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Prescribing patient associations: bringing medical training closer to the patient's reality.

Prescribir asociaciones de pacientes: acercando la formación médica a la realidad del paciente.

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Summary

Introduction: Medical training sometimes presents limitations in the development of patient-centered competencies, especially in understanding the experience of illness and the role of non-clinical actors. Patient associations are increasingly becoming key players in healthcare systems, although their integration into medical training remains anecdotal. This study evaluates the perceived usefulness of an educational intervention based on the participation of patient associations and other stakeholders among medical students. **Methods:** A cross-sectional observational study was conducted with fifth-year medical students. The intervention consisted of a seminar entitled "Prescribe Patient Associations," with the participation of a patient association and representatives from the pharmaceutical industry. Data were collected using an online questionnaire that included demographic variables, dichotomous questions about knowledge of patient associations, and a Likert scale (1–5) that assessed satisfaction, learning, and relevance. **Results:** 114 students participated (mean age 23.8 years; 60.5% women). 72.8% of participants were previously aware of patient associations, but only 14.9% had had direct contact with them. The activity received high scores for providing an understanding of the illness experience (4.54), the importance of the patient's perspective (4.70), and the usefulness of the associations (4.44). The recommendation to integrate this activity into the curriculum was high (4.44). Qualitative analysis showed an overall positive assessment in 30% of responses, along with suggestions for improvement (26.7%) focused on greater patient inclusion and a practical approach. **Conclusions:** Integrating patient associations through an educational intervention model using seminars is an innovative, feasible, and highly valued strategy. This approach helps improve patient understanding and fosters a more humanistic and contextualized medical education. Its incorporation into the curriculum could contribute to an education more aligned with the current needs of the healthcare system.

Keywords: Medical education; patient associations; patient-centered learning; educational intervention.

Abstract

Introduction: Traditional medical education has limitations in developing patient-centered competencies, particularly regarding understanding the illness experience and the role of non-clinical stakeholders. Patient associations have emerged as key actors within healthcare systems; However, their integration into medical education remains limited. This study evaluates the perceived educational value of an educational intervention based on the participation of patient associations and other healthcare system stakeholders among medical students. **Methods:** A cross-sectional observational study was conducted among fifth-year medical students at a Spanish university. The intervention consisted of a seminar entitled "Prescribing Patient Associations," involving participation from a patient association and representatives from the pharmaceutical industry. Data were collected an online questionnaire including demographic variables, dichotomous questions, and a Likert scale (1–5) to assess satisfaction, learning, and perceived relevance. Descriptive analysis was performed using IBM SPSS Statistics v29. **Results:** A total of 114 students participated (mean age 23.8 ± 3.6 years; 60.5% female). While 72.8% were previously aware of patient associations, only 14.9% had direct contact with them. The activity received high scores in understanding the illness experience (4.54 ± 0.64), recognizing the importance of the patient perspective (4.70 ± 0.57), and perceived usefulness of patient associations (4.44 ± 0.67). Recommendation to integrate this activity into the curriculum was also high (4.44 ± 0.80). Qualitative analysis showed an overall positive appraisal (30%), alongside suggestions for improvement (26.7%), mainly focused on greater patient involvement and a more practical approach. **Conclusions:** Integrating patient associations through a multi-stakeholder educational model represents an innovative, feasible, and highly valued strategy. This approach enhances understanding of the patient perspective and promotes a more humanistic and context-oriented medical education. Its incorporation into the curriculum could contribute to better alignment with current healthcare system needs.

Keywords: Medical education; patient associations; patient-centered learning; educational intervention

1. Introduction

Medical education in Spain is structured as a six-year program that combines theoretical content with a progressive integration into clinical practice. During the first years, learning focuses primarily on basic and preclinical sciences, while in later years clinical training is introduced through hospital rotations and primary care placements. This educational model has proven effective for acquiring clinical knowledge and skills. However, several authors have pointed out limitations in the development of patient-centered competencies, such as those related to understanding the experience of illness, communication, and shared decision-making (1-2).

Currently, students' contact with patients during their training is focused on clinical placements in health centers or hospitals under professional supervision, which can limit their understanding of patients' everyday experiences. Thus, outside of purely clinical settings, interaction with patient associations and other actors in the healthcare system, such as the pharmaceutical industry, is practically nonexistent within academic training or occurs only as extracurricular activities. This limits the understanding of key aspects such as the community experience of illness, the role of patient associations in defending healthcare rights, and the interaction between different agents involved in healthcare (3).

Patient associations have emerged in recent decades as fundamental elements within healthcare systems. Their development has been linked to increased citizen participation in health, the recognition of patients' rights, and the promotion of more patient-centered care models (4). Their

objectives focus on supporting patients and families, promoting health education, advocating for patients' rights, participating in health policies, and, increasingly, collaborating in research and healthcare training (5). In Spain, the Draft Bill on Patient Organizations is being developed, reflecting a shift towards more participatory healthcare models by legally recognizing these entities and promoting their structured integration into the decision-making processes of the National Health System. In this way, various international organizations have highlighted the importance of integrating patients and citizens into the training processes of healthcare professionals, promoting more horizontal and participatory models of collaboration (6-7).

Although few in number, the literature in medical education shows that the active involvement of patients in teaching, whether through narratives, clinical sessions, or participation in assessments, is associated with significant improvements in students' empathy, communication, and patient-centered approach (8). A systematic review demonstrated that the active participation of patients in undergraduate medical education improves understanding of the illness experience and fosters the development of more humanistic professional attitudes (3). This has led to the emergence of so-called "patient-as-teacher" models, which allow students to acquire skills difficult to attain through traditional methods (9–11). However, despite this growing evidence, most of the experiences described in the literature focus on the participation of individual patients, with few studies analyzing the role of patient associations in medical training. In this regard, some studies have begun to integrate expert patients or organized groups into training programs, highlighting their potential to enrich learning (12–14).

In the Spanish context, although initiatives exist that incorporate patients into teaching activities, the structured participation of patient associations in medical degree training remains limited. Therefore, there is a need to develop and research new educational models that effectively integrate patients into the curriculum, fostering more contextualized learning aligned with the current realities of the healthcare system. For this reason, the objective of this study is to evaluate the perceived usefulness and the assessment of an educational intervention based on the integration of patient associations, along with other stakeholders in the healthcare system such as the pharmaceutical industry, in a seminar aimed at students in the final years of their medical degree.

2. Methods

2.1 Study design

A cross-sectional observational study was conducted with the aim of evaluating the educational impact of a teaching intervention based on the participation of patient associations and other actors in the health system through a seminar.

2.2 Population and context of the study

The study was conducted at Miguel Hernández University (Alicante, Spain), involving fifth-year medical students. These students are characterized by greater clinical exposure and contact with patients. Participation in the activity was voluntary; students were invited to attend an extracurricular seminar of approximately 2–3 hours in the afternoon as part of the continuous assessment for the Pediatrics I course.

2.3 Educational intervention

The intervention consisted of a seminar entitled “Prescribe Patient Associations,” designed to introduce students to the role of patient associations within the healthcare system. The seminar was organized in collaboration with the ProPatiens Institute, a non-profit organization whose objective is to improve the professionalization and impact of patient associations and which is responsible for the

Patient Chair at UMH. The activity lasted approximately 150 minutes and was structured in the following sections.

- Block 1: presentation and institutional welcome events by the university and the ProPatiens Institute.
- Block 2: Presentation by a patient association, given by the president of the association, focusing on: definition of associations, objectives and their role in the health system.
- Block 3: Presentation by the pharmaceutical industry, addressing: relationship with patient associations, collaboration strategies, ethical codes, and self-regulation frameworks.
- Block 4: Open debate and interaction with students, moderated by experts.

This format allowed for direct interaction between students and different actors in the healthcare system.

2.4 Data collection

Following the seminar, an online questionnaire was sent to participating students via Google Forms to evaluate the activity's impact. The questionnaire included initial demographic questions such as age and gender. It then included dichotomous questions about awareness of or contact with patient associations, as well as Likert-scale questions (1–5) designed to analyze satisfaction with the activity, perception of learning, understanding of the role of patient associations, and the relevance of this training to future clinical practice. Finally, open-ended questions were included to gather students' qualitative feedback. The questionnaire is included as Appendix 1.

2.5 Data Analysis

Statistical analysis of the data was performed using IBM SPSS Statistics software, version 29.0 (IBM Corp., Armonk, NY, USA), employing descriptive statistics for variable analysis. Dichotomous variables were described using absolute and relative frequencies (percentages), while Likert scale variables, although ordinal in nature, were analyzed using descriptive statistics (mean and standard deviation), being considered as approximate continuous variables in accordance with standard practice in medical education studies. In addition, a bivariate analysis was performed by gender, knowledge level, and prior contact with patient associations.

2.6 Ethical considerations

Participation in the study was voluntary. All students were informed of the study's objective and gave their consent for the use of their responses for research purposes. The anonymity and confidentiality of the collected data were guaranteed at all times.

3. Results

3.1 Sample characteristics

A total of 114 students participated, of whom 113 (99.1%) provided informed consent to participate in the study. Regarding gender, 69 (60.5%) were female and 44 (38.6%) were male. The mean age was 23.8 ± 3.6 years. Before the intervention, 83 students (72.8%) were aware of the existence of patient associations, while only 17 (14.9%) had had prior direct contact with one.

3.2 Quantitative results

The students showed a high overall appreciation of the activity, with average scores above 4 on most of the evaluated items, with the exception of trust in industry. The overall data are presented in Table 1. Figure 1 shows the average Likert scale scores for each question, followed by these scores ordered from highest to lowest.

Table 1. Qualitative results of Likert scale questions.

Variable	N	Minimum	Maximum	Average	OF
Considerations of previous associations	113	1.00	5.00	3.96	1.04
Understanding living with chronicity	113	2.00	5.00	4.54	0.64
Patient intervention	113	2.00	5.00	4.44	0.67
It complements subjects	113	1.00	5.00	4.39	0.80
Importance of the patient's perspective	113	2.00	5.00	4.70	0.57
Improves psychosocial sensitivity	112	2.00	5.00	4.52	0.72
Industry talk	112	1.00	5.00	4.12	0.91
Industry confidence	112	1.00	5.00	3.75	0.81
Training recommendation	112	1.00	5.00	4.44	0.80

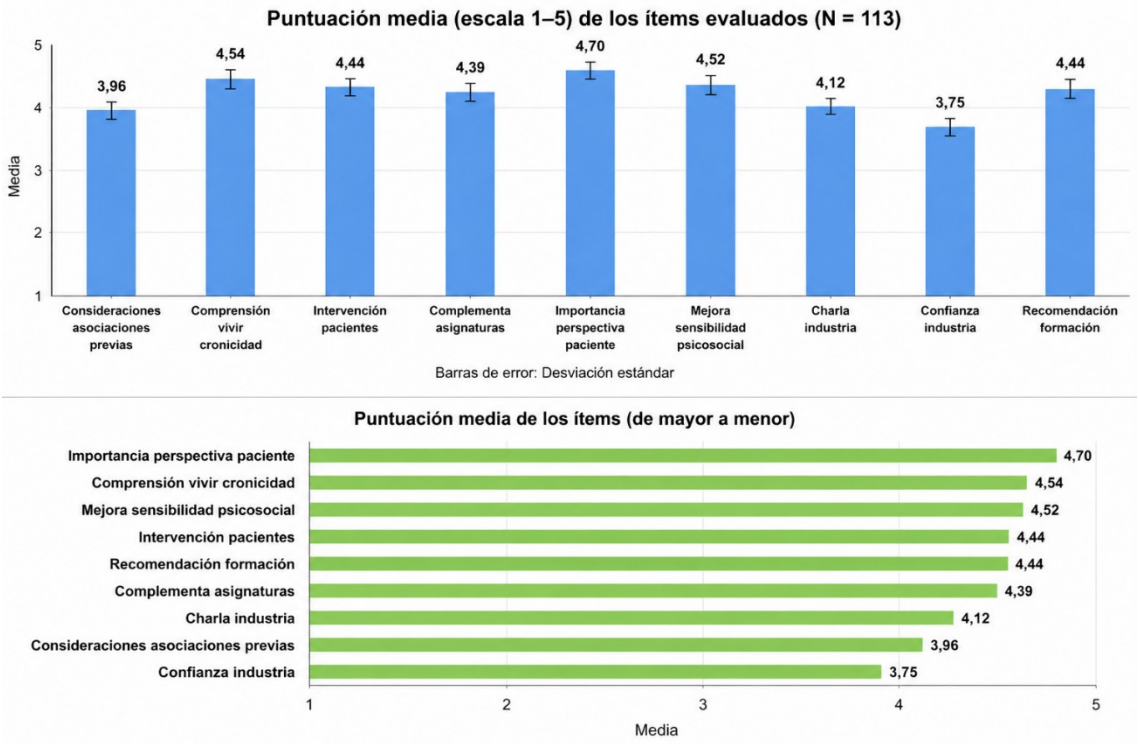

Figura 1. Graphic expression of Likert results.

3.3 Bivariate analysis

A bivariate analysis was performed for gender, prior knowledge of associations, and prior contact with patient associations. For the gender variable, statistically significant differences were observed only with the variable "improvement of psychosocial sensitivity" ($t = 2.26$; $p = 0.026$), with higher means in women (4.64) compared to men (4.33). For the prior knowledge of associations variable, statistically significant differences were observed with the variable "considerations about previous associations," where the mean was higher (4.12) with prior knowledge compared to 3.50 without prior knowledge ($t = -2.89$; $p = 0.005$), and similarly with the variable "complement to

training," with mean values of 4.50 compared to 4.10 in those without prior knowledge (t = -2.37; p = 0.019). Based on prior contact with patient associations, statistically significant differences were observed with the variable "considerations regarding prior associations," with those who had prior contact showing higher values (4.41 vs. 3.88, t = -1.99; p = 0.049). Significant differences were also observed with the variable "improvement in psychosocial sensitivity," which was higher in those without prior contact (4.58 vs. 4.18, t = 2.15; p = 0.034), and finally with the variable "evaluation of the industry presentation," which was better rated by those without prior contact (4.19 vs. 3.70, t = 2.05; p = 0.043). These differences should be interpreted with caution due to the exploratory nature of the analysis, the size of the subgroups, and the lack of adjustment for potential confounding factors.

3.4 Qualitative results

Of all participants, 25.4% responded to the open-ended question. Thematic analysis of the open-ended responses identified several main categories, including positive evaluation of the activity, its relevance to medical training, improved understanding of the role of patient associations, and the development of a patient-centered perspective. Suggestions for improvement also emerged, related to greater inclusion of real patients and a more practical approach. The responses are grouped into several categories, as shown in Table 2.

Table 2. Analysis of qualitative variables, grouped according to theme.

Thematic category	n	%
Positive assessment of the activity	9	30.0%
Improvement proposals	8	26.7%
Need for curricular integration	4	13.3%
Knowledge of patient associations	2	6.7%
Criticisms or limitations	2	6.7%
Non-informative responses	2	6.7%
Relevance to medical training	1	3.3%
Patient's perspective	1	3.3%
Multi-stakeholder approach (industry-associations)	1	3.3%

4. Discussion

This study evaluates the perceived usefulness and assessment of an educational intervention based on integrating patient associations and other healthcare stakeholders into medical student training. The results show high acceptance of the activity, with high scores in satisfaction, perceived learning, and relevance to their training, as well as the need to include the patient perspective in medical education. Beyond the high satisfaction observed, the results can be interpreted through various contemporary learning theories. First, direct interaction with patient associations constitutes an authentic experience that fosters experiential learning as described by Kolb (15), allowing for the integration of concrete experience with reflection and the construction of new meanings. Furthermore, the observed change in the assessment of the patient perspective can be understood through Mezirow's transformative learning theory (16), according to which confronting different perspectives promotes the critical revision of prior beliefs. Finally, the interactive and contextualized nature of the seminar is consistent with Vygotsky's social constructivism (17) and with Lave and Wenger's situated learning (18), by promoting the collective construction of knowledge through the participation of different real actors in the health system.

Our findings are consistent with existing literature and referenced classical theories, suggesting that active patient participation in medical education improves important competencies such as

empathy, communication (19), and patient-centered care (8,10). In particular, the high score obtained for the importance of integrating the patient's perspective (4.70 ± 0.57) suggests that it is perceived as an important element of their learning. This result aligns with recent systematic reviews that highlight that direct contact with patients in educational settings promotes the acquisition of competencies that are more difficult to achieve through traditional methods, especially in the area of humanizing care (9,20). Some articles even argue in favor of proposing patient participation in curriculum development (21). In this way, the activity could contribute to the development of competencies related to empathy and patient-centered care. Although the results obtained correspond mainly to the initial levels of Kirkpatrick's model, focused on the reaction of the participants and the perceived learning, but without evaluating long-term behavioral or competency changes (22).

A distinguishing feature of this study is the inclusion of patient associations as organized entities (through patient associations) within the teaching process. Unlike most previous studies, which focus on individual patients, our model incorporates a collective and structured perspective of the illness experience. This approach allows us to broaden learning to include less explored dimensions, such as interest representation, community health education, and interaction with the health system or private entities. In this regard, the World Health Organization has already highlighted the importance of integrating patients and communities into professional training (7), and there are already systematic reviews that support this patient participation (23). Recent studies have begun to emphasize the value of collaborative models with patients and educational creation (19), where patients participate not only as informants or passively, but as active agents in the training process (24). The results of this study align with these proposals, suggesting that the participation of patient associations is perceived positively and can enrich the training experience, providing more contextualized learning (25).

Another innovative element of the study is the integration of the pharmaceutical industry into the educational model. The data demonstrate a positive assessment of the understanding of the relationship between industry and associations (4.12 ± 0.91), along with a moderate level of confidence in it (3.75 ± 0.81). This suggests that students develop a more critical and nuanced view of the pharmaceutical industry. This finding is relevant, as several authors have pointed out the need to explicitly address conflicts of interest and the complexity of relationships between different actors in the healthcare system in medical training (2,13). The inclusion of this component can contribute to a more comprehensive and realistic training of future professionals without concealing actors who will later be present in their professional practice.

The qualitative analysis reinforces the quantitative results, highlighting a high overall rating of the activity (30%) and a clear perception of its educational value. Importantly, the demand for curricular integration (13.3%) reflects a perceived need among students to incorporate this type of experience into their formal training. This finding aligns with recent proposals advocating for a transformation of medical education towards more participatory, interdisciplinary models focused on the social context of illness (1, 26).

The identified improvement proposals (26.7%) provide key information for the future development of these types of interventions. Among them, the need to incorporate direct patient testimonials, increase the practical nature of the sessions, and diversify the clinical profiles addressed stands out, which would require scheduling several training sessions. These observations align with the literature, which emphasizes that the authenticity of the experience and the diversity of perspectives are determining factors for maximizing the educational impact of patient participation (10, 19). An improvement not identified but worth noting is that these experiences should not remain

anecdotal or isolated incidents; some authors even offer advice on how to make them permanent experiences or collaborations (27).

Limitations

This study has several limitations. First, it is a single-center study and a unique experience, which may limit the generalizability of the results to other contexts. Second, voluntary participation may introduce selection bias, as it included students with a greater interest in this type of activity, although virtually all enrolled students participated. Furthermore, the cross-sectional design, lacking a pre-intervention assessment or control group, prevents establishing causal relationships between the activity and the observed outcomes. The findings should be interpreted as students' perceptions immediately after the intervention and not as evidence of objective competency changes. Finally, the response rate to the open-ended questions was limited, which could underestimate the qualitative results.

Strengths

Among the strengths, the sample size is good for studies in medical education, as is the mixed-methods approach (quantitative and qualitative), which allows for a more comprehensive understanding of the experience. Furthermore, the innovative nature of the multi-stakeholder model, which integrates patient associations and the pharmaceutical industry, provides a distinct advantage over existing literature. Although the results show a very positive assessment of the intervention, future studies should incorporate longitudinal designs, pre-post evaluations, and objective measures of learning to determine its actual effect on professional competencies. It would also be relevant to explore its structured integration into the medical degree curriculum and analyze its reproducibility in other educational contexts. In this regard, this type of intervention aligns with competency-based medical education, in which programmatic evaluation is considered the most coherent methodological framework for assessing students' competency development (28).

5. Conclusions

- The integration of patient associations into medical degree training constitutes an innovative, feasible educational strategy that is highly valued by students.
- The students perceived that the activity fostered a better understanding of the experience of illness and patient-centered care, and offered a more complete view of the healthcare system.
- Its incorporation into curricula could significantly contribute to a more humanistic, critical medical education adapted to the current needs of the health system.

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APPENDIX 1. Questionnaire for evaluating the activity "Prescribes Patient Associations"

Participation in this survey is voluntary and anonymous. Its objective is to assess medical students' perceptions of the training session held with patient associations and representatives of the pharmaceutical industry. Responses will be used exclusively for academic and research purposes.

SOCIODEMOGRAPHIC DATA

1. Consent to participate in the study □ Yes □ No
2. Gender □ Male □ Female □ I prefer not to say
3. Age: _____ years

PREVIOUS EXPERIENCE

4. Before this event, were you aware of the existence of patient associations related to chronic diseases? □ Yes □ No
5. Before this event, had you had direct contact with any patient association? □ Yes □ No
6. Before the conference, I considered that patient associations play a relevant role in the healthcare system. 1 □ 2 □ 3 □ 4 □ 5 □ (1 = Not relevant at all; 5 = Very relevant)

ACTIVITY EVALUATION

Please indicate your level of agreement with the following statements using a scale of 1 to 5: (1 = Not at all; 5 = Very much/Completely)

7. This day has allowed me to better understand the experience of living with a chronic illness. 1 □ 2 □ 3 □ 4 □ 5 □
8. The interventions of the representatives of patient associations were useful for my medical training. 1 □ 2 □ 3 □ 4 □ 5 □
9. This activity has adequately complemented the content I receive in my Medicine courses. 1 □ 2 □ 3 □ 4 □ 5 □
10. After this session, I consider it even more important to include the patient's perspective in clinical practice. 1 □ 2 □ 3 □ 4 □ 5 □
11. The day has improved my sensitivity to the psychosocial needs of patients. 1 □ 2 □ 3 □ 4 □ 5 □
12. The presentation by the industry representative helped me better understand the relationship between industry and patient associations. 1 □ 2 □ 3 □ 4 □ 5 □
13. My confidence in the industry regarding patient associations is: 1 □ 2 □ 3 □ 4 □ 5 □ (1 = Low, I do not trust; 5 = High, I trust)
14. I would recommend including these types of activities in the regular training of medical students. 1 □ 2 □ 3 □ 4 □ 5 □

OPEN QUESTION

15. You may make any additional comments you deem appropriate regarding the day: