts.

The titles of all the articles produced by the search were browsed and abstracts were reviewed to identify original surveys looking at the prevalence and characteristics of geriatric teaching in a single country or in more than one country. Then, 341 papers were excluded, due to the following reasons: they were recommendations or reflections made by different experts, presented new programs developed in single medical schools, were surveys evaluating only specific aspects (end-of-life care, elder abuse, internet use...) or did not focus on undergraduate programs (fellowship, postgraduate or continuing medical education).

After this search, 43 articles were completely reviewed by one of the authors and 18 of them were included (those that mention original data and were based on any kind of survey of medical schools, teachers or students, or of experts in geriatric medicine). The flow diagram of this search is shown in Fig. 1.

A checklist was created to review each article. It included aspects related to both the design and to the results of each survey. Regarding the design, the country or countries where the survey was performed, the date of the survey, the format (online or paper

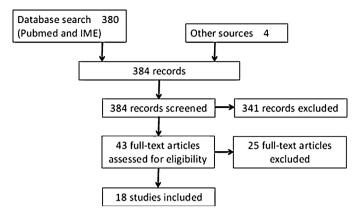


Fig. 1. Search strategy.

based), funding, which gathered the information, which were the subjects of the survey and the answer rate were registered. In relation to the results, the prevalence of geriatrics training (defined as the number of medical schools in a given country that included any kind of geriatric teaching in the undergraduate curriculum), characteristics of geriatric teaching (status [mandatory vs optional], duration, contents and place of the training), academic organization (structure, teaching staff and budget) and obstacles for the development of geriatric teaching were noted.

#### 3. Results

#### 3.1. Articles included

Eighteen surveys were identified: 13 in Pubmed, 1 in IME and 4 from other sources (Table 1) [5,7–23].

#### 3.2. Designs of the surveys

#### 3.2.1. Format

Ten surveys used a paper questionnaire, 4 of them were internet-based, in 2 cases, the author personally reviewed the medical curricula and in another 2 cases the author contacted directly with geriatrics experts.

**Table 1** Summary of surveys on education in Geriatrics.

Nº	Country	Date	Author	Area	Description
1	Argentina	2005	Bassan et al.	National [8]	Review of medical school curricula and intention of medical students to specialize in geriatrics
2	Canada	2004	Gordon et al.	National [9]	Survey about geriatric contents in undergraduate curricula and in residency programs
3	Canada	2008	Gordon	National [10]	Update of geriatric undergraduate and postgraduate medical curricula
4	Germany	2004	Kolb	National [11]	Evaluation of inclusion of Geriatrics and number of teachers in medical schools
5	Netherlands	2011	Tersmette et al.	National [12]	Evaluation of geriatric competencies education at national and local level
6	Spain	2002	Gallo J et al.	National [13]	Review of geriatric contents it the university curricula of several health professions
7	Spain	2007	López et al.	National [14]	Survey on the inclusion of Geriatrics in medical schools
8	United Kingdom	2003	Bartram et al.	National [15]	Review of geriatric medicine and human aging teaching in medical schools
9	United Kingdom	2008	Gordon et al.	National [16]	Evaluation of geriatric education compared with Tomorrow's Doctors paper recommendations
10	United States of America	2000	Eleazer et al.	National [17]	Two waves survey about education of medical students in geriatric knowledge, attitudes and skills
11	United States of America	2001	Warshaw et al.	National [18]	Assessment of the structure, resources and activities of geriatric medicine programs in medical schools
12	United States of America	2005	Warshaw et al.	National [19]	Description of the progress made by medical schools in Geriatric Medicine
13	United States of America	2010	Bragg et al.	National [20]	Reassessment of the structure, resources and activities of geriatric medicine programs in medical schools
14	Austria and Germany	2011	Singler et al.	Binational [21]	Assessment of geriatric education at medical schools focusing in competencies and assessment
15	Europe	1999	Pils et al.	Regional [22]	Evaluation of geriatric chairs and education in western Europe countries.
16	Europe	2002	Duursma et al.	Regional [23]	Evaluation of undergraduate education and geriatric chair across Europe
17	Europe	2006	Michel et al.	Regional [5]	EUGMS sponsored updated survey on geriatric teaching in European countries
18	Worldwide	1999	Keller et al.	Global [7]	WHO supported worldwide survey on teaching of Geriatric Medicine

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