

Attitudes and perceptions of medical students about family medicine in Spain: protocol for a cross-sectional survey

Pablo Alonso-Coello,¹ Josep Jiménez Villa,^{2,3,4} Antonio Monreal Hija,⁵ Xavier Mundet Tuduri,⁴ Ángel Otero Puime,⁶ Amando Martín Zurro,^{2,3} for the University and Family Medicine Research Group (UNIMEDFAM)*

To cite: Alonso-Coello P, Jiménez Villa J, Monreal Hija A, *et al.* Attitudes and perceptions of medical students about family medicine in Spain: protocol for a cross-sectional survey. *BMJ Open* 2011;**1**:e000231. doi:10.1136/bmjopen-2011-000231

► Prepublication history and additional appendices for this paper are available online. To view these files please visit the journal online (<http://bmjopen.bmj.com>).

For author footnote see end of the article.

Received 23 June 2011
Accepted 30 September 2011

This final article is available for use under the terms of the Creative Commons Attribution Non-Commercial 2.0 Licence; see <http://bmjopen.bmj.com>

For numbered affiliations see end of article.

Correspondence to

Dr Amando Martín Zurro;
a.martinzurro@gencat.cat

ABSTRACT

Background: Despite the fact that family medicine (FM) has become established as a specialty in the past 25 years, this has not been reflected in the inclusion of the specialty in the majority of medical schools in Spain. Almost 40% of the students will work in primary care but, in spite of this, most universities do not have an assessed placement as such. There are only specific practice periods in health centres or some student-selected components with little weight in the overall curricula.

Objectives: To evaluate the attitudes and perceptions of medical students about FM in the health system and their perception about the need for specific training in FM at the undergraduate level. To explore change over time of these attitudes and perceptions and to examine potential predictive factors for change. Finally, we will review what teaching activity in FM is offered across the Spanish schools of medicine.

Methods: Descriptive cross-sectional survey. Each one of the different analyses will consist of two surveys: one for all the students in the first, third and fifth year of medical school in all the Spanish schools of medicine asking about their knowledge, perceptions and attitudes in relation to primary care and FM. There will be an additional survey for the coordinating faculty of the study in each university about the educational activities related to FM that are carried out in their centres. The repetition of the study every 2 years will allow for an analysis of the evolution of the cohort of students until they receive their degree and the potential predictive factors.

Discussion: This study will provide useful information for strategic planning decisions, content and educational methodology in medical schools in Spain and elsewhere. It will also help to evaluate the influence of the ongoing changes in FM, locally and at the European level, on the attitudes and perceptions of the students towards FM in Spain.

INTRODUCTION

Family medicine (FM) has become consolidated as a specialty in the past 25 years.^{1 2} This transformation and adaptation have not

ARTICLE SUMMARY

Article focus

- There is a need to explore further the reasons for which students choose a specific specialty for training and future practice. This protocol outlines the design of a cross-sectional survey to evaluate attitudes and perceptions of medical students about family medicine.
- The project will assess the potential impact of medical school teaching on the final profiles of students, both in perceptions and expectations and in the choice of specialty.

Key messages

- This is a protocol of a multicentre survey that will take place in Spanish medical schools. The study includes a survey for students and one for the coordinators of family medicine in each centre.
- The repetition of the student survey every 2 years will allow for an analysis of the evolution of student cohorts until the end of their studies.
- The results of this study will provide valuable information for curriculum development related to family medicine in the different schools of medicine and will help to prioritise those activities that are likely to be most effective for promoting this specialty.

Strengths and limitations of this study

- The research team for this study includes coordinating faculty from 22 of the 27 universities throughout Spain. The study will be repeated every 2 years and will explore change over time of the issues addressed.
- The principal limitations of this study are related to its design, of observational nature. The results observed will serve as hypotheses generating and cannot be regarded as definitive. Finally, the fact that the survey will be anonymous will impede the evaluation, at an individual level, of change over time.

been reflected in the inclusion of the specialty, either as a course of study or area of knowledge, in the majority of medical schools in Spain.^{3 4} This is a marked

difference from what has occurred in other Western countries, in which the presence of FM has been consolidated and acknowledged for decades.^{5 6} Despite the fact that almost 40% of the students will go on working in FM, the majority of universities do not have an assessed placement as such, and the presence of this training is limited to a few practice sessions in a health centre or a student-selected component with little weight in the curricula.^{4 7}

At the moment, there is no Department of Family Medicine in Spanish Medical Schools, and the presence of this subject in university is scarce, to say the least.^{8 9} This is true in quantitative terms and in qualitative terms as well, when one takes into account its importance and presence in healthcare services and Spanish society as a whole. Starting in the 1980s some Spanish schools of medicine have offered their students practice sessions in the consultation of FM physicians, which are complemented with seminars imparted by associate professors. Since then, Spanish universities have slowly started to introduce FM in the curricula, and at present, 25 of the 27 schools of medicine have some type of teaching in FM.⁴ Three universities have family and community medicine as an assessed placement, seven offer it as a student-selected component, 17 require obligatory practice sessions and 12 optional sessions. Spanish universities now have 157 university healthcare centres, with 151 faculty teaching and research positions, of which four are professors and 147 are associate professors, as well as 300 honorary professors. During the last few years, there have been two Chairs, with their corresponding directors.⁴ In general, when looking at Spain's European neighbours, it is easy to realise that there are evident differences in the universities' medical curricula, with these schools emphasising more a series of characteristics of FM, such as continuous care of patients and holistic health focus, and are oriented to the individual, the family and the community.

The attitudes and perceptions of medical students towards FM of students in Spain are presently not well known. Two studies have been performed so far.^{10 11} Menárguez Puche *et al*¹⁰ surveyed 216 medical students to assess their attitudes towards FM and its importance in undergraduate medical studies. Results showed that only 1.4% of those surveyed considered FM as their first choice of specialty, whereas 48.1% were considering it as an alternative choice. On the other hand, 35.2% of the students answered that they would only choose it if they could not get into other specialties and 15.3% said that they would never choose it. Students believed that FM should have an important role in university. However, they did not prioritise it themselves. This is consistent with their choices for postgraduate specialisation. The authors concluded that FM continues to be not well known among Spanish medical students, diffculting that this specialty becomes a viable choice for postgraduate study.¹⁰ Recently, Escobar-Rabadán *et al* surveyed 88 medical students at the beginning and end

of a course on primary care.¹¹ The objective of the study was to explore what socio-demographic and academic variables of medical students are associated with a better knowledge and more favourable attitude to FM. Results showed that the only variable that was associated was gender, with women, especially younger women, showing the most favourable attitudes towards FM.

The international literature also has few studies on this subject, either before or after the end of undergraduate study. However, attitude has been studied in various international studies, especially by Anglo-Saxon universities.^{12–23} In general, the available information shows that the attitude of medical students towards FM improves as they progress in the school of medicine and that it is proportionately related with the degree of contact they have with FM during their undergraduate training.^{17 21} In a study performed in the UK, the attitude of medical students towards family practice as a specialty and towards family physicians was analysed.¹⁵ The students reflected a positive attitude towards both and listed their personal experience with family physicians as the most influential factor on their attitude. The attitudes of the students with respect to the specialty as well as to family physicians improved during their course of study, with FM being the only specialty to show an improvement.

The reasons for which students choose a specific specialty for training and future practice are complex. Different factors have shown an association with the selection of FM: the desire to practice a specialty with multiple branches, social orientation, characteristics of the medical school, characteristics such as hours and aspects related to the volume and quality of the work (expected salary, prestige, possibility of finding work, follow-up of patients, etc) and personal interaction.^{16 24 25} In general, students see themselves as family doctors or hospital specialists from the moment they enter the medical school. Different studies have shown that, although there is a margin for variation in the selection of the future specialty, the preferred choice at the moment of entering medical school is a key predictive factor.^{11 26}

Within this context and given the scarcity of information on this topic in Spain, we have designed a cross-sectional survey to evaluate the potential impact of medical school teaching on the final students' profiles, both in perceptions and expectations and in the choice of specialty. Our hypothesis is that those medical schools with greater exposure to family practice will have students with more positive attitudes and perceptions than those with less. On the other hand, we hypothesise that attitudes and perceptions will improve over time as students get exposed to family practice through their undergraduate years. Finally, given the actual situation of this specialty in Spain and at the European level, with an increase in its inclusion in medical schools, we hypothesise that these attitudes and perceptions will also improve over time.

METHODS

This is a multicentre survey that will take place in Spanish medical schools. This proposal refers to the initial observation and the first follow-up after 2 years. Each survey will consist of two different questionnaires: one will be given to students in different courses of the Spanish medical school undergraduate curricula, asking about their knowledge, perceptions and attitudes about FM. This questionnaire will be repeated every 2 years. The repetition will help exploring the evolution of the student cohort until the end of their undergraduate studies. The other questionnaire will be given to the faculty who coordinate the study in each of the medical schools and will evaluate the educational activity related to FM in each centre. This protocol was approved by the Research Ethics Board at the IDIAP Jordi Gol, Barcelona.

Subjects

The study subjects will be all students in the first, third and fifth year in all Spanish medical schools (approximately between 12 000 and 14 000 students). The rationale for choosing the third and fifth year is that in the third year is when the students start clinical exposure and in the fifth year they are in a more advanced situation from the clinical point of view. The first year will provide a baseline value. At the same time, a different survey will be addressed to the study's local coordinating faculty in each medical school. Participation will be voluntary.

Student questionnaire

Design of the questionnaire

The instrument of measure will be a specifically designed questionnaire made up of a series of items that will be evaluated on a scale similar to a Likert scale, with some open questions. A list of items will be obtained from the literature review, such as attitudes, perceptions, specialty preference and demographic characteristics. With these items, we will develop the first version of the questionnaire. A pilot study will be done with students in different years of medical school in Barcelona, Madrid, Alicante and Zaragoza in order to validate the questionnaire, evaluate its reliability and verify that it is adequate and well accepted. The final version will be developed based on the results of the pilot study. Student characteristics identified in the literature as related with attitudes and perceptions about FM will be included.

Data collection

Data collection will take place close to the beginning of the second quarter of the academic year. The completion of the questionnaire will be done in the classroom, in paper format, taking advantage of training sessions for the students. If needed, it will also be possible to respond via the internet (<http://www.surveymonkey.com>).

Questionnaire for local coordinators

In each medical school, there will be one or two faculty who will be the local coordinators of the study. These coordinators will answer a specific questionnaire about educational and other activities related to primary care and FM taking place in their local school during the academic year.

Data analysis

A descriptive analysis of the answers will be undertaken, both by groups and individually, for each of the study years. Proportions will be used for categorical variables and means and SDs for quantitative variables. Variability according to medical school and study year will be analysed, both via variability quotients and also by comparing the different strata with the χ^2 test and analysis of variance.

The existence of an association between the questionnaire scores and each of its dimensions will also be analysed by comparing the students' individual characteristics with the teaching activity related to primary care and family practice in the different medical schools. This analysis will use both bivariate procedures (χ^2 test and analysis of variance) as well as multivariate ones. A multiple linear regression will be done, with the survey scores and dimension scores as dependent variables and the rest of the variables being considered descriptive. The selection of variables will be done step by step from an initial model formed by variables with a bivariate association with dependent variables of $p \leq 0.20$. The dependent variables will then be dichotomised and the analysis will be repeated through logistic regression.

The same analyses will be repeated 2 years later. In order to assess the evolution of the questionnaire scores and FM and primary care activities, we will compare the results within the same year (first, third and fifth) and the change over the 2-year period (first to third year and third and fifth year). This will be done through χ^2 tests and analysis of variance.

DISCUSSION

The proposed study has been designed to evaluate the aforementioned characteristics at the beginning of medical training and throughout time. Given its sample size (number of medical schools and students) and the fact that it implies a follow-up of the students, this project will provide relevant information, which is presently not available in the international literature. The study takes place in the context of the changes due to the Bologna Process (<http://www.ond.vlaanderen.be/hogeronderwijs/bologna/>). The overarching aim of this Process is to create a European Higher Education Area based on international cooperation and academic exchange. There are changes taking place actually due to the Bologna Process and to the general tendency in most medical schools to introduce progressively more teaching activities in FM. The results of this study will

generate in the next few years information about the evolution of knowledge, attitude and perceptions about FM as a specialty. They will also assist in analysing the relation of different factors to perception and the final choice of FM as a specialty.

Study's limitations

The principal limitations of this study are related to its design. First, given its observational nature, the results observed should be considered hypothesis generating rather than conclusive. Our hypothesis is that at present, where there is a shortage of FM in University in our country, more FM training will improve attitudes and perceptions. If this is true, it is likely that given the actual circumstances and changes taking place in FM in Spain and the Bologna Process across Europe, the increase in the presence of family practice will improve the attitudes and perceptions of students towards it. However, other factors, which we are unable to control for, might be playing a role too. Also, data collection on attitude surveys inherently introduces some degree of subjectivity.

Second, the percentage of replies can be generally low and also vary according to medical school and specific items, which can introduce a bias. The role of the coordinating faculty in each medical school is essential in order to reduce the number of unanswered questionnaires. Another difficulty, since the questionnaire is anonymous, is the impossibility of evaluating at an individual level the evolution over time of the assessed characteristics and dimensions [figure 1](#).

Study's strengths

The design of this study has various strengths. One of the principal ones is the completion of the questionnaire in the classroom, in paper format, during some of the students' training sessions. In this way, we should

obtain a high response rate, with few students not responding. In specific cases, when local circumstances make difficult to get the students together, it will also be possible to respond via the internet. The research team for this study includes coordinating faculty from 22 of the 27 universities throughout Spain, which should bring the total number of surveyed individuals to over 10 000, making this the largest study on this subject internationally. This sample size and the expected high response rate will make the study be a representative assessment of the present situation in Spain.

Implications

This national survey will provide information on the attitudes and perceptions students in medical schools have of FM in the health system. It will also allow us to assess their attitude on its usefulness and the need for specific training in FM at the undergraduate level. For these reasons, we believe that the results of this study will provide valuable information for curriculum development related to FM in the different schools of medicine and will help to prioritise those activities that will be most effective for promoting this specialty in Spain.

Author affiliations

¹Iberoamerican Cochrane Centre, CIBERESP-IIB Sant Pau, Barcelona, Spain

²Servicio Catalán de la Salud, División de Planificación y Evaluación Operativa, Barcelona, Spain

³Institut Universitari d'Investigació en Atenció Primària Jordi Gol (IDIAP Jordi Gol), Barcelona, Spain

⁴Cátedra UAB-Novartis de Docencia e Investigación en Medicina de Familia, Universitat Autònoma de Barcelona, Barcelona, Spain

⁵Cátedra UNIZAR-Novartis de Docencia e Investigación en Medicina de Familia y Atención Primaria, Universidad de Zaragoza, Zaragoza, Spain

⁶Cátedra UAM-Novartis de Docencia e Investigación en Medicina de Familia y Atención Primaria, Universidad Autónoma de Madrid, Madrid, Spain

Author footnote

*University and Family Medicine Research Group (UNIMEDFAM). Amando Martín Zurro, Josep Jiménez Villa, Antonio Monreal Híjar, Xavier Mundet Tuduri, Ángel Otero Puime, Pablo Alonso-Coello, Cristina Aguado Taberné, Pablo Bonal Pitz, Francisco Buitrago Ramírez, Concepción Carratalá Munera, Verónica Casado, Vicente, María Teresa Delgado Marroquín, Ramón Descarrega Queral, Manuel Gálvez Ibáñez, Antonio J García Ruiz, Luís García Olmos, Vicente Francisco Gil Guillén, José Manuel Iglesias Sanmartín, Carmelo Jiménez Mena, Emilio Lara Valdivieso, Inés Lizaga Castillón, Antonio de Lorenzo-Cáceres Ascanio, Jorge Martínez de la Iglesia, Flora Martínez Pecino, Juan Francisco Menárguez Puche, M Pilar Navarrete Durán, Jorge Navarro Pérez, Domingo Orozco Beltrán, Eduard Peñascol Pujol, José Ramón Rodríguez Borges, Pilar Rodríguez Ledo, Juan Alfonso Romero Furones, Mercedes Sánchez Martínez, Juana Agustina Santana Caballero, Orlando Segura Álamo, Antonio Solbes Caro, José Zarco Montejo.

Acknowledgements We would like to thank Carmen Llenas for her help with the running of the study.

Funding This project is funded with a grant from the Instituto de Salud Carlos III, Ministerio de Sanidad, Spain (PI070975). PA-C is funded by a Miguel Servet contract by the Instituto de Salud Carlos III (CP09/00137).

Competing interests None.

Contributors AMZ, JJV and PA-C participated in the conception and design of the protocol and drafted a first version. AMH, XMT and AOP participated in the design and provided important intellectual content to the first draft. All authors participated, revising it critically for important intellectual content and have given final approval of the version to be published.

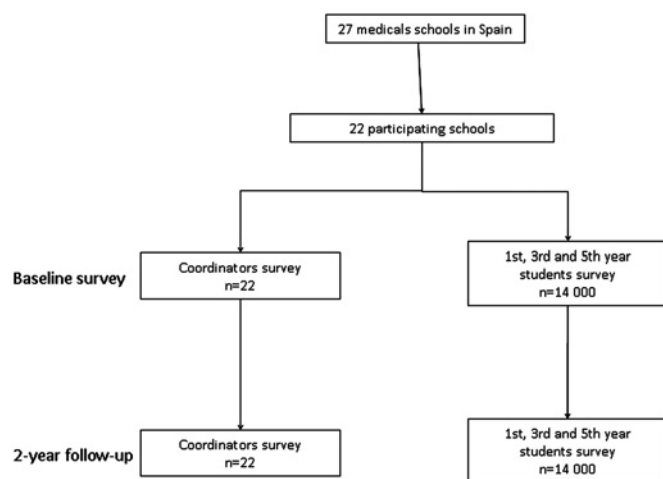


Figure 1 Study design flowchart. Family medicine is normally the point of first medical contact within the healthcare system, providing open and unlimited access to its users, dealing with all health problems regardless of the age, sex or any other characteristic of the person concerned (WONCA Europe. The European Definition of General Practice/Family Medicine. 2002).

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- Barber TP, Lopez-Valcarcel B. *Oferta y necesidad de médicos especialistas en España (2006-2030)*. Ministerio de Sanidad y Política Social. Madrid: Departamento de Publicaciones, 2009:4–154.
- Martín Zurro A, Cano Pérez JF. Docencia en Atención Primaria y medicina de familia. In: Martín Zurro A, Cano Pérez JF, eds. *En Atención Primaria. Conceptos, organización y práctica clínica*. 6ª edición del año. Madrid, Spain: Elsevier España, 2008:170–4.
- Menárguez Puche JF, Tudela de Gea MB, Hernández Sánchez JM, et al. Medicina de familia y Universidad, ¿cómo lo ven los estudiantes? *Aten Primaria* 2010;42:303–4.
- Bonal Pitz P, Casado Vicente V. La medicina de familia como disciplina académica y la atención primaria como entorno de aprendizaje (In Spanish). *Aten Primaria* 2004;34:433–6.
- Graham R, Roberts RG, Ostergaard DJ, et al. Family Practice in the United States. A status report. *JAMA* 2002;288:1097–101.
- Geyman JP, Bliss E. What does family practice need to do next? A cross-generational view. *Fam Med* 2001;33:259–67.
- Instituto de Información Sanitaria. *Sistema Nacional de Salud de España, 2010. Anexo D: Datos y cifras*. Madrid, Spain: Ministerio de Sanidad y Política Social, 2010:58–61.
- Menárguez Puche JF, Gomez-Calcerrada D, Gonzalez Diaz M, et al. Undergraduate teaching of primary health care. A Delphi study (In Spanish). *Aten Primaria* 1992;10:876–9.
- Zarco Montejo J. Situación de la medicina de familia en la universidad española y europea. *Revista de la Sociedad Madrileña de Medicina de Familia y Comunitaria* 2005;7:8–16.
- Menárguez Puche JF, Tudela de Gea MB, Hernández Sánchez JM, et al. Medicina de Familia y universidad, ¿Cómo lo ven los estudiantes? *Aten Primaria* 2009;42:303–4.
- Escobar-Rabadán F, López-Torres J. ¿Qué características de los estudiantes de medicina se relacionan con mejores conocimientos y actitudes hacia la medicina de familia? *Aten Primaria* 2009;41:431–6.
- Garrett EA, Dietrich AJ. Students' evolving attitudes toward family medicine and specialty choices at one medical school. *Acad Med* 1991;66:625–7.
- Grayson MS, Newton DA, Whitley TW. First-year medical students' knowledge of and attitudes toward primary care careers. *Fam Med* 1996;28:337–42.
- Lynch DC, Newton DA, Grayson MS, et al. Influence of medical school on medical students' opinions about primary care practice. *Acad Med* 1998;73:433–5.
- Henderson E, Berlin A, Fuller J. Attitude of medical students towards general practice and general practitioners. *Br J Gen Pract* 2002;52:359–63.
- Wright B, Scott I, Woloschuk W, et al. Career choice of new medical students at three Canadian universities: family medicine versus specialty medicine. *CMAJ* 2004;170:1920–4.
- Miettola J, Mantyselka P, Vaskilampi T. Doctor-patient interaction in Finnish primary health care as perceived by first year medical students. *BMC Med Educ* 2005;5:34.
- Ochoa-Diaz H. Medical curricula and students' attitudes towards general and family practice in Mexico. *Med Educ* 1987;21:189–98.
- Morrison JM, Murray TS. Career preferences of medical students: influence of a new four-week attachment in general practice. *Br J Gen Pract* 1996;46:721–5.
- Kalantan K, Pyrne N, Al-Faris E, et al. Students' perceptions towards a family medicine attachment experience. *Educ Health (Abingdon)* 2003;16:357–65.
- Williamson M, Gormley A, Bills J, et al. The new rural health curriculum at Dunedin School of Medicine: how has it influenced the attitudes of medical students to a career in rural general practice? *N Z Med J* 2003;116:U537.
- Bunker J, Shadbolt N. Choosing general practice as a career. The influences of education and training. *Aust Fam Physician* 2009;38:341–3.
- Morra DJ, Regehr G, Ginsburg S. Medical students, money and career selection: student's perception of financial factors and remuneration in family medicine. *Fam Med* 2009;41:105–10.
- Mann MP. Attitudes toward and subsequent career choice of family practice: a weak relationship. *Fam Med* 1994;26:504–8.
- Senf JH, Campos-Outcalt D, Kutob R. Factors related to the choice of family medicine: a reassessment and literature review. *J Am Board Fam Pract* 2003;16:502–12.
- Tolhurst H, Stewart M. Becoming a GP—a qualitative study of the career interests of medical students. *Aust Fam Physician* 2005;34:204–6.