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Addressing the associative stigma of psychiatry and psychiatrists: a survey on the attitudes of medical and nursing students and doctors in Verona, Italy

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Abstract

Background Negative societal attitudes toward mental health often contribute to misconceptions and stereotypes about psychiatry, a phenomenon known as "associative stigma". This stigma can hinder collaboration between psychiatrists and other specialists and deter students from pursuing psychiatry as a career. This study focused on one of the three main components of stigma by examining attitudes toward psychiatry and psychiatrists among medical and nursing students, as well as doctors, and identifying factors that influence these attitudes.

Methods A cross-sectional survey was conducted among medical and nursing students at the University of Verona and doctors affiliated to the Medical Professional Association of Verona. Attitudes toward psychiatry were assessed using the Attitude to Psychiatry Scale. Regression analysis evaluated the relationship between participants' characteristics and their attitudes toward psychiatry and psychiatrists.

Results A total of 511 medical students, 394 nursing students, and 638 doctors participated in the study. While students had generally positive attitudes towards psychiatry, they perceived it as lacking full respect within medial community (84% medical, 76% nursing), having low prestige (63.5% medical, 65.9% nursing), and receiving insufficient encouragement in university courses (39% medical, 41.7% nursing). Doctors also expressed positive attitudes, though to a lesser extent than students. Their primary concerns related to patient care: 81% reported feeling emotionally drained when treating psychiatric patients, and 58.2% felt that patients were not appreciative of the care received. Female students and doctors, students who had taken psychiatric courses, and doctors in non-surgical specialties exhibited more positive attitudes.

Conclusions This study revealed generally positive attitudes towards psychiatry, underscoring its relevance as a medical specialty. However, concerns regarding the discipline's perceived status and respect within the medical field highlight areas for targeted interventions to enhance its image and encourage greater interest among students and professionals.

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Introduction

Mental illness stigma is an overarching term encompassing issues related to knowledge (ignorance or misinformation), attitudes (prejudice), and behavior (discrimination) [1]. Stigmatizing attitudes and behaviors towards people with mental disorders exhibited by the general public result in numerous harmful effects, including unemployment, poor quality of life, and social exclusion [2].

Stigma extends beyond those who directly experience it and affects those associated with stigmatized individuals [3]. This form of stigma, known as associative stigma, includes family members, informal caregivers and mental health professionals [4]. Psychiatrists, in particularly, are exposed to associative stigma [5]. Negative societal attitudes towards mental health often perpetuate misconceptions and stereotypes about psychiatrists, reinforcing beliefs that they are flawed or untrustworthy. These attitudes undermine the legitimacy of psychiatry as a medical specialty, potentially deterring individuals from seeking mental health care.

In addition to public perceptions, associative stigma also shapes attitudes within the healthcare field. Medical and nursing students, as well as doctors in other specialties, may hold negative views of psychiatry, which can hinder interdisciplinary collaboration and the adoption of integrated care models in healthcare settings [6]. Associative stigma also affects psychiatrists' professional identity, career choices, and retention in public mental health services. Stigma surrounding psychiatry may discourage medical students from pursuing it as a career [7], while lack of recognition and respect for psychiatry within the healthcare community can undermine morale, reduce job satisfaction, and negatively impact the well-being of mental health professionals [8]. This creates a cycle that reinforces systemic barriers to integrating mental health into both primary and specialized care, limiting comprehensive patient care. Addressing these entrenched attitudes within the medical field is critical for improving mental health outcomes and fostering a more inclusive healthcare environment.

While extensive research has explored medical students' attitudes toward psychiatry across various cultures over the past three decades, fewer studies have investigated nursing students' perceptions, and even fewer have focused on doctors' attitudes. Three recent literature reviews suggest that medical students generally view psychiatry positively, although it is rarely their preferred career choice [7, 9, 10]. Misconceptions about psychiatry, such as concerns about its scientific rigor [11, 12], therapeutic efficacy [11], specialty prestige [11, 13], respect from other medical disciplines [12, 14], salaries [15, 16], and the challenges of working with psychiatric patients, shape these attitudes. Positive factors influencing attitudes include female gender [9, 11, 15, 17, 18], prior exposure to psychiatric patients, and personal or familial experiences with mental illness [12, 19]. Clinical exposure to psychiatry during training has shown mixed results, with some studies indicating improved attitudes [20], while others report no significant changes [21].

Nursing students also tend to hold favorable attitudes toward psychiatry [22, 23], but mental health work remains an unpopular career choice due to factors such as gender (e.g., male students), education quality, fear of mental illness, stigma, and negative perceptions of psychiatric patients [24]. Educational preparation and clinical rotations have been shown to positively influence nursing students' attitudes toward working in mental health [25]. While attitudes toward mental health nursing have been well-documented, fewer studies have focused on nursing students' views of psychiatry as a discipline.

Research on doctors' attitudes toward psychiatry is more limited. Surveys of European and Asian medical teaching faculty revealed negative views of psychiatry, psychiatric treatments, psychiatrists as role models, psychiatric training, and psychiatric patients [26]. A study of hospital specialists across seven countries reported that cultural and geographical factors significantly influence how personal and professional characteristics shape attitudes toward psychiatric consultations and management [27]. Studies from various countries consistently find stigmatizing views toward individuals with mental health problems among general practitioners and other specialists [28–30]. However, few studies have specifically focused on attitudes toward psychiatry as a discipline, highlighting the need for further research.

This study aims to fill this gap by exploring and comparing attitudes toward psychiatry and psychiatrists among medical students, nursing students, and doctors in Italy. Including nursing students allows comparisons with medical students, as both groups may harbor stereotypical and stigmatizing views of psychiatric patients and mental health professionals. Furthermore, by examining attitudes across the educational trajectory, from students to established professionals, this study may provide insights into how education, clinical exposure, and professional experience shape stereotypes within the healthcare community. Additionally, this is the first study conducted in Italy to address this issue, offering novel insights into perceptions of psychiatry among future and practicing healthcare professionals 45 years after the implementation of Law 180, which established a

nationwide community-based mental healthcare system and closed psychiatric hospitals.

Specifically, we sought to investigate factors influencing attitudes, such as gender, academic exposure to psychiatry, and clinical experiences. We hypothesized that medical and nursing students would generally hold more favorable attitudes toward psychiatry, with female students expected to have the most positive views. We also anticipated that those who had completed academic courses in psychiatry and clinical internships would exhibit more favorable attitudes. Finally, we hypothesized that doctors would hold more stigmatizing attitudes toward psychiatry compared to students, reflecting the potential influence of professional experience on perceptions of mental health.

Methods

Study design

This cross-sectional online survey was conducted between May and July 2022 across three distinct groups. The first group comprised students enrolled in the six-year in Medicine and Surgery degree program at the University of Verona. The second group included students enrolled in the three-year bachelor's degree in nursing at the same university. Students from all academic years were eligible to participate in both groups. The third group consisted of doctors who were members of the Medical Professional Association of the Verona province.

Data collection

The research team developed an invitation e-mail containing a study description and a link to the online questionnaire. The director of the Medicine and Surgery program at the University of Verona distributed this e-mail to all enrolled medical students via their official university email addresses. Likewise, the director of the Nursing degree program sent the e-mail to all enrolled nursing students through their university e-mail accounts. The President of the Medical Professional Association of Verona shared the invitation with all registered members via their professional e-mail addresses.

The online questionnaire comprised two sections. The first section collected demographic and background information, including age, gender, year of study, and career aspirations for students, while for doctors it gathered data on age, gender, work experience, specialization, professional role, and workplace. The second section assessed participants' attitudes toward psychiatry and psychiatrists using standardized scales.

The invitation e-mail clearly explained the study's purpose, procedures, and voluntary nature of participation. Participants were assured of anonymity and data confidentiality through the use of unique identification codes. Informed consent was obtained through an agreement statement, which participants had to actively confirm before proceeding with the questionnaire. Ethics approval was granted by the Research Ethics Committee of the University of Verona (Protocol No. 19.R1/2022).

Study instrument

Attitudes toward psychiatry among medical and nursing students were assessed using the Attitude to Psychiatry Scale (APS), developed by Balon et al. [16]. The APS is a standardized self-report measure comprising 29 items across six thematic domains: general ideas of psychiatry (3 items), efficacy of psychiatric treatments (3 items), role definition and functioning of psychiatrists (7 items), possible abuse of power and social criticism (2 items), career and personal reward (8 items), and factors related to teaching psychiatry (6 items). Respondents were recorded on a 4-point Likert scale (from 1 "strongly agree" to 4 "strongly disagree").

Doctors completed a self-report scale consisting of 34 items, developed by Stuart et al. [26]. The questionnaire assesses six domains: perceptions of psychiatry as a discipline (5 items), perceptions of the efficacy of psychiatric treatments (7 items), perceptions of psychiatrists as role models (5 items), perceptions of psychiatry as a career (7 items), perceptions of psychiatric patients (7 items), and perceptions about the quality of psychiatric training (6 items). Responses were also rated on a 4-point Likert scale (from 1 "strongly agree" to 4 "strongly disagree").

At the time of the study, validated Italian versions of both scales were not available. To ensure content adequacy, the original English versions were translated into Italian and subsequently back-translated with the assistance of a native English speaker. However, a formal validation study of the translated scales was not conducted.

Statistical analysis

Categorical variables were described as absolute numbers (n) and percentages (%); continuous variables were summarized as means and standard deviations (SD). The responses to the APS statements were dichotomized, and the percentages of negative perceptions between medical and nursing students and between medical doctors and medical students were compared using Fisher's exact test. To explore the association between participants' characteristics and perception of psychiatrists and psychiatry, a mean score was calculated for each APS domain, treating the 4-point Likert scale as continuous. The statements' scoring was reversed when appropriate with higher scores indicating more negative perceptions.

Univariate linear regression models were estimated for each study population with mean APS domain scores as the dependent variables and background participants' characteristic as the independent variables. Participants' characteristics showing a significant association ($p < 0.05$)

Table 1 Characteristics of the medical ($n=511$) and the nursing students ($n=394$)

Characteristics	Medical students		Nursing students	
	n	%	n	%
Sex, female	350	68.5	334	84.8
Year of study				
1	99	19.4	147	37.3
2	100	19.6	117	29.7
3	86	16.8	119	30.2
4	56	11.0	11[#]	2.8[#]
5	50	9.8	-	-
6	80	15.7	-	-
>6	40	7.8	-	-
I have attended the academic course in psychiatry*	160	31.3	123	31.2
I liked the academic course in psychiatry	155[a]	96.9[a]	116[b]	94.3[b]
I have attended clerkship in psychiatry/ mental health*	158	30.9	24	6.1
I liked clerkship in psychiatry/mental health	79[c]	50.0[c]	18[d]	75.0[d]
I might consider psychiatry as a career choice / I might consider working in a mental health service after graduation	169	33.1	138	35.0
I started medical school to take a residency in psychiatry / I started nursing school to become a mental health nurse	24	4.7	14	3.6
	mean	sd	mean	sd
Age (years) (10 missing for medical students)	23.6	3.2	24.0	5.8

[#] >3 for nursing students; [a] out of 160 who attended; [b] out of 123 who attended; [c] out of 158 who attended clerkship; [d] out of 24 who attended clerkship

*As per the Verona MD curriculum, the psychiatry course is conducted in the fifth year and clerkship attendance is required for all students during the academic program; as per the Verona nursing school curriculum, the psychiatry course is held in the third year and clerkships in mental health services are not required

with APS domain scores were entered into the multivariate linear regression models. To avoid collinearity, only one variable from highly associated pairs was chosen for the multivariate regressions: specifically, for students, "age" and "year of study" were not included due to their significant association with "attending psychiatry course". Similarly, for medical students, the variable "having attended psychiatric clerkship" was excluded due to its significant association with "having attended the psychiatric course". For medical doctors, "age" was not included due to its significant association with "years of work experience". Independent variables with a low sample size (for both medical and nursing students, "having started medical school to become a psychiatrist/a mental health nurse"; for nursing students, "having attended clerkship in psychiatry") were also excluded from the regression analyses. In the online supplementary material, a detailed description of the choice of the independent variables and of the criteria for not considering interaction terms

Table 2 Characteristics of the Doctors ($n=638$)

	n	%
Age (years)		
≤35	110	17.2
36–45	89	13.9
46–55	83	13.0
>55	356	55.8
Sex, female	301	47.2
Working experience (years)		
≤10	161	25.2
11–20	81	12.7
>20	396	62.1
Type of specialization[#]		
Surgical area[1]	150	29.0
Medical area[2]	256	49.3
Services area[3]	80	15.5
Mental health area[4]	32	6.2
Type of work (22 missing)		
General practice/family medicine	105	17.1
Specialist in public hospitals/outpatient public services	203	32.9
Specialist in private hospitals/ private practice	201	32.6
Training Specialist/resident	46	7.5
Retired	61	9.9

[#]out of 518 who had a specialization

[1] General surgery, urology, anesthesiology, ophthalmology, otolaryngology, odontology, obstetrics/gynecology, orthopedics

[2] Internal medicine, general practice, cardiology, gastroenterology, geriatrics, nephrology, endocrinology, hematology, dermatology, infectious diseases, oncology, rheumatology, pneumology, sports medicine, immunology, neurology, pain therapy, aesthetic medicine

[3] Radiology, public health, occupational medicine, pathology, forensic medicine, physical medicine, pharmacology, nutrition

[4] Psychiatry, child neuropsychiatry

is available. Statistical analyses were performed using STATA 17 for Windows.

Results

Samples' characteristics

Table 1 presents the characteristics of the student population. Among medical students ($n=511$; 42% of eligible), 68.5% were females, mean age 23.6 (SD 3.2), evenly distributed across the six study years. Of these, 31% had completed both the theoretical psychiatry courses and the clinical clerkship; 33% had considered a career in psychiatry, and 4.7% entered medical school with the intent of becoming a psychiatrist. Among nursing students ($n=394$; 19% of eligible), 85% were female, with a mean age of 24 years (SD 5.8), evenly distributed across the three years. Of these, 31% had completed theoretical psychiatry coursework, 6% had participated in clinical placement within mental health services, 35% had considered a career in mental health s, and 3.6% had enrolled in nursing school with the intention of working in mental health services.

Table 2 outlines the characteristics of participating doctors ($n=638$; 13% of eligible). Over half were older than 55 yrs, with an equal gender distribution. A total of

62% had more than 20 years of professional experience; 49% specialized in medical disciplines and 29% in surgical disciplines; 33% worked in public hospitals/outpatient services or in private hospitals/private practice; 17% were general practitioners; 10% were retired; and 7.5% were medical residents.

Females were overrepresented in all groups compared to their respective eligible populations (medical students: 68.5% vs. 59%; nursing students: 84.8% vs. 78.4%; doctors: 47.2% vs. 42.4%; Fisher's exact test, $p < 0.05$).

Students' attitudes toward psychiatry and psychiatrists

The frequency distribution of responses from medical students, nursing students, and doctors for study questionnaire items is available in the Online Supplement (Tables 1S, 2S, and 3S).

Figure 1 summarizes the distribution of ratings reflecting negative attitudes towards psychiatry among medical and nursing students.

More than 90% of medical students agreed that psychiatric research has made progress in treating mental disorders, that psychiatry is a valid medical specialty, that they would recommend psychiatric treatment to a family member, that psychiatric consultation benefits medical and surgical patients, and that psychiatric treatment is generally effective. However, 84% perceived psychiatry as lacking respect from other medical disciplines, 63.5% viewed it as a low-prestige specialty, 39% reported a lack of encouragement from their medical school to pursue psychiatry, and 33% believed psychiatrists earned less than other medical specialists. A similar trend was observed among nursing students, with 76% perceiving psychiatry as not fully respected, 65.9% considering it a low-prestige field, and 41.7% reporting insufficient encouragement to pursue a career in mental health nursing.

Doctors' attitudes toward psychiatry and psychiatrists

Figure 2 summarizes the distribution of ratings reflecting negative attitudes towards psychiatry among doctors.

More than 80% regarded psychiatry as stimulating, evidence-based, and prestigious discipline, believed that mental disorders should be treated with the same importance as physical illnesses, and perceived psychiatrists as skilled physicians and good role models for students. However, 81% reported feeling emotionally drained when treating psychiatric patients, 58% felt that patients were not appreciative of care, 50% believed psychiatric patients should be treated separately from those with physical illnesses, 37% doubted the effectiveness of psychiatric treatments, and 32% considered psychiatric treatments less effective than those in other medical specialties.

Table 3 Multivariate linear regression models for the mean dimensions' scores and the mean total APS score [adjusted beta coefficients (p-value)] among medical students (upper part) and nursing students (lower part) (higher scores indicate worse students' attitudes)

Adjusted Beta Coefficients (p-values) for the dependent variables APS dimensions and total scores							
Independent variables	**Overall merits of psychiatry**	**Efficacy of psychiatric treatments**	**Role definition & functioning of psychiatrists**	**Possible abuse and social criticism**	**Career and personal reward**	**Specific medical school factors**	**Total score**
Medical Students							
Sex (ref. 'Male')							
Females		-0.23 (< 0.001)	-0.13 (0.006)		-0.10 (0.018)		-0.10 (< 0.001)
Already attended the course of psychiatry (ref. 'No')							
Yes		-0.11 (0.069)	-0.11 (0.024)	-0.18 (< 0.001)			
I might consider psychiatry as a career choice (ref. 'No')							
Yes				0.09 (0.044)	0.16 (< 0.001)		
Nursing students							
Sex (ref. Male)							
Female		-0.16 (0.026)					
Already attended the course of psychiatry (ref. 'No')							
Yes		-0.16 (0.005)	-0.17 (< 0.001)	-0.17 (0.002)			-0.09 (0.002)
I might consider working in a MH service after graduation (ref. 'No')							
Yes	-0.09 (0.047)	-0.14 (0.014)					

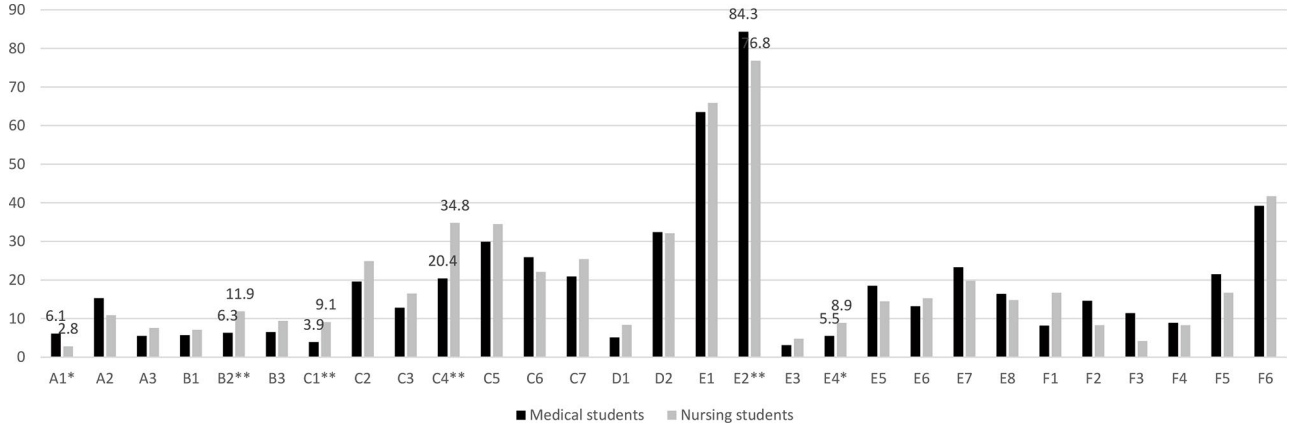

Fig. 1 Comparison of percentage distribution of ratings indicating negative attitudes (dichotomized yes/no) given by medical students ($n=511$) and nursing students ($n=394$) for the APS statements (Fisher's exact test: *$p<0.05$; **$p<0.01$); % are given for significant comparisons. **A1) Psychiatric research has made good strides in advancing care of the major mental disorders**; A2) Psychiatry is a rapidly expanding frontier of medicine; A3) Psychiatry is unscientific and imprecise; B1) If someone in my family was very emotionally upset and the situation did not seem to be improving, I would recommend a psychiatric consultation; **B2) Psychiatric consultation for medical or surgical patients is often helpful**; B3) Psychiatric treatment is helpful to most people who receive it; **C1) Psychiatry is not a genuine and valid branch of medicine**; C2) Most psychiatrists are clear, logical thinkers: C3) With few exceptions, clinical psychologists and social workers are just as qualified as psychiatrists to diagnose and treat emotionally disturbed persons; **C4) Among mental health professionals**, **psychiatrists have the most authority and influence**; C5) Psychiatrists are too frequently apologetic when teaching psychiatry; C6) Psychiatry is too "biologically" minded and not attentive enough to the patient's personal life and psychological problems; C7) Psychiatry is too analytical, theoretical, and psychodynamic, and not attentive enough to patient's physiology; D1) Psychiatrists frequently abuse their legal power to hospitalize patients against their will; D2) On average, psychiatrists make as much money are most other doctors; E1) Psychiatry has a low prestige among the general public; **E2) Psychiatry has a high status among other medical disciplines**; E3) Many people who could not obtain a residency position in other specialties eventually enter psychiatry; **E4) Psychiatry is a discipline filled with medical graduates whose skills are of low quality**; E5) My family discouraged me from entering psychiatry; E6) Friends and fellow students discouraged me from entering psychiatry; E7) If a student expresses interest in psychiatry, he/she risks being associated with a group of other would-be psychiatrists who are often seen by others as odd, peculiar, or neurotic; E8) I feel uncomfortable with mentally ill patients; F1) Teaching of psychiatry at my medical school is interesting and of good quality; F2) During my psychiatry rotation, psychiatry residents were good role models; F3) Attending psychiatrists during my psychiatry rotation were good role models; F4) Most psychiatrists at my medical school are clear, logical thinkers; F5) Most non psychiatry and house staff at my medical school are respectful of psychiatry; F6) Although I am interested in psychiatry, no effort was made to encourage my becoming a psychiatrist/a psychiatric nurse at my medical school

Comparison between study groups

Significant differences were found between medical and nursing students for six APS statements (Fisher's exact test, $p<0.05$) (Fig. 1). Compared to medical students, nursing students were more likely to question the usefulness of psychiatric consultations for medical or surgical patients, perceive psychiatry as an invalid branch of medicine, believe psychiatrists lack authority and influence, and consider psychiatry as a field for low-quality medical graduates. Conversely, medical students were more likely to disagree with statements asserting that psychiatric research has made substantial progress in treating mental disorders and that psychiatry holds a high status among medical disciplines.

Comparing doctors with medical students in corresponding APS domains (Fig. 2), doctors were more likely to perceive psychiatry as an invalid branch of medicine, believe psychiatrists exert excessive control over patients, doubt the effectiveness of psychiatric interventions, feel psychiatrists overlook physiological aspects, and view psychiatrists as lower-quality medical graduates. In contrast, medical students more frequently believed psychiatrists earned less than other specialists and perceived them as lacking clear and logical thinking (Fisher's exact test, $p<0.05$).

Factors associated with attitudes toward psychiatry and psychiatrists

Univariate linear regression models estimated the unadjusted associations between sex, prior psychiatry coursework, and consideration of psychiatry or mental health as a career choice with APS dimension scores for both medical and nursing students (Online Supplement, Tables 4S and "5 S). Significant variables ($p<0.05$) were included in multivariate linear regression models.

Table 3 presents the results of multivariate analyses for medical students (upper section). Females held more positive attitudes toward the "efficacy of psychiatric treatments," "role definition and functioning of psychiatrists," "career and personal reward," and overall perspectives on psychiatry. Attendance at psychiatry courses was associated with more favorable views on "role definition and functioning of psychiatrists" and "possible abuse and social criticism." Students considering psychiatry as a career held more positive attitudes toward "possible

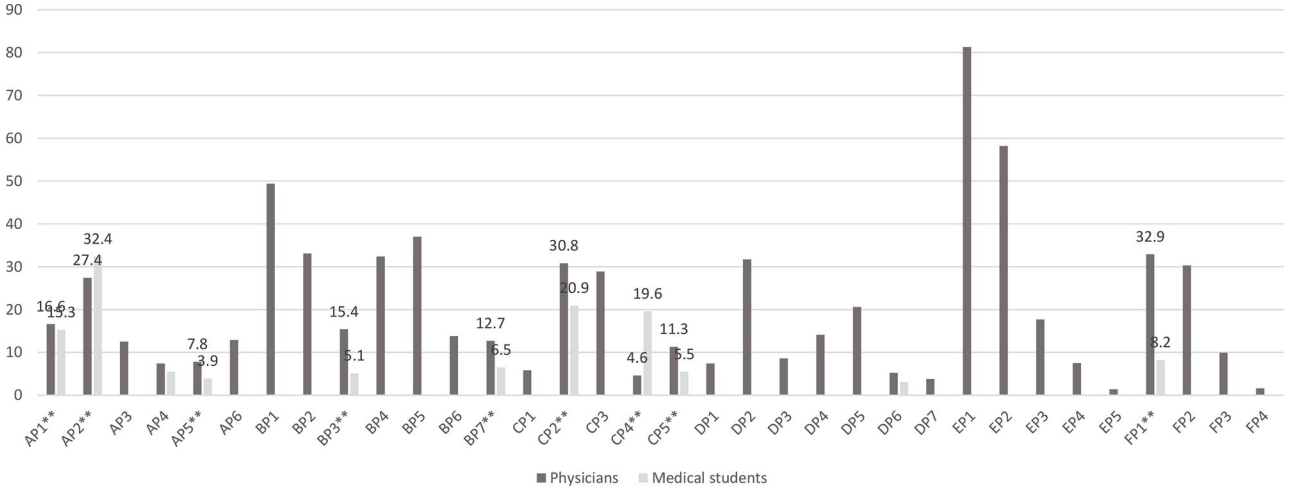

Fig. 2 Percentage distribution of ratings indicating negative attitudes (dichotomized yes/no) given by doctors ($n=638$) for the APS statements [comparisons with medical students ($n=511$) were performed only for statements which pertained to both questionnaire versions (Fisher's exact test: *$p<0.05$; **$p<0.01$); % are given for significant comparisons]. **AP1) Psychiatry is a rapidly expanding frontier of medicine**; **AP2) Psychiatrists make less money than other specialists**; AP3) Psychiatry is not intellectually challenging; AP4) Psychiatry is unscientific; **AP5) Psychiatry is not a genuine**, **valid branch of medicine**; AP6) Psychiatry is not evidence-based; BP1) Patients should be treated in specialized facilities; BP2) Patients should not be treated in general hospitals; **BP3) Psychiatrists have too much power over their patients**; BP4) Treatments are not as effective as in other branches of medicine; BP5) Most who receive treatments do not find them helpful; BP6) Psychiatric units/wards are little more than prisons; **BP7) Psychiatrists can do very little for their patients**; CP1) Most psychiatrists are not good role models for medical students; **CP2) Psychiatrists are not attentive enough to physiology**; CP3) Psychiatrists are difficult to talk to; **CP4) Psychiatrists are not clear**, **logical thinkers**; **CP5) Psychiatry is filled with people whose medical skills are of low quality**; DP1) Many students are not interested in pursuing psychiatry as a career; DP2) Colleagues generally do not speak well of psychiatry; DP3) I would not encourage a bright student to enter psychiatry; DP4) Psychiatry has low prestige; DP5) Students are attracted to psychiatry because of their own personal problems; DP6) Students who cannot get into other specialties enter psychiatry; DP7) Entering Psychiatry is a waste of a medical education; EP1) Psychiatric patients are emotionally draining; EP2) Psychiatric patients are not highly appreciative of the care they receive; EP3) Psychiatric patients are often less interesting to work with than other patients; EP4) Working with psychiatric patients is not rewarding; EP5) Psychiatric illnesses do not deserve as much attention as physical illnesses; **FP1) Psychiatric training is not of the highest quality**; FP2) Students do not think their psychiatric training has been valuable; FP3) Psychiatry is so vague and imprecise it cannot be taught effectively; FP4) Less time should be spent teaching psychiatry to medical students

Table 4 Multivariate linear regression models for the mean APS dimensions' scores and for the total mean APS score [adjusted beta coefficients (p-value)] among medical Doctors (higher scores indicate worse Doctors' attitudes) (the sample was restricted to the 518 Doctors who had a specialization)

Independent variables	Psychiatry as a discipline	Psychiatric treatments	Psychiatrists as role models	Psychiatry as a career	Psychiatric patients	Psychiatric training	Total score
Sex (ref. 'Male')							
Female	-0.19 (< 0.001)	-0.07 (0.125)	-0.13 (0.008)	-0.07 (0.069)			-0.09 (0.003)
Working experience (ref. '≤10 yrs.')							
11–20 yrs.	0.16 (0.027)	0.03 (0.694)				-0.03 (0.748)	
>20 yrs.	0.05 (0.404)	0.04 (0.582)				-0.15 (0.019)	
Specialization (ref. 'Surgical disciplines')							
Medical disciplines		-0.11 (0.043)	0.01 (0.907)	-0.09 (0.049)	-0.04 (0.353)		-0.04 (0.233)
Services disciplines		-0.14 (0.062)	-0.05 (0.485)	0.02 (0.689)	-0.05 (0.438)		-0.06 (0.214)
Psychiatry		-0.37 (< 0.001)	-0.22 (0.044)	0.09 (0.287)	-0.31 (0.001)		-0.13 (0.048)
Type of work (ref. 'GP')							
Public hospital	-0.01 (0.908)	0.05 (0.462)		0.03 (0.655)	-0.08 (0.229)		0.01 (0.814)
Private practice/hospital	0.010 (0.864)	0.12 (0.098)		0.07 (0.249)	-0.15 (0.020)		0.02 (0.675)
Resident	-0.29 (0.346)	-0.16 (0.661)		-0.29 (0.356)	-0.25 (0.439)		-0.14 (0.575)
Retired	0.11 (0.137)	0.18 (0.052)		0.17 (0.026)	-0.09 (0.260)		0.10 (0.117)

abuse and social criticism" and "career and personal reward".

For nursing students (lower section of Table 3), females expressed more favorable views on the "efficacy of psychiatric treatments". Those who had completed psychiatry coursework showed more positive attitudes toward the "efficacy of psychiatric treatments", "role definition and functioning of psychiatrists", "possible abuse and social criticism", and overall perspectives on psychiatry. Students considering a career in mental health services showed stronger appreciation for the "overall merits of psychiatry" and "efficacy of psychiatric treatments".

For doctors, univariate models assessed associations between sex, years of experience, type of specialization, and type of work with APS dimensions. These analyses were conducted for doctors who reported having a specialization ($n = 518$) (Online Supplement, Table 6 S). Significant factors ($p < 0.05$) were included in multivariate models (Table 4).

Females expressed more positive attitudes toward "psychiatry as a discipline", "psychiatrists as role models", and overall psychiatry perceptions. Mid-career doctors (11–20 years of experience) held less favorable views of "psychiatry as a discipline" than those with less than 10 years of experience, whereas those with over 20 years of experience had more positive attitudes toward "psychiatric training". Doctors specializing in medical disciplines viewed "psychiatric treatments" and "psychiatry as a career" more favorably than surgeons. Psychiatrists held the most positive views across multiple domains, including "psychiatric treatments", "psychiatrists as role models", "psychiatric patients", and overall psychiatry perceptions. Private practitioners expressed more positive attitudes toward "psychiatric patients" compared to general practitioners, whereas retired doctors held less favorable views on "psychiatry as a career".

Discussion

This study examined one of the three main components of stigma -attitudes- by exploring attitudes toward psychiatry and psychiatrists among medical and nursing students, as well as doctors, and identifying factors influencing these attitudes. This approach enhances understanding the associative stigma of psychiatry among students and doctors by focusing specifically on attitudes. To our knowledge, this is the first study to concurrently investigate and compare attitudes across three interrelated populations: medical and nursing students and doctors in Italy. By encompassing these diverse groups, our study provides broader insights into the attitudes of both future and current healthcare professionals toward this crucial medical specialty.

Medical students' attitudes

Our findings confirm the hypothesis that medical students generally hold positive attitudes towards psychiatry, consistent with previous reviews [9, 10, 17]. It also support the hypothesis that female students tend to express more favorable attitudes toward psychiatry and psychiatrists, consistent with two global literature reviews [9, 17]. However, a review of studies conducted in the WHO Eastern Mediterranean region [10] found no significant gender differences, while a study from Malta [31] reported more positive attitudes among males. These discrepancies may be influenced by socio-cultural factors, including gender norms, societal perceptions of psychiatry, and regional differences in mental health education [27]. Further research is needed to explore how these cultural and educational differences shape attitudes toward psychiatry.

We also found that students who attended academic psychiatric lessons and subsequent clerkships exhibited more favorable attitudes. This finding supports one of our study hypotheses and aligns with the narrative review of Qureshi et al. [20], which highlights the a significant impact of educational experiences in improving attitudes toward psychiatry among medical students. However, the systematic review by Lyons et al. [21] suggests that exposure to psychiatry may have no effect on attitudes or career choices, while another study reported that exposure might even lead to negative attitudes [31]. These variations suggest that the impact of clinical exposure is context-dependent and influenced by the nature and quality of the educational experience.

Despite generally positive attitudes, concerns persisted among medical students, with a notable proportion viewing psychiatry as less prestigious and financially rewarding than other medical specialties. This finding is consistent with studies conducted in the United States [11, 16] and Venezuela [14]. Such negative attitudes are particularly concerning, as the literature indicates that psychiatry's diminished standing within both the medical community and the public contributes to students' reluctance to pursuing it as a career [11]. Our findings also highlight insufficient encouragement for students interested in psychiatry as a career choice at Verona medical school, suggesting a gap in support and promotion within the medical education. Addressing this issue is crucial for attracting and retaining talented students who have a genuine interest in psychiatry. A more supportive and encouraging environment could help mitigate stigma and enhance psychiatry's appeal as a career choice.

Nursing students' attitudes

Our study found that, overall, nursing students held positive views on psychiatry. This finding aligns with one of our hypotheses, with an early review of Happel et al. [24]

and a more recent study conducted in Singapore [23]. However, compared to medical students, nursing students were more likely to question the usefulness of psychiatric consultations for medical or surgical patients, view psychiatry as an invalid branch of medicine, believe psychiatrists lack authority and influence, and perceive psychiatry as a field for low-quality medical graduates. These findings may be explained by differences in the focus and structure of nursing versus medical education. Nursing curricula often emphasize practical, patient-centered care but may not sufficiently highlight the interdisciplinary importance of psychiatry in broader healthcare contexts. Limited exposure to psychiatry during clinical training, coupled with persistent stereotypes within the healthcare field, may further reinforce these negative perceptions.

This interpretation is consistent with our observation that only a negligible fraction of nursing students in our sample had the opportunity to complete clinical rotations in mental health services, which remain optional in Italian nursing school curricula. Furthermore, we found that students who attended both theoretical lessons and clinical placements in mental health settings exhibited more favorable attitudes, reinforcing previous literature findings [24, 25].

Interestingly, most nursing students in our study expressed positive attitudes towards psychiatric patients. Literature on this topic presents mixed findings, with some studies reporting positive [32] and others negative attitudes towards individuals with mental disorders [24, 33]. This discrepancy may be attributed to cultural differences across countries as well as differences in the quality of mental health education and training programs.

Concerns regarding psychiatry's prestige–both within the general population and among other medical disciplines– were also evident among nursing students, though to a lesser extent than among medical students. These concerns highlight the need for targeted initiatives to promote the value of psychiatric care within the broader healthcare community [6].

Additionally, our study revealed insufficient encouragement for students to pursue mental health nursing, a critical issue given the role of nursing schools in shaping students' interests and guiding career paths [25]. The nursing program at Verona University, representative of Italian nursing schools, lacks substantial focus on psychiatry and mental health nursing. Students received limited theoretical lessons in these fields, with no mandatory clinical rotation, despite a European Community directive recommending routine mental health clinical placements for all nursing programs [34]. Addressing this shortfall is essential for fostering a more competent and engaged mental health nursing workforce.

Doctors' attitudes

Our study found that doctors generally hold positive attitudes towards psychiatry. However, a greater proportion of doctors compared to students expressed less favorable attitudes, supporting one of our hypotheses. The attitudes observed in our study were more positive than those reported in a multisite international study promoted by the World Psychiatric Association, which surveyed medical faculty at 23 academic teaching sites across 15 countries. That study found predominantly negative attitudes toward psychiatry as a discipline, psychiatric treatments, psychiatrists as role models, pursuing psychiatry as a career, psychiatric training, and patients with mental disorders [26]. This discrepancy may be influenced by Italy's extensive history of mental health reform, particularly the implementation of Law 180 in the 1980s, which deinstitutionalized psychiatric care and promoted a community-based model. This paradigm shift may have fostered a more integrated and comprehensive understanding of mental health within the broader healthcare system.

Our study also found that female doctors and those specializing in non-surgical disciplines had a more favorable attitudes toward psychiatric treatments and psychiatrists' careers. The influence of gender on doctors' perceptions is a subject of debate, with studies showing that female doctors express varying levels of stigmatizing beliefs compared to their male colleagues [35–37], possibly due to cultural and educational backgrounds and gender expectations [27]. Additionally, surgeons tend to have more negative attitudes towards psychiatry than medical specialists, potentially because the surgical field emphasizes biomedical models [27, 28].

Moreover, our findings suggest that older and more experienced doctors, including retired practitioners, were more likely to express negative attitudes towards psychiatric treatments and patients with mental disorders. This pattern has been reported in other studies including a systematic review on primary care physicians worldwide [28], and a recent study on Portuguese general practitioners and doctors across various specialties [30]. Some studies, however, suggest that younger doctors may also display negative attitudes [30, 35]. These mixed results may reflect the influence of age extremes on doctors' perceptions [35]. Older doctors may have been shaped by cultural and educational contexts that emphasized outdated view of psychiatry, rooted in notions of segregation and incompetence. In contrast, younger doctors may exhibit negative attitudes due to perceived inadequacies in their training, limited exposure to mental health care during medical education, and the challenges they face when managing patients with complex psychiatric disorders early in their careers.

A substantial number of doctors in our study expressed a preference for treating patients with mental disorders

in specialized settings, separate from those caring for individuals with physical illnesses. This preference has been reported in studies involving doctors across both European and non-European regions [26, 38, 39]. This finding is somewhat surprising in Italy, where mental health care has been community-based for nearly forty-five years, following the implementation of Law 180 and the closure of asylums. Despite Italy's shift to a community-based mental healthcare model, historical practices of segregating psychiatric care into closed institutions may still influence attitudes. Some doctors may associate community-based care with inadequate resources or perceive it as less effective in managing severe mental illness, particularly when compared to the more structured environment of institutional care.

Concerns regarding the effectiveness of psychiatric treatments were also expressed, possibly reflecting historical biases that continue to shape perceptions of mental health issues within certain sectors of the medical community in Italy [11]. These findings highlight the need for ongoing efforts to improve awareness and understanding of psychiatric care among healthcare professionals.

Recommendations

Our findings allow us to propose several recommendations for improving attitudes toward psychiatry among students and doctors. (A) To foster more positive attitudes, we recommend implementing structured clinical experiences, provide mentorships from inspiring role models, ensuring comparable clerkship duration and quality, and offering enrichment activities such as exposure to real-world psychiatric settings and direct patient interactions. These strategies have been shown to reduce stigma in similar contexts [12, 24, 25, 40]. (B) The current medical and nursing curricula in Italy predominantly emphasize biomedical models and diagnostic/nosological frameworks, with limited focus on the practical aspects of psychiatry. To address this gap, we propose a curricular reforms that integrates the bio-psycho-social model, providing a more comprehensive understanding of mental health [16]. This reform should include practical exposure to psychiatry through clinical placements, workshops, and mentorship programs designed to challenge stigma and promote empathy. (C) Given the increasing shortage of mental health nurses in Italy, urgent reforms in mental health nursing education are needed. We recommend adopting frameworks such as the Australian Mental Health Nurse Education Task Force model, which advocates for a minimum number of clinical hours, mandatory theoretical mental health content, clinical rotations, stigma-reduction activities, and consumer participation in curricula and teaching [41]. Implementing such measures would enhance workforce competencies and help reduce stigma within the nursing community. (D) Integrating academic psychiatry teaching with Italy's public health approach is essential for preparing students for their medical and nursing careers. Faculty should actively promote initiatives that challenge stereotypes and stigma through both structured curricula and extracurricular activities. Inspired by models such as those developed by the American Psychiatric Association (APA) in the USA, the Italian Psychiatric Society and nursing associations should take a leading role in promoting positive attitudes toward psychiatry through campaigns, seminars, and outreach programs. (E) Our findings also highlight the need for non-psychiatric doctors in Italy to develop a better understanding of the community mental healthcare. Improved awareness could facilitate better integration of psychiatry within general medical practice. We recommend incorporating mental health training into continuing medical education programs for non-psychiatric doctors, focusing on enhancing their ability to manage psychiatric conditions and care for patients with mental disorders. These interventions should be tailored to the needs of different specialties, considering their specific roles, work environments, and challenges.

Strengths and limitations

This study has several strengths. It includes a diverse population of medical students, nursing students, and medical doctors from the Verona province, north-east Italy, with over 1500 participants. The use of an online questionnaire facilitated data collection and minimized missing responses. Additionally, the APS questionnaire allows for meaningful comparisons with existing literature.

However, several limitations should be acknowledged. (A) Despite the large sample size, response rates were relatively low across participant groups, potentially introducing response bias. (B) The overrepresentation of female participants compared to the eligible population may limit the generalizability of the findings. (C) The cross-sectional design captures attitudes at a single point in time, preventing causal inferences and limiting the ability to assess changes in attitudes over time. Longitudinal studies would provide deeper insights into attitude sifts and underlying causal mechanisms. Repeated data collection from the same individuals over time could further elucidate individual-level changes contributing to broader trends. (D) This study relied on self-reported data, which may be subject to social desirability bias and variations in participants interpretations of questionnaire items. (E) Conducted at a single Italian institution, the study's findings may not be generalizable to the broader population of Italian medical or nursing students or doctors nationwide. (F) Thee results may not be fully applicable to individuals from different cultural backgrounds or

healthcare systems. (G) Due to resource constraints, the study included medical and nursing students as well as doctors, but did not incorporate practicing nurses, limiting its relevance for this professional group. (H) Finally, while the APS questionnaire has been widely used and translated into several languages, we are not aware of formal validation or reliability studies conducted for the original English version or its translations. The Italian version of the scales used in our study has not undergone formal validation, introducing the potential for measurement bias.

Conclusions

This study highlights both the positive and challenging aspects of attitudes toward psychiatry among medical and nursing students, as well as doctors, in Italy. While our findings confirm that psychiatry is generally viewed favorably, they also reveal persistent concerns about its prestige, clinical relevance, and career appeal. These concerns underscore the need for targeted interventions to improve perceptions of psychiatry and reduce associative stigma among future and current healthcare professionals.

Our results have also significant practical implications for medical and nursing education, continuous professional development, and workforce planning at both national and European levels. Given the documented impact of psychiatric education on attitudes, we recommend aligning Italian medical and nursing curricula with European Union directives that emphasize mandatory mental health training and clinical exposure in psychiatric settings. Additionally, our findings suggest the need to integrate psychiatry more effectively into continuing medical education programs for non-psychiatric doctors, ensuring that mental health care is recognized as a fundamental aspect of general medical practice.

Future research should build upon these insights through longitudinal and interventional studies aimed at refining educational strategies and promoting psychiatry within the healthcare community.

By reinforcing psychiatry's role as an essential medical discipline and enhancing its attractiveness as a career choice, we can work toward a more inclusive, competent, and well-supported mental health workforce, ultimately benefiting both professionals and the patients they serve.

Abbreviations

APA American Psychiatric Association.
APS Attitude to Psychiatry Scale.
GP General Practitioner.

Supplementary Information

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Supplementary Material 1

Supplementary Material 2

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Author contributions

AL, CB, CC, PF and CR contributed to the study conception and design. Material preparation, data collection and analysis were performed by CB, AL and LB. The first draft of the manuscript was written by AL, FA and CB. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Data availability

Data is available from corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

All procedures performed in the study involving human participants adhered to the Declaration of Helsinki guidelines and were approved by the Research Approval Committee on Human Subjects of the University of Verona (Protocol No. 19.R1/2022). Informed consent was obtained from all individual participants included in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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