

ORIGINAL ARTICLE

Behaviour and attitudes of Spanish physicians towards their own process of falling ill: Study protocol and validation of CAMAPE questionnaire



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Abstract Physicians have not learned their role as patients. Health programmes for doctors are focused on mental health. Nevertheless, anomalous behaviours of ill doctors exist independently of health problems. We present a study to describe behaviour and attitudes of doctors towards their own illness (CAMAPE) including the analysis of questionnaire validation.

Material and methods: A mix methodology study based on semi-structured interviews to ill physicians and focus groups with members of medical colleges, occupational medicine services and doctors of ill doctors was performed. A survey was designed. Survey validation process included content and face validity, construct validity through exploratory and confirmatory factor analysis and reliability by Cronbach's Alpha Index.

Abbreviations: PAIME, Programa de Atención Integral al Médico Enfermo, Spanish Integrated Healthcare Program for Doctors, Mental Health and Addictions; OMC, Organización Médica Colegial. National Organization of Provincial Medical Associations; ENSE17, Encuesta Nacional de Salud de España 2017. Spanish National Health Survey 2017; EFA, exploratory factor analysis; CFA, confirmatory factor analysis; CAI, Cronbach alpha index.

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Results: A total of 27 interviews to ill doctors and 4 focus group were performed. Content and feasibility assessment was made by experts. Psychometric validation was performed with a sample of 4308 answers (2450 women, 56.87%). A 5-factor (F) model explained 78.08% variance. First factor (F1) "The work might worsen health". Second (F2) "Mental issues, toxic habits and the impact of a bad health on work performance"; Third (F3) presenteeism and sick leaves; Fourth (F4) the handling of an ill colleague and the role of medical colleges. Fifth (F5) the healthcare pathway and potential value of revalidation in medical profession.

Conclusions: A comprehensive mixed study on the process of physicians becoming ill has been launched with a reliable questionnaire in a large sample of registered doctors. The analysis will help to formulate gender-sensitive policy and ethical recommendations in relation to sick doctors given the progressive feminisation of the medical profession.

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PALABRAS CLAVE

Salud del médico;
Calidad asistencial;
Médico enfermo;
Validación del
cuestionario;
Ética médica

Comportamientos y actitudes de los médicos españoles ante su propio proceso de enfermar: protocolo de estudio y validación del cuestionario CAMAPE

Resumen Los médicos no han aprendido su papel como pacientes. Los programas de salud para médicos tratan la salud mental. Los comportamientos anómalos existen independientemente de sus problemas de salud. Presentamos un estudio para describir los comportamientos y actitudes de los médicos hacia su propia enfermedad (CAMAPE).

Material y métodos: Entrevistas semiestructuradas a médicos enfermos y grupos focales con colegios de médicos, servicios de medicina del trabajo, médicos tutores y médicos de médicos. Se diseñó una encuesta. La validación incluyó validez de contenido, constructo con análisis factorial y fiabilidad por índice alfa de Cronbach.

Resultados: Se desarrollaron un total de 27 entrevistas y 4 grupos focales. La evaluación del contenido fue realizada por expertos. La muestra de validación fue de 4.308 respuestas (2.450 mujeres, 56,87%). Un modelo de 5 factores explicó el 78,08% de varianza. El primer factor (F1) fue «El trabajo puede empeorar la salud»; el segundo (F2) «Cuestiones de salud mental, hábitos tóxicos e impacto de una mala salud en rendimiento laboral»; el tercero (F3) «Presentismo y bajas laborales»; el cuarto (F4) «Manejo de un compañero enfermo y colegios de médicos»; el quinto (F5) «Atención a los médicos enfermos y valor potencial del proceso de revalidación colegial».

Conclusiones: Se presenta un estudio sobre el proceso de enfermar de los médicos con un cuestionario validado en una amplia muestra de médicos. El análisis ayudará a formular políticas y recomendaciones éticas con perspectiva de género en relación con los médicos enfermos, dada la progresiva feminización de la profesión médica.

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Introduction

The culture of self-sacrifice has been promoted in the medical profession and health organisations prioritising the needs of patients above all else, even above doctors' own health needs.¹ The World Medical Association expressed its concern in this respect and issued a declaration to this end.² The declaration incorporated a key reference to doctors' own health into its Physician's Pledge: 'I will attend to my own health, well-being, and abilities to provide care of the highest standard'.

The fact that a physician can become a patient is never approached during undergraduate years, and once they are practising physicians, they have internalised that the patients can only be another.³

When doctors fall ill, they become atypical patients⁴ and have difficulties in taking on the role of patient. Consequently, behaviours of self-diagnosis,⁶ self-treatment⁷ and the use of alternative healthcare pathways⁸ are frequent. Doctors who treat ill colleagues very often do not act as they would with a standard patient and may feel pressured, tense, and uncertain.⁹ Therefore, the care received by ill doctors may be of poorer quality than standard. In the meanwhile, working while ill, physicians might pose risks to their patients.^{10,11}

To be an ill physician has an impact on the process of providing care and professional competence⁴ and leads to high rates of presenteeism.⁵⁻⁷

It is difficult to find epidemiological information regarding ill doctors in European countries except from

Scandinavian countries^{8–10} and Ireland.¹¹ Nevertheless, there is an increasing number of publications regarding mental health issues in the medical profession.^{6,12–14} But the anomalous behaviour of ill doctors affects the way they cope with any illness.

Therefore, we conducted a research project: “Getting Sick is Human: When the Doctor is the Patient” with the aim to provide a whole understanding of the process of doctors falling ill through a qualitative approach considering ill doctors and professionals involved and a survey to get medical population behaviours and attitudes towards physicians own process of becoming ill. The present study aims to present the study protocol and the psychometric validation of the questionnaire “Behaviours and Attitudes of Doctors facing their Own Illness” (CAMAPE, Comportamientos y Actitudes del Médico Ante su Proceso de Enfermar).

Material and methods

The study consisted in two stages. A qualitative approach was developed to get direct information from sick doctors and doctors involved in the healthcare process and second a national survey was designed.

A literature search on the process of doctors getting ill raised key frequent topics as health issues, impact on work, presenteeism, seeking help, the role of ill doctors and medical associations, self-management that were issued to build the scripts (Fig. 1). We created a script for semi-structured interviews to ill doctors in different professionals’ stages (training, practising and retired doctors) and a script for focus groups. The focus groups considered main stakeholders on the care of physicians as occupational medicine professionals, teaching doctors, doctors of ill doctors and members of medical colleges. The profiles of the focus groups are detailed in Fig. 2. Both semi-structured interviews and focus groups were performed and analysed by two researchers with the support of MAXQDA 12.0 program and using discourse analysis and grounded theory.¹⁵

Questionnaire development

An initial questionnaire was designed with items sourced from literature search and the four main dimensions obtained from the qualitative analysis: health issues, impact on work, seeking help, the role of ill doctors and medical associations. The questionnaire was piloted with debriefing by experts. At the suggestion of experts, questions from the 2017 Spanish National Health Survey (ENSE17)¹⁶ were incorporated in order to allow comparison of certain lifestyle habits and use of health services with the population with the same level of education and age as other studies.¹¹

The items were grouped into three sections: (1) socio-demographic items as speciality, employment status, public/private/combined practice and professional satisfaction; (2) items related to health issues (chronic illness, flu vaccination, smoking, alcohol use, relationship with general practitioner) and the impact of illness on work (sick leave, presenteeism, time in sick leave) as well as issues related to falling ill (self-diagnosis, self-treatment, alternative pathways to diagnosis and treatment, patient care and confidentiality); (3) items referred to topics as being

consulted by ill colleagues, being doctor of a doctor, medical associations, ethical considerations regarding periodic revalidation and a final open question regarding proposals about improve the provision of healthcare to ill doctors.

Target population

The target population was the 270,000 Spanish registered physicians. Random sampling was conducted with a $(1 - \alpha):99\%$ confidence interval, 3% precision and sample proportion of $p=0.5$ that would maximise sample size, with an expected attrition rate of 50%. The total sample consisted of 3662 physicians. The questionnaire was designed with a self-report format to be filled online in the Organisation of Spanish Medical Associations (OMC) website <http://www.cgcom.es/>. All physicians registered in any of the 50 Provincial Medical Associations in Spain had accessed to the online questionnaire. Provincial Medical Associations publicised the survey on their website, inviting registered physicians to respond to it. The survey was introduced by a video explaining the research project “Gettting sick is human: when the doctor is the patient”. The questionnaire was available from June 2017 to June 2018. The study was approved by the Research Ethical Committee of Aragon in 2016.

Questionnaire validation

The validation process was divided into two stages (1) assessment of face validity, content validity and feasibility and (2) assessment of construct validity and reliability.

The validation process¹⁷ consisted of assessing face validity and content validity through debriefings with experts from the field of medical ethics, Fundació Galatea (a Spanish foundation created to protect the health and well-being of health professionals),¹⁸ the standing committee of the Organisation of Spanish Medical Association and the research team.

In terms of feasibility, the assessment took into consideration the percentage of unanswered questions, and the access to the questionnaire which was only available to Spanish registered physicians.

Construct validity was assessed by exploratory and confirmatory factor analysis (EFA and CFA). Prior to this, the suitability of the factor analysis was evaluated by the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy. Adequacy was also evaluated through a correlation matrix by Bartlett’s Test of Sphericity. In our case, the p -value associated with Bartlett’s test was <0.001 , confirming the use of this technique. The following goodness-of-fit statistics were obtained for CFA Normed fit index (NFI), the Root Mean Square Error of approximation (RMSEA) index and the comparative fit index (CFI) as well. To interpret the factors resulting from the CFA, we identified first the items whose correlations with the factors were highest in absolute value, given that they could be directly or indirectly related.

The reliability was measured through the internal consistency of the whole questionnaire and for each factor through the correlation coefficients and Cronbach’s alpha Index. The protocol and validation stages are summarised in Fig. 3.

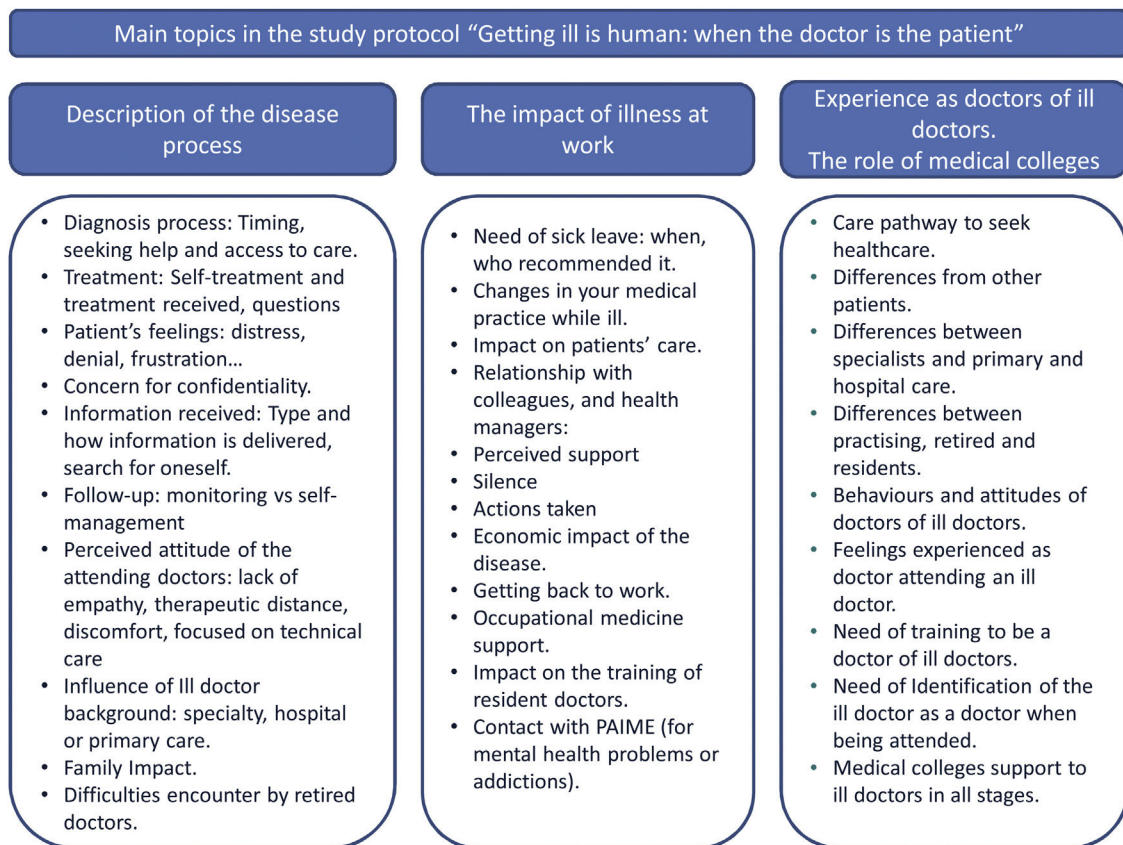


Figure 1 Main topics in the study protocol “Getting ill is human: when the doctor is the patient”.

Focus Group 1: Members of Provincial Medical Associations				
	Sex	Province	Speciality	Age (y.o.)
FG1-1	Male	Barcelona	Gastroenterology	69
FG1-2	Female	Granada	Forensic medicine	64
FG1-3	Male	Guipuzcoa	Geriatry	63
FG1-4	Male	Salamanca	Pathology	67
FG1-5	Female	Cantabria	Family Medicine	63
FG1-6	Female	Madrid	Occupational Medicine	45
FG1-7	Female	Madrid	Psychiatry	48
FG1-8	Male	Tenerife	General Surgery	66
FG1-9	Female	Madrid	Infectious Diseases	48
FG1-10	Female	Las palmas	Anesthesiology	64
FG1-11	Male	Toledo	Family Medicine	50
FG1-12	Female	Tarragona	Family Medicine	65

Profiles of Focus Groups

Focus Group 3: Speciality Program Directors and Teaching Doctors				
	Sex	Position	Size of hospital (No. beds)	Age (y.o.)
FG3-1	Female	Program Director	<500 beds	48
FG3-2	Female	Program Director	<500 beds	53
FG3-3	Male	Teaching Commission	>1000 beds	50
FG3-4	Female	Program Director	<500 beds	53
FG3-5	Male	Program Director	500–1000 beds	51
FG3-6	Female	Teaching Doctor	500–1000 beds	49

Focus Group 2: Members of Occupational Medicine Services			
	Sex	Size of hospital (No. beds)	Age (y.o.)
FG2-1	Female	500-1000 beds	45
FG2-2	Female	500-1000 beds	59
FG2-3	Female	>1000 beds	57
FG2-4	Female	500-1000 beds	55
FG2-5	Female	<500 beds	48
FG2-6	Male	<500 beds	50

Focus Group 4: Doctors of Ill Doctors.				
	Sex	Position	Speciality	Age (y.o.)
FG4-1	Female	Hospital Doctor	Infectious Diseases	59
FG4-2	Male	Hospital Doctor	Internal Medicine	60
FG4-3	Female	Emergency Dept.	Family Medicine	45
FG4-4	Female	Health Center	Family Medicine	52
FG4-5	Female	Hospital Doctor	Orthopedic Surgeon	42
FG4-6	Male	Hospital Doctor	General Surgeon	58

Figure 2 Profiles of focus groups.

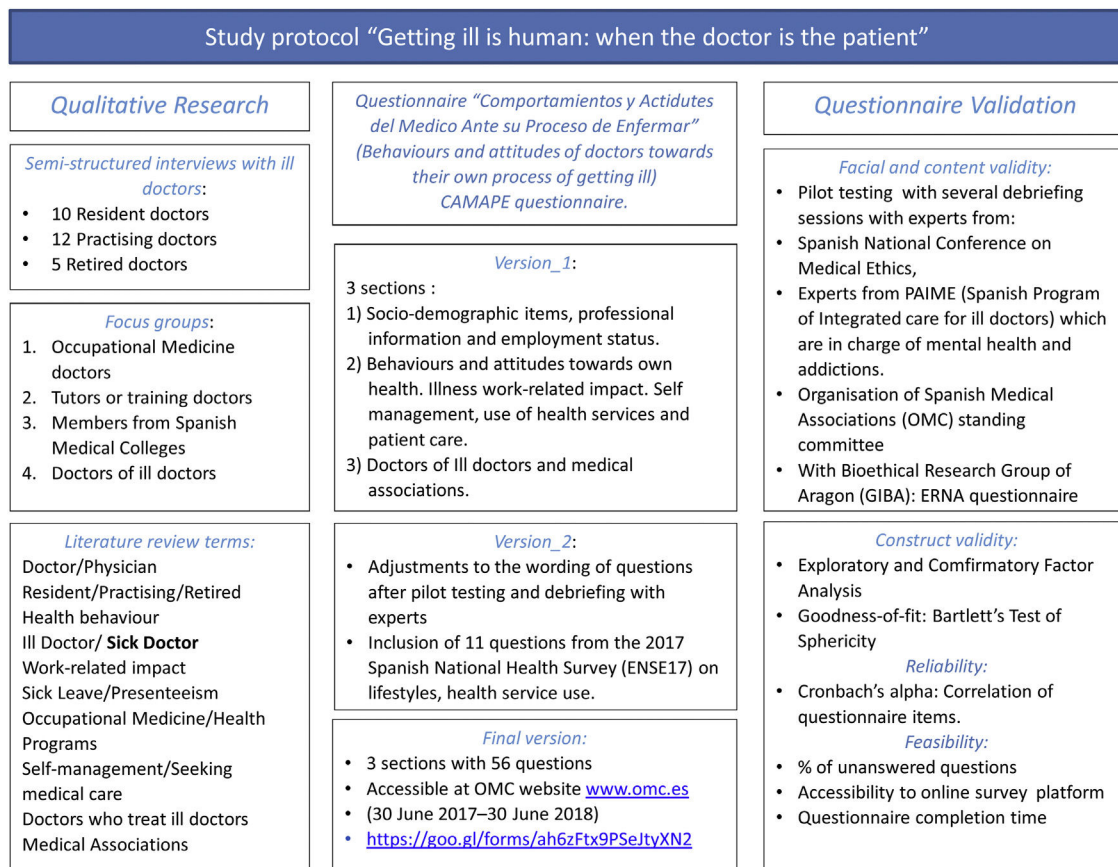


Figure 3 Study protocol “Getting ill is human: when the doctor is the patient”.

Results

Questionnaire development

A total of 27 interviews to sick doctors and 4 focus group were developed. Regarding literature search, there wasn’t any Mesh topic regarding this issue. So, we mainly used “sick doctor” as the most specific descriptor used on scientific literature.

A final questionnaire with 56 questions was launched (Appendix-1: Final questionnaire). The questionnaire was completed by a total of 4308 physicians, of whom 1858 were men (43.13%) and 2450 women (56.87%). The participation of female junior doctors (73.06%) was higher than male (26.94%). By speciality, the percentage of women in medical specialities was higher than in surgical specialities. (59.37% vs 40.63%). Retired doctors comprised most men (73.08%). The mean age of the male participants (54.78 ± 11.87 years) was higher than that of the female participants (45.95 ± 11.76), with statistically significance among practising doctors and retired doctors (Table 1).

Only three questions were not answer by all participants (Table 2). The highest percentage of non-responses was for question 21. The validation was carried out only with the answered values for each item. The rest of items were answered by 100% of the sample size.

Validation of the questionnaire

The EFA and CFA were performed to analyse the distribution of items into factors. The KMO value (0.8193) was good and justified the use of this multivariate technique. Bartlett’s Test of Sphericity obtained a p -value of <0.001 , indicating that the items were related and confirming the use of EFA.

The NFI of 0.721, RMSEA index below 0.109 and a CFI of 0.859 indicated a good model fit for CFA. Five factors were selected as a solution to the EFA, fulfilling the Kaiser rule, selecting all factors whose eigenvalues were greater than one. The factor model with the five factors explained 78.08% of model variance, a high value. Table 3 shows the variance that explains each of the factors, and their aggregate value.

The Factor 1 explained 26.75% of the model. It grouped items regarding “The work might worsen health”; Factor 2 explained 16.68% of the model. It included the relevance of mental health issues, the impact of a bad health on work performance and the weighting of toxic habits (consumption of toxic substances). Factor 3, explaining 15.06%, referred to sick leave and presenteeism; Factor 4, which explained 9.95%, grouped items on the handling of an ill colleague and the role of medical associations. Finally, Factor 5, which explained 9.64% of the model, brought together issues related to the care given to ill physicians and the potential value of revalidation in the health of medical profession.

Table 1 Distribution by age, sex, and professional category of sample.

Professional category	Sex	Number of professionals	Mean	SD ^a	p value
Junior doctors	Male	97	31.67	9.91	$p > 0.05$
	Female	263	28.90	5.95	
Medical specialists	Male	1408	52.93	9.24	$p < 0.05$
	Female	2057	46.84	9.69	
Retired doctors	Male	353	68.48	5.09	$p < 0.05$
	Female	130	66.43	5.58	
Total of doctors	Male	1857	54.78	11.87	$p < 0.05$
	Female	2449	45.95	11.76	
	Total	4306	49.76	12.59	

^a SD: standard deviation.**Table 2** Distribution and percentage of less answered items in CAMAPE.

Items	Answers	Sample size	% non-answered
21. What was the main reason that any of your health problems was the result of or worsened because of your professional activity?	1952.00	4308.00	54.69%
1. The level of responsibility in your profession.			
2. Overwork and working hours.			
3. The impact of a medical error or errors experienced with your patients.			
4. Another reason (give details in the following question)			
25. The main reason you went to work while you were ill was...	3850.00	4308.00	10.63%
1. Your responsibility to your patients			
2. To not overburden your colleagues			
3. Fear of losing your contract			
4. To keep up your regular income			
36. Is your GP your spouse/partner, a family member or close friend?	4186.00	4308.00	2.83%

The internal consistency and homogeneity of the instrument was analysed with Cronbach's Alpha Index for the questionnaire and for each factor. Overall Internal consistency was good (CAI 0.7889) as well as for each factor (F1: 0.8045; F2: 0.6764; F3: 0.5722; F4: 0.6790; F5: 0.6924). A high CAI for each factor showed that the items grouped were stable in each factor.

Discussion

A comprehensive study to analyse behaviours and attitudes of doctors towards their own process of getting ill was launched in Spain for the first time. The study is based in a mixed methodology to get a first-person experienced perspective combined with third-person perspective (those who are involved in the healthcare). Qualitative inputs with literature search and expert feedback got to a questionnaire with 56 items directed at compiling behaviours and attitudes in the medical profession concerning the process of doctors falling ill. The questionnaire was developed and properly assessed the psychometric validation supported by an important sample size of 4308 answers. The sample size reinforced the feasibility of the questionnaire.

The construct validity process through factor analysis allowed us to group the questions in 5 factors that connected items with resemblance of the main dimensions of the qualitative approach and as well as in international studies (9–11). Factors 1, 2 and 3 show that doctors have particular health habits related to tobacco and alcohol intake, physical activity¹¹ which impact on their work. Self-medication is as well recognised in other studies^{9,10,19} and self-management of illness.^{20,21} Some studies show high prevalence of presenteeism^{5,22–24} and the anomalous way doctors seek for help while ill.^{25–27} Factors 4 and 5 are more related to the role of doctors who care for ill doctors²⁸ and the role of medical associations, particularly the potential value of the revalidation process of the medical profession in the health surveillance of physicians.²⁹ All the factors included questions on the process of physicians' health-illness, but each one provided a nuance to the analysis as shown in other studies.^{9,10,19}

The limitations of the instrument cannot be overlooked. On the one hand, sex distribution of participants clearly showed the feminisation of the current medical population.^{23–25} It may have been necessary to incorporate a gender perspective, as it has been explicitly done in other studies on doctors' health.²⁶ We focused on the impact of illness on the medical profession regardless gender issues.

Table 3 Actual variance for each factor and percentage of total variance.

Factor	Number of items	Actual variance	Difference	% Variance of factors	% Total variance
Factor 1	5	3.09456	1.16497	26.75%	26.75%
Factor 2	15	1.92959	0.18723	16.68%	43.42%
Factor 3	13	1.74236	0.59075	15.06%	58.48%
Factor 4	8	1.15161	0.03609	9.95%	68.44%
Factor 5	13	1.11552	0.28656	9.64%	78.08%

So certain variables were not directly taken into consideration, such as responsibility for children²⁷ and the care of elderly persons,²⁸ compatibility with household chores and the profession,²⁹ which most likely have an impact on health and illness in women and which would influence decisions on the careers of future women doctors,³⁰ particularly in surgical fields.³² Therefore, we considered the gender perspective to be a very important area of research to develop in the immediate future by the research group. On the other hand, a self-report survey is limited by the fact that it can rarely be independently verified. However, this factor has a lower weighting in individuals with high levels of education³⁰ as the medical profession. In addition, the fact that it makes use of the Internet may have facilitated participation from younger professionals.³¹ The need to be registered physician to access the platform ensured the suitability of respondents.

A comprehensive study on the process of physicians becoming ill has been launched with a mixed methodology and a reliable multidimensional questionnaire in a large sample of registered doctors. The analysis will help to describe and quantify health behaviours and healthcare pathways of ill physicians, allowing to set evidence-based interventions and formulate policies and ethical recommendations and to involve all the players – medical practitioners and medical associations, occupational health services, governing bodies of health institutions, specialist training units and medical students – in order to guarantee a quality and safe care for the medical profession as a key element of healthcare quality, clinical ethics and professionalism without forgotten to include a gender perspective in the analysis.

Authors' contributions

All the authors are members of the Bioethics Research Group of Aragon that is leading the project "Getting Sick is Human: When the Doctor is the Patient".

This project involves the writing of four doctoral theses related to the stages of the medical practitioner career: medical student, junior doctor, practising doctor and retired doctor.

Dr. Rogelio Altisent-Trota is the lead researcher on the project.

Dr. Bárbara Marco-Gómez is conducting the research focusing on practising doctors.

Dr. Candela Pérez-Álvarez is conducting the research focusing on junior doctors.

Dr. Alba Gallego-Royo is conducting the research focusing on medical students and statistical support.

Dr. María Teresa Delgado-Marroquín and Dr María-Pilar Astier-Peña are joint advisors of the methodology of the study and of the doctoral theses derived from it in conjunction with Dr. Altisent-Trota.

All the authors actively participated in every stage of the research: data collection, statistical analysis, discussion of results and writing of the present manuscript.

Ethics approval and consent to participate

This study was approved by the Clinical Research Ethics Committee of Aragon (CEICA) on 5 October 2016. Registration number CI P16/0236.

All participants in the survey agreed to participate by indicating this at the beginning of the online survey.

Availability of data and materials

All data and materials are available upon request to researchers. Nevertheless, questionnaire database is included as a supplementary material with the manuscript submission.

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Conflict of interests

On behalf of all the authors, Dr. María-Pilar Astier-Peña states that there are no conflicts of interest in relation to the research presented involving any of the authors.

Dr. María Pilar Astier-Peña, corresponding author on behalf of the other signees guarantees the accuracy, transparency, and honesty of all the data and information contained in the study; that no relevant information has been omitted; and that any discrepancies between authors have been properly resolved and described.

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source of information for this study to understand the process of doctors who fall ill during different stages of their professional careers.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.jhqr.2022.04.004](https://doi.org/10.1016/j.jhqr.2022.04.004)

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