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Complete List of Authors:	Braquehais, María Dolores; Galatea Clinic, Integral Care Programme for Sick Health Professionals; VHIR, Psychiatry, Mental Health and Addiction Research Group Vargas-Cáceres, Sebastián; Benito Menni, CASM, Mental Health Nieva, Gemma ; Galatea Clinic, Integral Care Programme for Sick Health Professionals; Vall d'Hebron Hospital Universitari, Psychiatry Department Mantilla, Maria Fernanda; Benito Menni, CASM, Mental Health of Gracia Ortega, Germán; Hospital Vall d'Hebron, Department of Psychiatry Ramos-Quiroga, Jose Antonio; VHIR, Psychiatry, Mental Health and Addiction Research Group; Vall d'Hebron Hospital Universitari Valero, Sergi; Fundacio ACE; Galatea Clinic, Integral Care Programme for Sick Health Professionals Bruguera, Eugeni; Galatea Clinic, Integral Care Programme for Sick Health Professionals; Vall d'Hebron Hospital Universitari, Psychiatry Department
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PATTERNS OF MENTAL HEALTH SERVICES UTILIZATION BY RESIDENT PHYSICIANS

Running head: Resident physicians accesing mental health services

María Dolores Braquehais[1,2*], Sebastián Vargas-Cáceres[3], Gemma Nieva[1,2,4], Maria Fernanda Mantilla[5], Germán Ortega[4], José A. Ramos-Quiroga[2,4,6], Sergi Valero[1,7],Eugeni Bruguera[1,2,4,6]

[1]Galatea Care Programme for Sick Health Professionals, Galatea Clinic, Barcelona, Spain

[2]Psychiatry, Mental Health and Addiction Research Group, Vall d'Hebron Institut de Recerca (VHIR), Barcelona, Spain

[3]Mental Health Service, Benito Menni CASM, l'Hospitalet de Llobregat (Barcelona), Spain

[4]Department of Psychiatry, Vall d'Hebron Hospital Universitari, Universitat Autònoma de Barcelona, Barcelona, Spain

[5]Mental Health Service of Gràcia, Benito Menni CASM, Barcelona, Spain

[6]CIBER de Salud Mental (CIBERSAM), Instituto de Salud Carlos III, Madrid, Spain

[7]Research Center and Memory Clinic, Fundació ACE Institut Català de Neurociències Aplicades - Universitat Internacional de Catalunya (UIC), Barcelona, Spain

*Correspondence to Dr. M.D. Braquehais, Galatea Care Programme for Sick Health Professionals, Galatea Clinic. Carrer Palafolls, 17, Barcelona 08017, Spain; E-mail: mdbraquehais.paimm@comb.cat

Abstract

Objectives: This study aims to describe the patterns of MIRs' (Medical residency training, in Spanish) utilization to the Barcelona Care Programme for Sick Physicians, a specialized mental health treatment programme, during a 20-year period and to compare them to consultant-grade physicians accessing the same service.

Study Design: Retrospective observational.

Methods: We reviewed 1,846 medical records of physicians registered at the Medical Council-Association of Barcelona and admitted to the programme from January 1998 to December 2018.

Results: MIRs accounted for 18.1% (n=335) of the sample. MIR admissions have increased over the years. Both residents and consultant-grade physicians were predominantly self-referred (more than 90% in both cases). MIRs referrals' growth runs in parallel with primary preventive actions developed by the programme for them and their tutors. The most common specialty among MIRs was Family Medicine (31.9%), followed by Internal Medicine (5.4%), Paediatrics (4.2%), Psychiatry (3.9%) and Anaesthesiology (3.9%). Family Medicine residents were overrepresented when compared both with consultant-grade physicians admitted to the programme and with all residents registered at the Barcelona Medical Council-Association. MIRs, regardless of year of training, mainly asked for help because of adjustment (39.1%), affective (23%) and anxiety disorders (18.8%) while addictive disorders (5.7%) were less prevalent than among consultant-grade physicians (16.1%). However, differences in their main diagnosis did not remain significant after multivariate analysis.

Conclusions: Resident physicians suffering from mental disorders may feel more confident to ask for help at treatment programmes that promote voluntary help seeking.

Keywords: adult psychiatry; medical education & training; mental health.

Strengths and limitations of this study:

- This study addresses a very important issue as residency training is a highly stressful and demanding life period for most physicians.
- It provides a two-decade data describing patterns in utilization of mental health services by physicians.
- Clinical and socio-demographic variables of resident physicians and consultant-grade physicians admitted to a specialized mental health programme are compared.
- A supplementary analysis is conducted to ascertain the differences between junior and senior resident physicians.
- Limitations of this study are its retrospective design; diagnoses not obtained after a structured interview; and the lack of data in terms of personality traits and/or other psychosocial aspects.

Introduction

Becoming a consultant grade specialist is a critical period in a physician's career. Many countries offer training programmes that vary according to their health systems' demands and organizations [1–3]. In Spain, the nationwide medical residency training (in Spanish *"Médico Interno Residente",* MIR) programme was inspired by the "learn by working" US model. It ranges from 4 to 5 years depending on the specialty [4].

Despite differences between countries, this highly demanding period has been associated with a worsening in residents' wellbeing and healthy habits as well as with a higher risk of developing mental disorders [5,6]. During this transitional life stage, young physicians are exposed to several stressors including: heavy workload, sleep deprivation, difficult patients, poor learning environments, relocation issues and living away from family and friends, isolation and social problems, limited free time to relax, financial concerns, cultural and minority issues, information overload, and career planning issues [7,8].

Although most residents are able to endure these stressful conditions without a negative impact on their mental health, there is increasing evidence of the presence of distress among some of them during this training period. Some personality traits (neuroticism, perfectionism or obsessive-compulsive traits) and other vulnerability factors, for example, prior personal or familial psychopathology, may increase the risk of suffering from mental disorders under these challenging circumstances [7,8]. Women physicians have been reported to be at a higher risk of developing affective or mental disorders than men [9,10] although these differences are not supported by other studies [5,11]. On the other hand, male residents seem to be more likely than females to have suicidal thoughts [11] and to develop addictive disorders [12–14].

Among medical residents, prevalence of depressive symptoms is estimated to range from 20.9% to 43.2% [15], while 7 to 22% report having suicidal ideation [16,17]. With respect to substance misuse, around 20% of residents may meet criteria for hazardous drinking [18] and 13% self-medicate with legal drugs to cope with stress [11]. In Spain, 18% of residents are hazardous drinkers [13], and between 8 and 16% self-medicate with psychoactive drugs [12].

Residents may lack support [19] but a main reason may be that they have internal barriers to help-seeking such as concerns about confidentiality [20], "presenteeism" (attendance at work despite ill health)[21], long working hours, and stigma around mental illness [21,22].The impact of physicians'

mental health goes beyond their personal wellbeing and extends to the quality of care provided to patients [20,23,24], increased difficulties in professional relationships, reduced learning ability, worse patient satisfaction and more medical errors [8,25–27]. Characteristics of burnout (poor communication and reduced empathy) run counter to the core principles of patient-centred care [28]. In fact, physicians who maintain healthy lifestyles more likely to focus on preventive strategies with their patients [29,30].

In its 10-year report, the UK Practitioner Health Programme [31] informed that over the first 14 months of this service, 297 junior doctors and a much smaller number of self-referred dentists. Overall, 61 doctors were unwell enough to be on sick leave and 5 were suspended or unemployed. Their main complaints were for anxiety, low mood and stress related problems, the majority of which were related to their workplace. The average age of admission to the UK Programme has steadily dropped during the 10-year period and the number of females has increased as well.

Currently, prevention services for medical trainees have been developed in some countries. In the United States, the Accreditation Council for Graduate Medical Education (ACGME) requires that post-medical training programmes make assistance services available for all residents. Practical interventions include an enhanced focus on resident well-being through a range of ACGME activities [32]. Similar programmes can be created and used by residents and faculty such as those developed by the Oregon Health and Science University [33] and by the University of California San Diego (HEAR programme)[34]. In UK, the Trainee Doctors and Dentist Service, hosted by NHS Practitioner Health Programme, is a psycho education and support service which aims to offer a range of interventions to support trainees (e.g., individual face-to-face support, online Cognitive-Behavioural Therapy, mindfulness and the other groups)[31]. Most jurisdictions in Canada have consolidated a number of services under the banner of a provincial physician health programme (PHP) and they have released a descriptive framework in 2016 to define a series of core services and more standardized programmes for resident and physicians [35]. In Australia, The Royal Australasian College of Physicians Support Programme provides a professional and confidential counselling service to all fellows and trainees run by Converge International, an Australian institution with qualified professionals in mental health [36].

The Galatea Foundation programme for physicians, the Integral Care Programme for Sick Physicians (Galatea-PAIMM in Catalan, PAIME in Spanish), launched by the Barcelona Medical Council-Association (COMB) and later extended to the rest of Spain, was the first of its nature developed in Europe back in

1998. This foundation has developed several primary prevention initiatives (such as workshops, e-learning, and clinical sessions) to promote self-care among residents, such as workshops, e-learning, and clinical sessions, which are an opportunity to share and discuss the causes of stress among resident physicians and how to develop the skills and attitudes to manage them. More than 350 resident physicians have attended these courses to date. The interventions focus not only on the individual but also on the interdisciplinary team where they work [37]. The Galatea Foundation also offers a mental health service for all health professionals working in Catalonia, including physicians, through the Galatea Care Programme [38].

However, little is known about resident physicians being treated in PHPs around the world. This study aims to describe the patterns of MIRs' utilization to the Barcelona Care Programme for Sick Physicians during a 20-year period and to compare them to consultant-grade physicians admitted to the same service. A supplementary analysis will also be conducted to ascertain the differences between junior and senior MIRs.

Methods

Participants

The Galatea Care Programme is offered to all physicians registered at Catalan Medical Council-Associations ("Colegios de Médicos" in Spanish, "Col·legis de Metges" in Catalan). Registration at that institution is a required condition to practice as a physician.

This is a retrospective study of 1,846 medical records of physicians registered at the Barcelona Medical Council-Association (COMB) who asked for help at the Barcelona Care Programme for Sick Physicians between January 1998 and December 2018. Residents accounted for 18.1% (n=335) of the sample. Information about medical specialties of all residents working in Barcelona was provided by the Registration Unit of the COMB.

Type of referral to the programme can be divided into voluntary vs. non-voluntary. Voluntary referrals only include clear self-referrals to the programme while non-voluntary referrals come after: 1) induced referral (by a colleague or relative); 2) confidential information received by their "Colegio de Médicos"; or, 3) formal complaint to the "Colegio de Médicos" due to malpractice issues being identified.

Clinical and socio-demographic variables

Clinical and socio-demographic variables were obtained from each medical record. Socio-demographic variables were recorded at admission, including medical specialty. Mental health disorders were diagnosed by a psychiatrist during the first 3 initial interviews according to DSM-IV-TR criteria (American Psychiatric Association, 2000). Information about medical specialties of physicians working in Barcelona was provided by the Registration Unit of the COMB.

Ethics

Approval for chart review, data analysis and reporting was obtained from the Vall d'Hebron Hospital University Ethics Committee [PR (AG) 160/2015 _v2]. All physicians sign an informed consent form before being admitted to the programme. Patient anonymity is safeguarded before admission in order to protect confidentiality. Surnames are changed to conceal identity; first names are also changed according to patient preference; and real names are only disclosed with the patient's agreement or if there is an imminent risk to the patient or others.

It was not appropriate to involve patients or the public in the design, or conduct, or reporting, or dissemination plans of this research.

Statistical analyses

Besides descriptive statistics, Chi-square test was used to compare dichotomous variables between groups. Student's t-test was used to compare quantitative variables. Due to low cells sample size, diagnoses were grouped into four main categories (affective, substance use, anxiety, and 'other' mental disorders). Odds ratios with 95% confidence intervals were used to analyse the relationship between binary variables.

MIRs were initially compared to other physicians accessing the programme. As some consultant-grade physicians did not have a MIR specialist title (n=295), an additional analysis was conducted excluding them in order to test if differences between both groups remained without significant changes. Another analysis was conducted comparing younger and senior MIR profiles.

A multivariate logistic regression analysis was executed to identify the final significant variables, emerged as significant in the previous bivariate, when differentiating between MIRs and consultant-grade physicians. All hypothesis tests were two-tailed and conducted with an alpha of 0.05. Statistical analyses were conducted using STATA v.15.

Results

Of all the physicians, including MIRs, admitted to the programme during that period (N=1,846), the majority were women (56.2%), half of them were married or living with a partner (51.4%), 53.5% had children, their mean age was 43.6 (SD=10.9) years, the vast majority self-referred (93.1%), had a regular salary (88.2%), and a third were on a sick leave (33.5%). Differences between consultant-grade physicians and MIRs are summarized in Table 1.

TABLE 1 SHOULD BE AROUND HERE

Prevalence of mental health disorders was different between groups, as substance use disorders were less frequent among MIRs than in consultant-grade physicians while anxiety disorders and adjustment disorders were more prevalent among junior doctors.

Most resident physicians (n=335) were in training to become Family Medicine specialists (31.9%), followed by those of Internal Medicine (5.4%), Paediatrics (4.2%), Psychiatry (3.9%) and Anaesthesiology (3.9%). Family Physician residents were overrepresented when compared both with physicians who sought help at the Galatea Care Programme and with residents registered at the COMB as shown in figure 1.

FIGURE 1 SHOULD BE AROUND HERE

Both MIRs and consultant-grade physician admissions to the programme increased over the years. Significantly, during the first five years (1998-2002) MIR admissions were infrequent (see Figure 2).

FIGURE 2 SHOUD BE AROUND HERE

When performing logistic regression analysis for the whole sample, only younger age, a different status from married or living with a partner, remained statistically significant (see Table 2). These findings remained similar when grouping main diagnoses into two main categories (addictions vs. non-addictive mental disorders). There were no statistically significant differences in socio-demographic, working status and clinical variables between MIRs and consultant-grade physicians after excluding physicians without an official specialist title.

TABLE 2 SHOULD BE AROUND HERE

After focusing on the MIRs' sub-sample, no significant differences between junior and senior MIRs were found (see Table 3).

TABLE 3 SHOULD BE AROUND HERE

Discussion

This study provides a valuable insight into the main trends of resident physicians' admissions to a specialized mental health programme. Data on MIRs admitted to the programme reveals certain socio-demographic and clinical features of those asking for help when suffering from mental disorders. It may also indirectly show the effect of primary prevention interventions for residents and tutors established by the Galatea Foundation over the last decade with the aim of promoting healthier coping strategies and enhancing voluntary help seeking when needed.

A clear upward trend in the number of referrals to the programme was observed in our study during this 20-year period. Galatea Foundation primary prevention interventions for residents and their tutors started in 2009 and may have influenced the progressive increase of MIRs admissions in the last decade. The fact that consultant-grade and resident physicians predominantly ask voluntarily for help from the programme (more than 90% of self-referrals in both cases) may indirectly support the hypothesis of the effectiveness of a programme of this nature (free, easily accessible and highly confidential) to overcome the physicians' reluctance to seek specialized treatment when needed. In a previous study, age at admission progressively declined since the programme started back in 1998 [38] and a similar trend has been reported in the UK's free access, voluntary treatment programme [31].

The most prevalent main diagnoses at admission were adjustment disorders, something that can be related to stressors resident physicians have to face during this transitional life stage [5,6] although they were also the most common disorders among consultant-grade physicians accessing the programme. Asking for help when they feel unable to cope with stressful life events can be interpreted as a healthier coping strategy than avoiding help seeking in those circumstances. It may also potentially reduce the risk of developing maladaptive strategies such as self-medication, alcohol or drug use [40]. Reasons behind this diagnostic prevalence and in the number of younger physicians admitted to specialized treatment programmes such as the Barcelona's or the UK's [31] could be interpreted positively, as being

consequences of better training and more empathetic attitudes to mental health together with a lower stigma and shame among them when admitting they suffer from a mental disorder. However, at the same time, it could also be related to a lowering in the threshold of tolerating distress and coping with the job among new physician generations. Moreover, it cannot be ignored that working conditions of physicians have worsened in recent years [41–43], especially following the 2008 Great Recession budget cuts.

On the other hand, mood and anxiety disorders different from adjustment disorders were also frequent among both resident and consultant-grade physicians. This finding is also in line with what has been reported in other studies [15,31]. It could be hypothesized that mental distress may begin early during the Medical School training and accompanies physicians during their professional career [44,45].

Substance use disorder prevalence in our sample was lower than estimated prevalence among physicians in Spain where around 20% are expected to meet criteria for hazardous drinking and around 10% reported to self-medicate with psychoactive drugs to cope with stress [12,13]. Data on cannabis consumption among younger physicians also points to an under self-reported phenomenon. Two Galatea Foundation studies on the healthy habits of resident physicians also showed higher rates of hazardous drinking and use of self-prescribed sedatives among them [12,13]. The lower prevalence of addictions in our study may point to greater difficulties in asking for help among residents when there is substance misuse, something that should be addressed when developing preventive interventions for them. It could also be due to greater stigma associated with severe mental disorders (including addictions) and to fear of potential consequences of admitting having a substance use problem.

The main methodological weaknesses of this study were: a) its design, as it was a retrospective chart review; b) the diagnoses were not obtained after a structured interview; and, c) the lack of data in terms of personality traits and/or other psychosocial aspects that could enrich the comprehension of the similarities and differences between groups.

As it has been remarked in previous studies by our research group, our findings should be interpreted cautiously as the specific procedures and characteristics of our PHP need to be considered when generalizing our conclusions to other countries [38].

Despite its limitations, the results of this study help underscore that resident physicians in Catalonia, where the Galatea Care Programme is well known, progressively seem more confident to ask for help

when suffering from mental distress. Reasons behind this trend could be more deeply analysed in the future with qualitative studies and the effects of this type of programme intervention may be assessed with longitudinal studies. They should also be analysed by medical educational institutions in order to review their learning and environmental strategies.

Data availability statement

No data are available due to the high confidentiality procedures of the Galatea Care Programme.

Ethics statements

Patient Consent for publication

Not Required.

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Abbreviations

ACGME: Accreditation Council for Graduate Medical Education; COMB: Barcelona Medical Council-Association; MIR: Resident physicians; PAIMM: Galatea Care Programme for Sick Physicians; PHP: Physician Health Programme.

Contributors

MDB and SVC designed the study. SVC, GO, MFM and GN performed the bibliographic search. SV conducted the statistical analysis. MDB wrote the different versions of the manuscript. JAR and EB significantly contributed to the discussion and correction of the final version.

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Competing interests

None declared.

	Resident physicians (n_1= 335) % (n)	Consultant-grade physicians (n_2=1,511) % (n)	Statistics		
			χ^2	*p*	*OR* (95% IC)
SOCIO-DEMOGRAPHIC AND OCCUPATIONAL VARIABLES					
Women	64.2 (215)	54.5 (823)	10.12	0.001	0.67 (0.52 - 0.85)
Self-referrals	94.5 (311)	92.8 (1391)	1	0.315	1.34 (0.8 - 2.24)
In a relationship (yes)	25.7 (86)	57.1 (863)	107.27	<0.001	0.26 (0.2 - 0.34)
Children (yes)	11 (36)	62.9 (933)	289.16	<0.001	13.8 (9.6 - 19.8)
Sick leave (yes)	20.9 (67)	36.4 (519)	27.63	<0.001	2.17 (1.62 - 2.9)
Regular salary (yes)	96.6 (315)	86.3 (1280)	26.28	<0.001	0.22 (0.12 - 0.41)
			t	*p*	*Cohen's d*[1]
Age, mean (SD)	31.1 (5.6)	46.4 (9.7)	38.74	<0.001	1.93
MAIN DIAGNOSIS AT ADMISSION					
			χ^2	*p*	
Substance use disorders	5.7 (19)	16.1 (243)	40.6	<0.001	
Mood disorders	23 (77)	26.7 (404)			
Adjustment disorders	39.1 (131)	33.6 (508)			
Anxiety disorders	18.8 (63)	11.5 (174)			
Personality disorders	3.9 (13)	2.4 (36)			
Schizophrenia and other psychotic disorders	2.1 (7)	2.5 (38)			

Table 1. Socio-demographic, occupational and main diagnosis comparison between resident and consultant-grade physicians

Variables	*B*[1]	*Wald*	*p*	*OR (95% CI)*
Age	0.25	160.8	<0.001	1.29 (1.24 - 1.34)
Gender	0.17	0.79	0.37	1.19 (0.81 - 1.73)
Married/living partner	-0.5	5.73	0.02	0.61 (0.4 - 0.91)
Children	0.33	1.4	0.24	1.39 (0.81 - 2.41)
Regular salary	-1.79	23.58	<0.001	0.17 (0.08- 0.34)
On sick leave	0.29	1.8	0.18	1.34 (0.87 - 2.06)
Mood disorders[1]	-0.11	0.04	0.85	0.9 (0.28 - 2.86)
Adjustment disorders[1]	-0.27	0.28	0.6	0.76 (0.28 - 2.08)
Anxiety disorders[1]	-0.62	1.53	0.22	0.54 (0.2 - 1.44)
Personality disorders[1]	-0.45	0.74	0.39	0.64 (0.23 - 1.79)
Schizophrenia and other psychotic disorders[1]	-0.56	0.66	0.42	0.57 (0.15 - 2.19)
Other disorders[1]	0.86	1	0.32	2.36 (0.44 - 12.64)

[1]The reference condition was "*Substance Use Disorders*".

Table 2. Results of multivariate logistic regression analysis determinig the association of sociodemographic and clinical variables according to professional condition (MIRs or Consultant-grade physicians)

	Junior residents % (n) N=219	Senior residents % (n) N=116	Statistics		
			χ^2	*p*	OR (IC 95%)
SOCIO-DEMOGRAPHIC AND OCCUPATIONAL VARIABLES					
Women	65.3 (143)	62.1 (72)	0.22	0.64	0.87 (0.54 - 1.39)
Self-referrals	94.9 (204)	93.9 (107)	0.02	0.89	1.2 (0.46 - 3.22)
In a relationship (yes)	22.4 (49)	31.9 (37)	3.12	0.08	0.62 (0.37 - 1.02)
Children (yes)	8.8 (19)	15 (17)	2.32	0.13	1.83 (0.91 - 3.67)
Sick leave (yes)	21.5 (45)	19.6 (22)	0.06	0.8	0.89 (0.5 - 1.58)
Regular salary (yes)	95.3 (205)	99.1 (110)	2.11	0.15	5.37 (0.68 - 42.47)
			t	*p*	*Cohen's d*[1]
Age, mean (SD)	30.5 (5.4)	32.3 (5.8)	2.8	<0.01	0.32
MAIN DIAGNOSIS AT ADMISSION					
			χ^2	*p*	
Substance use disorders	5 (11)	6.9 (8)	1.6	0.98	
Mood disorders	23.3 (51)	22.4 (26)			
Adjustment disorders	39.7 (87)	37.9 (44)			
Anxiety disorders	18.3 (40)	19.8 (23)			
Personality disorders	3.7 (8)	4.3 (5)			
Schizophrenia and other psychotic disorders	1.8 (4)	2.6 (3)			

[1] Cohen's *d* was calculated for quantitative variable

Table 3. Comparison of junior vs. senior residents admitted to the Galatea Care Programme for Sick Physicians (PAIMM).

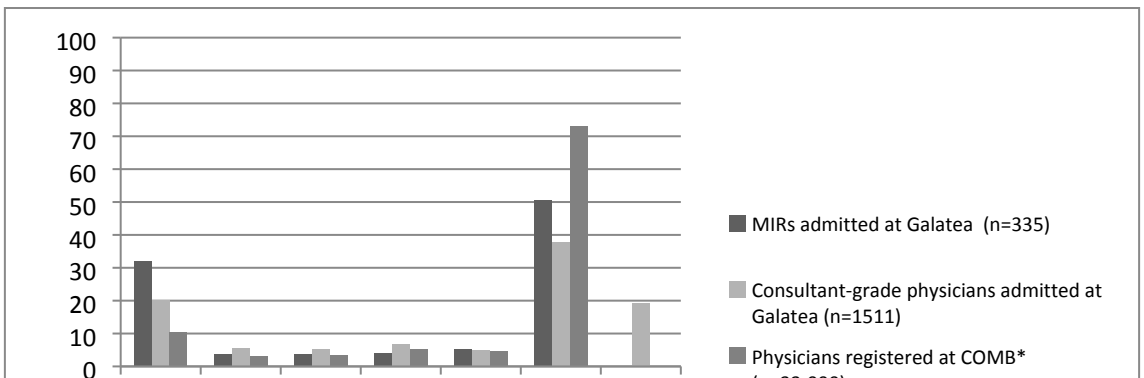

Figure 1. Main medical specialties of resident and consultant-grade physicians admitted at the Galatea Care Programme compared to those registered at the Barcelona Medical Council-Association (COMB).

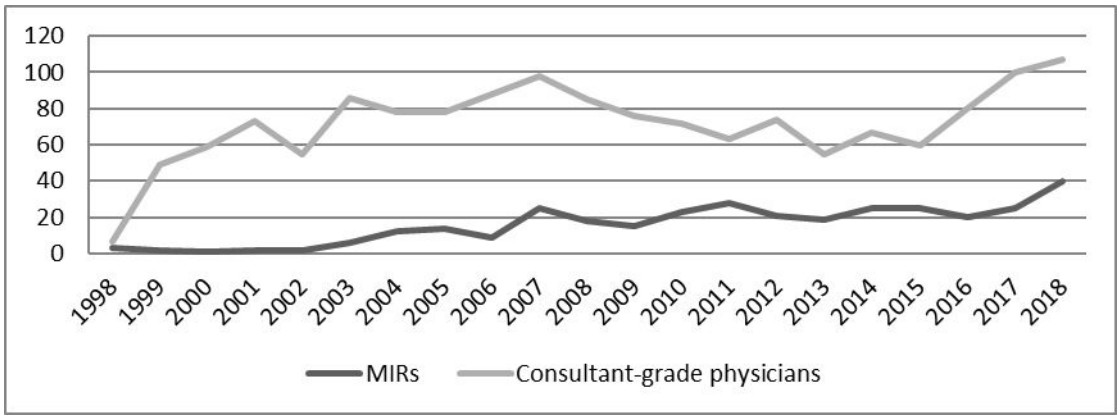

Figure 2. Evolution of resident physicians (N=335) and consultant-grade physicians (n=1,511) admissions at the Galatea Care Programme for Sick Physicians

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	2
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-6
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	6
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7
Bias	9	Describe any efforts to address potential sources of bias	
Study size	10	Explain how the study size was arrived at	
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	7
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	7
		(*b*) Describe any methods used to examine subgroups and interactions	7
		(*c*) Explain how missing data were addressed	
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	
		(*e*) Describe any sensitivity analyses	
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	8
		(b) Give reasons for non-participation at each stage	
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	8
		(b) Indicate number of participants with missing data for each variable of interest	
Outcome data	15*	Report numbers of outcome events or summary measures	8
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	8

		(*b*) Report category boundaries when continuous variables were categorized	
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	9
Discussion			
Key results	18	Summarise key results with reference to study objectives	9
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	10
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	10
Generalisability	21	Discuss the generalisability (external validity) of the study results	10
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	14

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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Characteristics of resident physicians accessing a specialised mental health service in Spain: a retrospective study

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Characteristics of resident physicians accessing a specialised mental health service in Spain: a retrospective study

Running head: Resident physicians accessing a specialised mental health service

María Dolores Braquehais[1,2*], Sebastián Vargas-Cáceres[3], Gemma Nieva[1,2,4], Maria Fernanda Mantilla[5], Germán Ortega[4], Sergi Valero[1,6], José A. Ramos-Quiroga[2,4,7], Eugeni Bruguera[1,2,4,7]

[1]Galatea Care Programme for Sick Health Professionals, Galatea Clinic, Barcelona, Spain

[2]Psychiatry, Mental Health and Addiction Research Group, Vall d'Hebron Institut de Recerca (VHIR), Barcelona, Spain

[3]Mental Health Service, Benito Menni CASM, l'Hospitalet de Llobregat (Barcelona), Spain

[4]Department of Psychiatry, Vall d'Hebron Hospital Universitari, Universitat Autònoma de Barcelona, Barcelona, Spain

[5]CSMIA Gràcia, Barcelona, Spain

[6]Research Center and Memory Clinic, Fundació ACE Institut Català de Neurociències Aplicades - Universitat Internacional de Catalunya (UIC), Barcelona, Spain

[7]CIBER de Salud Mental (CIBERSAM), Instituto de Salud Carlos III, Madrid, Spain

*Correspondence to Dr. M.D. Braquehais, Galatea Care Programme for Sick Health Professionals, Galatea Clinic. Carrer Palafolls, 17, Barcelona 08017, Spain; E-mail: mdbraquehais.paimm@comb.cat

Abstract

Objectives: Little is known about resident physicians being treated at physician health programmes around the world despite the fact that it is a highly demanding training period. This study aims to describe the profiles of resident physicians accessing a specialised mental health service in Spain over a 20-year period and to compare them to consultant-grade physicians.

Design: Retrospective observational study.

Setting: Medical records of the Galatea Care Programme for Sick Physicians.

Participants: 1,846 physicians registered at the Barcelona Medical Council-Association and admitted to the programme from January 1998 to December 2018.

Primary and secondary outcome measures: Number of admissions, socio-demographic and clinical variables, including medical specialty, main diagnosis and need of hospitalisation.

Results: Residents accounted for 18.1% (n=335) of the sample and admissions increased over the years. Most residents (n=311; 94.5%) and consultant-grade physicians (n=1,391; 92.8%) were self-referred. The most common specialty among residents was Family Medicine (n=107; 31.9%), followed by Internal Medicine (n=18; 5.4%), Paediatrics (n=14; 4.2%), Psychiatry (n=13; 3.9%) and Anaesthesiology (n=13; 3.9%). Residents, regardless of year of training, mainly asked for help because of adjustment (n=131; 39.1%), affective (n=77; 23%), anxiety disorders (n=40; 18.8%) and addictions (n=19; 5.7%). There were no significant differences between groups in the main diagnosis and in the variables related to need of hospitalisation. The percentage of residents accessing the programme was higher than in the reference population registered at the Barcelona Medical Council-Association (18.1% vs. 7.6 %; $z=7.2$, $p<0.001$) as was the percentage of Family Medicine residents, (31.9% vs. 19.6%; $z=5.7$, $p<0.001$).

Conclusions: Residents are more likely than consultant-grade physicians to seek help when suffering from mental disorders. Primary prevention actions since the beginning of their training period and having access to well-known highly reliable programmes may partly explain these findings.

Keywords: adult psychiatry; medical education & training; mental health.

Strengths and limitations of this study:

- This study addresses a very important issue, as residency training is a highly stressful and demanding life period for most physicians, and it analyses two decades of data describing patterns in resident physicians' admissions to a specialised mental health programme.
- Clinical and sociodemographic variables of resident and consultant-grade physicians were compared.
- A supplementary analysis was conducted to ascertain the differences between junior and senior resident physicians.
- Data were also compared to the reference population (physicians, including residents, registered at the Barcelona Medical Council-Association).
- Limitations of this study are its retrospective design, the fact that diagnoses were not obtained after a structured interview, and the lack of data in terms of personality traits and/or other psychosocial aspects.

Introduction

Becoming a consultant grade specialist is a critical period in a physician's career. Many countries offer training programmes that vary according to their health systems' demands and organizations [1–3]. In Spain, the nationwide medical residency training (in Spanish *"Médico Interno Residente",* MIR) programme was inspired by the "learn by working" US model. It ranges from 4 to 5 years depending on the specialty [4]. It is conceived as system of learning through supervised and programmed professional practice for the specialist-in-training to acquire progressively the knowledge, skills, techniques and responsibilities needed to become an independent specialist [5]. Each resident is assigned a tutor responsible for his/her supervision during the training period. They meet regularly to mentor and supervise the learning process. There is also a systematic performance evaluation throughout this period to ensure the progressive acquisition of the competencies required to become a specialist.

Despite differences between countries, this highly demanding period has been associated with a worsening in residents' wellbeing and healthy habits as well as with a higher risk of developing mental disorders [6,7]. During this transitional life stage, young physicians are exposed to several stressors including: heavy workload, sleep deprivation, difficult patients, poor learning environments, relocation issues and living away from family and friends, isolation and social problems, limited free time to relax, financial concerns, cultural and minority issues, information overload, and career planning issues [8,9].

Although most residents are able to endure these stressful conditions without a negative impact on their mental health, there is increasing evidence of the presence of distress among some of them during this training period. Some personality traits (neuroticism, perfectionism or obsessive-compulsive traits) and other vulnerability factors, for example, prior personal or familial psychopathology, may increase the risk of suffering from mental disorders under these challenging circumstances [8,9]. Women physicians have been reported to be at a higher risk of developing affective or mental disorders than men [10,11] although these differences are not supported by other studies [6,12]. On the other hand, male residents seem to be more likely than females to have suicidal thoughts [12] and to develop addictive disorders [13–15].

Among medical residents, prevalence of depressive symptoms is estimated to range from 20.9% to 43.2% [16], while 7 to 22% report having suicidal ideation [17,18]. With respect to substance misuse, around 20% of residents may meet criteria for hazardous drinking [19] and 13% self-medicate with legal

drugs to cope with stress [12]. In Spain, 18% of residents are hazardous drinkers [14], and between 8 and 16% self-medicate with psychoactive drugs [13].

Residents may lack support [20] but a main reason may be that they have internal barriers to help-seeking such as concerns about confidentiality [21], "presenteeism" (attendance at work despite ill health)[22], long working hours, and stigma around mental illness [22,23]. The impact of physicians' mental health goes beyond their personal wellbeing and extends to the quality of care provided to patients [21,24,25], increased difficulties in professional relationships, reduced learning ability, worse patient satisfaction and more medical errors [9,26–28]. Characteristics of burnout (poor communication and reduced empathy) run counter to the core principles of patient-centred care [29]. In fact, physicians who maintain healthy lifestyles are more likely to focus on preventive strategies with their patients [30,31].

In its 10-year report, the UK Practitioner Health Programme [32] informed that over the first 14 months of this service, they assisted 297 junior doctors and a much smaller number of self-referred dentists. Overall, 61 doctors were unwell enough to be on sick leave and 5 were suspended or unemployed. Their main complaints were for anxiety, low mood and stress related problems, the majority of which were related to their workplace. The average age of admission to the UK Programme has steadily dropped during the 10-year period and the number of females has increased as well.

Currently, prevention services for medical trainees have been developed in some countries. In the United States, the Accreditation Council for Graduate Medical Education (ACGME) requires that post-medical training programmes make assistance services available for all residents. Practical interventions include an enhanced focus on resident well-being through a range of ACGME activities [33]. Similar programmes can be created and used by residents and faculty such as those developed by the Oregon Health and Science University [34] and by the University of California San Diego (HEAR programme)[35]. In UK, the Trainee Doctors and Dentist Service, hosted by NHS Practitioner Health Programme, is a psycho education and support service which aims to offer a range of interventions to support trainees (e.g., individual face-to-face support, online Cognitive-Behavioural Therapy, mindfulness and the other groups)[32]. Most jurisdictions in Canada have consolidated a number of services under the banner of a provincial physician health programme (PHP) and they have released a descriptive framework in 2016 to define a series of core services and more standardized programmes for resident and physicians [36]. In

Australia, The Royal Australasian College of Physicians Support Programme provides a professional and confidential counselling service to all fellows and trainees run by Converge International, an Australian institution with qualified professionals in mental health [37].

The Galatea Foundation programme for physicians, the Galatea Care Programme for Sick Physicians (Galatea-PAIMM in Catalan, PAIME in Spanish), launched by the Barcelona Medical Council-Association (COMB) and later extended to the rest of Spain, was the first of its nature developed in Europe back in 1998. This foundation has developed several primary prevention activities to promote self-care among residents, such as workshops, e-learning, and clinical sessions, which are an opportunity to share and discuss the causes of stress among resident physicians and how to develop the skills and attitudes to manage them. More than 350 resident physicians have attended these courses to date. The interventions focus not only on the individual but also on the interdisciplinary team where they work [38]. The Galatea Foundation also offers a mental health service for all health professionals working in Catalonia, including physicians, through the Galatea Care Programme for Sick Physicians [39].

However, little is known about resident physicians being treated in specialised Physicians' Health Programmes around the world. This study aims to describe the profile of residents admitted to the Galatea Care Programme during a 20-year period and to compare them to consultant-grade physicians. A supplementary analysis is conducted to ascertain the differences between junior and senior residents. Data are also compared to the reference population (physicians, including residents, registered at the Barcelona Medical Council-Association).

Methods

Participants

The Galatea Care Programme is offered to all physicians registered at Catalan Medical Council-Associations ("Colegios de Médicos" in Spanish, "Col·legis de Metges" in Catalan). Registration at that institution is a required condition to practice as a physician.

This is a retrospective study of 1,846 medical records of physicians registered at the COMB who asked for help at the Galatea Care Programme for Sick Physicians between January 1998 and December 2018. Residents accounted for 18.1% (*n*=335) of the sample. Information about medical specialties of all residents working in Barcelona was provided by the Registration Unit of the COMB. The average of

residents per year at the COMB in the 1998-2018 period was 2,549. . Therefore, resident physicians are approximately 7.6% of all registered doctors (N=33,453). Globally, physicians admitted to the programme (*n*=1,846) represented 5.5% of all physicians accredited by the COMB while residents (*n*=335) were 18.1%.

With regards to resident physician specialty, the average number of residents registered at the COMB to become Family Medicine specialist for the study period was 500 (19.6% of all registered residents). Around 10.3% of all physicians registered at the COMB reported being a Family Practitioner although this information is not essential for registration. The Catalan Department of Health estimates that 21% of physicians working at the Public Health System are Family Medicine doctors.

Type of referral to the Galatea Care Programme can be divided into voluntary vs. non-voluntary. Voluntary referrals only include clear self-referrals to the programme while non-voluntary referrals come after: 1) induced referral (by a colleague or relative); 2) confidential information received by the COMB or, 3) formal complaint to the COMB due to malpractice issues being identified.

Clinical and socio-demographic variables

Clinical and socio-demographic variables were obtained from each medical record. Socio-demographic variables were recorded at admission, including medical specialty. Mental health disorders were diagnosed by a psychiatrist during the first 3 initial interviews according to DSM-IV-TR criteria [40].

Ethics

Approval for chart review, data analysis and reporting was obtained from the Vall d'Hebron Hospital University Ethics Committee [PR (AG) 160/2015 _v2]. All physicians sign an informed consent form before being admitted to the programme. Patient anonymity is safeguarded before admission in order to protect confidentiality. Surnames are changed to conceal identity; first names are also changed according to patient preference; and real names are only disclosed with the patient's agreement or if there is an imminent risk to the patient or others.

Statistical analyses

Besides descriptive statistics, Chi-square test was used to compare dichotomous variables between groups. Student's t-test was used to compare quantitative variables. Due to low cells sample size, diagnoses were grouped into four main categories (affective, substance use, anxiety, and 'other' mental

disorders). Odds ratios with 95% confidence intervals were used to analyse the relationship between binary variables.

Residents were initially compared to other physicians accessing the programme. As some consultant-grade physicians did not have a MIR specialist title (n=295), an additional analysis was conducted excluding them in order to test if differences between both groups remained without significant changes. Another analysis was conducted comparing younger and senior residents' profiles.

In addition, we performed one-sample z-test in order to test differences between resident proportion sample and resident population; *p*-values were calculated for two-tailed comparison.

A multivariate logistic regression analysis was executed to identify the final significant variables, emerged as significant in the previous bivariate, when differentiating between residents and consultant-grade physicians. All hypothesis tests were two-tailed and conducted with an alpha of 0.05. Statistical analyses were conducted using STATA v.15.

Patient and public involvement

There was no patient or public involvement in the design, conduct, reporting, or dissemination plans of this research.

Results

Of all the physicians, including residents, admitted to the programme during that period (N=1,846), the majority were women (*n*=1,038; 56.2%), half of them were married or living with a partner (*n*= 949; 51.4%), most had children (*n*=969; 53.5%), their mean age was 43.6 (SD=10.9) years, the vast majority were self-referred (*n*= 1,702; 93.1%), had a regular salary (*n*=1,595; 88.2%), and a third were on a sick leave (*n*=586; 33.5%). Overall, the most prevalent diagnosis at admission was adjustment disorder (*n*=639; 34.6%), followed by mood disorders (*n*=481; 26.1%), substance use disorders (n=262; 14.2%), anxiety disorders (*n*=237; 12.8%), personality disorders (*n*=49; 2.7%), and schizophrenia and other psychotic disorders (*n*=45; 2.4%). Regarding hospitalisation during the first treatment episode, almost a fifth of the whole sample were admitted at the inpatient unit (n=348; 18.9%). Each hospitalisation lasted a mean of 32.5 (*SD*=22.7) days and more than a third of the sample (*n*=128; 36.8% of those ever

hospitalised and 6.9% of the total) needed to be rehospitalised. Differences between consultant-grade physicians and residents are summarized in Table 1.

	Resident physicians (n_1= 335) % (n)	Consultant-grade physicians (n_2=1,511) % (n)	Statistics		
			χ^2	*p*	*OR* (95% IC)
SOCIO-DEMOGRAPHIC AND OCCUPATIONAL VARIABLES					
Women	64.2 (215)	54.5 (823)	10.12	0.001	0.67 (0.52 - 0.85)
Self-referrals	94.5 (311)	92.8 (1391)	1	0.315	1.34 (0.8 - 2.24)
In a relationship (yes)	25.7 (86)	57.1 (863)	107.27	<0.001	0.26 (0.2 - 0.34)
Children (yes)	11 (36)	62.9 (933)	289.16	<0.001	13.8 (9.6 - 19.8)
Sick leave (yes)	20.9 (67)	36.4 (519)	27.63	<0.001	2.17 (1.62 - 2.9)
Regular salary (yes)	96.6 (315)	86.3 (1280)	26.28	<0.001	0.22 (0.12 - 0.41)
			t	*p*	*Cohen's d*[1]
Age, mean (SD)	31.1 (5.6)	46.4 (9.7)	38.74	<0.001	1.93
MAIN DIAGNOSIS AT ADMISSION					
			χ^2	*p*	
Substance use disorders	5.7 (19)	16.1 (243)	40.6	<0.001	
Mood disorders	23 (77)	26.7 (404)			
Adjustment disorders	39.1 (131)	33.6 (508)			
Anxiety disorders	18.8 (63)	11.5 (174)			
Personality disorders	3.9 (13)	2.4 (36)			
Schizophrenia and other psychotic disorders	2.1 (7)	2.5 (38)			
HOSPITALISATION					
Hospitalised	16.4 (55)	19.4 (293)	1.4	0.237	0.82 (0.6 - 1.12)
Need for rehospitalisation	6.2 (21)	7.1 (107)	0.007	0.934	1.07 (0.6 - 1.94)
			t	*p*	*Cohen's d*[1]
Number of days (first hospitalisation), mean (SD)	35.2 (18.24)	32 (23.42)	0.96	0.34	0.15

[1]Cohen's d are calculated for quantitative variables.

Table 1. Socio-demographic, occupational, main diagnosis and hospitalisation comparison between resident and consultant-grade physicians

The prevalence of mental disorders was different between groups, as substance use disorders were less frequent among residents than in consultant-grade physicians while anxiety disorders and adjustment disorders were more prevalent among junior doctors. No differences between resident and consultant grade physicians were found with regards to variables related to the need of hospitalisation during the first treatment episode.

Residents admitted to the Galatea Care Programme were overrepresented when compared with residents as a percentage of all physicians registered at the COMB (z=7.2, p<0.001). With regards to specialty, the largest proportion of admitted residents were in training to become Family Medicine specialists (*n*=107; 31.9%), followed by those from Internal Medicine (*n*=18; 5.4%), Paediatrics (*n*=14; 4.2%), Psychiatry (*n*=13; 3.9%) and Anaesthesiology (*n*=13; 3.9%). The percentage of residents in Family Medicine was also higher than those of the same specialty registered at the COMB (31.9% vs. 19.6%; z=5.7, p<0.001). Concerning consultant-grade Family physicians admitted at the Galatea Care Programme, these doctors were also disproportionately represented when compared with the reference population registered at the COMB (20.3% vs. 10.3%; z=12.8, p<0.001), see figure 1.

FIGURE 1 SHOULD BE AROUND HERE

Both residents and consultant-grade physician admissions to the programme increased over the years. Significantly, during the first five years (1998-2002) resident admissions were infrequent (see Figure 2).

FIGURE 2 SHOUD BE AROUND HERE

When performing logistic regression analysis for the whole sample, only younger age, a different status from married or living with a partner, remained statistically significant (see Table 2). These findings remained similar when grouping main diagnoses into two main categories (addictions vs. non-addictive mental disorders). There were no statistically significant differences in socio-demographic, working status and clinical variables between residents and consultant-grade physicians after excluding physicians without an official specialist title.

Variables	***B*[1]**	***Wald***	***p***	***OR (95% CI)***
Age	0.25	160.8	<0.001	1.29 (1.24 - 1.34)
Gender	0.17	0.79	0.37	1.19 (0.81 - 1.73)
Married/living partner	-0.5	5.73	0.02	0.61 (0.4 - 0.91)
Children	0.33	1.4	0.24	1.39 (0.81 - 2.41)
Regular salary	-1.79	23.58	<0.001	0.17 (0.08- 0.34)
On sick leave	0.29	1.8	0.18	1.34 (0.87 - 2.06)
Mood disorders[1]	-0.11	0.04	0.85	0.9 (0.28 - 2.86)
Adjustment disorders[1]	-0.27	0.28	0.6	0.76 (0.28 - 2.08)

Anxiety disorders[1]	-0.62	1.53	0.22	0.54 (0.2 - 1.44)
Personality disorders[1]	-0.45	0.74	0.39	0.64 (0.23 - 1.79)
Schizophrenia and other psychotic disorders[1]	-0.56	0.66	0.42	0.57 (0.15 - 2.19)
Other disorders[1]	0.86	1	0.32	2.36 (0.44 - 12.64)

[1]The reference condition was "*Substance Use Disorders*".

Table 2. Results of multivariate logistic regression analysis determining the association of sociodemographic and clinical variables according to professional condition (residents or Consultant-grade physicians)

After focusing on the residents' sub-sample, no significant differences between junior and senior residents were found (see Table 3).

	Junior residents % (n) N=219	**Senior residents % (n) N=116**	**Statistics**		
			χ^2	*p*	**OR (IC 95%)**
SOCIO-DEMOGRAPHIC AND OCCUPATIONAL VARIABLES					
Women	65.3 (143)	62.1 (72)	0.22	0.64	0.87 (0.54 - 1.39)
Self-referrals	94.9 (204)	93.9 (107)	0.02	0.89	1.2 (0.46 - 3.22)
In a relationship (yes)	22.4 (49)	31.9 (37)	3.12	0.08	0.62 (0.37 - 1.02)
Children (yes)	8.8 (19)	15 (17)	2.32	0.13	1.83 (0.91 - 3.67)
Sick leave (yes)	21.5 (45)	19.6 (22)	0.06	0.8	0.89 (0.5 - 1.58)
Regular salary (yes)	95.3 (205)	99.1 (110)	2.11	0.15	5.37 (0.68 - 42.47)
			T	***p***	***Cohen's d*[1]**
Age, mean (SD)	30.5 (5.4)	32.3 (5.8)	2.8	<0.01	0.32
MAIN DIAGNOSIS AT ADMISSION					
			χ^2	*p*	
Substance use disorders	5 (11)	6.9 (8)	1.6	0.98	
Mood disorders	23.3 (51)	22.4 (26)			
Adjustment disorders	39.7 (87)	37.9 (44)			
Anxiety disorders	18.3 (40)	19.8 (23)			
Personality disorders	3.7 (8)	4.3 (5)			
Schizophrenia and other psychotic disorders	1.8 (4)	2.6 (3)			

[1] Cohen's *d* was calculated for quantitative variable

Table 3. Comparison of junior vs. senior residents admitted to the Galatea Care Programme for Sick Physicians (PAIMM)

Discussion

This study provides a valuable insight into the main trends of resident physicians' admissions to a specialised mental health programme. In fact, the percentage of residents among all admitted physicians is clearly higher than in the reference population. Data on residents admitted to the programme also reveal certain socio-demographic and clinical features of those asking for help when suffering from mental disorders. Apart from the fact that the MIR training is a highly demanding learning period, the study findings may also indirectly show the positive effect of primary prevention interventions for residents and tutors established by the Galatea Foundation over the last decade with the aim of promoting healthier coping strategies and enhancing voluntary help seeking when needed.

A clear upward trend in the number of referrals to the programme was observed in our study during this 20-year period. Galatea Foundation primary prevention interventions for residents and their tutors started in 2009 and may have influenced the progressive increase of residents' admissions in the last decade. The fact that consultant-grade and resident physicians predominantly ask voluntarily for help from the programme (more than 90% of self-referrals in both cases) may be interpreted as support for the hypothesis of the effectiveness of a programme of this nature (free, easily accessible and highly confidential) to overcome the physicians' reluctance to seek specialised treatment when needed. In a previous study, age at admission progressively declined since the programme started back in 1998 [39] and a similar trend has been reported in the UK's free access, voluntary treatment programme [32]. The fact that the percentage of residents in the study is higher than in the reference population (all graduated physicians registered at the COMB) may be due to the highly demanding nature of this professional period that increases the risk of developing mental disorders [6,7]. However, it could also be related to their increased confidence in seeking help at the programme when suffering from mental distress and/or indicative of wider societal changes which have made mental health issues less taboo.

Significantly, Family Medicine is the most common specialty among residents and it is also higher than in the reference population in both residents and consultant-grade physicians. Reasons behind this finding need to be explored in the future. However, besides stressors Family Medicine physicians are exposed to compared to other specialists, it could be hypothesized that tutors may play a more effective role in promoting help seeking among them as Family Medicine consultant-grade physicians are also more likely to be admitted to the programme [41].

Gender differences were not significant between groups or when comparing senior and junior residents. However, there is a higher percentage of women admitted to the programme and this may be related to several factors. In recent years, women represent around 65% of all graduated medical students accessing the MIR system. On the other hand, some studies have pointed to a higher risk of women residents presenting mental disorders than men [10,11] but others fail to prove this relationship [6,12]. However, a recent study found that women physicians were more likely to voluntarily seek help in a Physicians' Health Programme than their male counterparts [42]. They also came at a younger age and addictive behaviours were less prevalent than in men.

The most prevalent main diagnoses at admission were adjustment disorders, something that can be related to stressors resident physicians have to face during this transitional life stage [6,7] although they were also the most common disorders among consultant-grade physicians accessing the programme. Asking for help when they feel unable to cope with stressful life events can be interpreted as a healthier coping strategy than avoiding help seeking in those circumstances. It may also potentially reduce the risk of developing maladaptive strategies such as self-medication, alcohol or drug use [43]. Reasons behind this diagnostic prevalence and in the number of younger physicians admitted to specialised treatment programmes such as the Barcelona's or the UK's [32] could be interpreted positively, as being consequences of better training and more empathetic attitudes to mental health together with a lower stigma and shame among them when admitting they suffer from a mental disorder. However, at the same time, it could also be related to a lowering in the threshold of tolerating distress and coping with the job among new physician generations. Moreover, it cannot be ignored that working conditions of physicians have worsened in recent years [41,44,45], especially following the 2008 Great Recession budget cuts.

On the other hand, mood and anxiety disorders different from adjustment disorders were also frequent among both resident and consultant-grade physicians. This finding is also in line with what has been reported in other studies [16,32]. It could be hypothesized that mental distress may begin early during Medical School training and accompanies physicians during their professional career [46,47]. However, in our study, no differences were found between junior and senior residents pointing to similar mental health disorders during that learning period.

Substance use disorder prevalence in our sample was lower than estimated prevalence among physicians in Spain where around 20% are expected to meet criteria for hazardous drinking and around 10% reported to self-medicate with psychoactive drugs to cope with stress [13,14]. Data on cannabis consumption among younger physicians also points to an under self-reported phenomenon. Two Galatea Foundation studies on the healthy habits of resident physicians also showed higher rates of hazardous drinking and use of self-prescribed sedatives among them [13,14]. The lower prevalence of addictions in our study may point to greater difficulties in asking for help among residents when there is substance misuse, something that should be addressed when developing preventive interventions for them. It could also be due to greater stigma associated with severe mental disorders (including addictions) and to fear of potential consequences of admitting having a substance use problem.

The main methodological weaknesses of this study were: a) its design, as it was a retrospective chart review; b) the diagnoses were not obtained after a structured interview; and, c) the lack of data in terms of personality traits and/or other psychosocial aspects that could enrich the comprehension of the similarities and differences between groups.

As it has been remarked in previous studies by our research group, our findings should be interpreted cautiously as the specific procedures and characteristics of our PHP need to be considered when generalizing our conclusions to other countries [39].

Conclusions

Residency training is known to be a highly demanding learning period both from the emotional and professional perspective. The results of this study help underscore that resident physicians progressively seem to feel more confident in seeking help when suffering from mental disorders. The nature of the Galatea's programme (free, easily accessible and highly confidential) may help to overcome the physicians' reluctance to seek specialised treatment when needed. Other reasons behind this trend could be more deeply analysed in the future with qualitative studies, and the mid- to long-term effects of this type of programme intervention may be assessed with longitudinal studies. They should also be analysed by medical educational institutions in order to review their learning and environmental strategies. Implementing preventive programmes focusing on how to identify and cope with mental

distress and on help seeking if there is a mental disorder should be accompanied by offering free, easy access, highly confidential and reliable mental health programmes. Addictive behaviours among residents should also be assessed as they may be an underreported phenomenon that may worsen these physicians' wellbeing and pose risk to practice safety.

Data availability statement

No data are available due to the high confidentiality procedures of the Galatea Care Programme.

Ethics statements

Patient Consent for publication

Not Required.

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Abbreviations

ACGME: Accreditation Council for Graduate Medical Education; COMB: Barcelona Medical Council-Association; MIR: Resident physicians; PAIMM: Galatea Care Programme for Sick Physicians; PHP: Physician Health Programme.

Contributors

MDB and SVC designed the study. SVC, GO, MFM and GN performed the bibliographic search. SV conducted the statistical analysis. MDB, SVC, GN and SV wrote the different versions of the manuscript. JAR and EB significantly contributed to the discussion and correction of the final version.

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Competing interests

None declared.

Figure 1. Main medical specialties of resident and consultant-grade physicians admitted to the Galatea Care Programme compared to those registered at the Barcelona Medical Council-Association (COMB).

Figure 2. Evolution of resident physicians and consultant-grade physicians admissions to the Galatea Care Programme for Sick Physicians.