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Microaggressions, Exhaustion, and Ethical Suffering as well as Impostor Phenomena in Imagiology Nationwide - Preliminary Assessment of their Impact on Health and Well-Being at the Workplace

Microagressões, Exaustão e Sofrimentos Ético e por Fenómeno Impostor na Imagiologia Nacional - Avaliação Preliminar do seu Impacto na Saúde e Bem-Estar no Local de Trabalho

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Abstract

In recent decades, the high prevalence of burnout in medicine, including radiology, has been discussed. However, there is still little data on this problem in Portugal. In addition, phenomena such as impostor syndrome and microaggressions have been increasingly recognized as negative for radiologists' health and well-being.
This innovative study in Portugal investigated the presence of microaggressions, ethical distress and impostor syndrome among Radiologists.
The results were particularly significant in groups working in emergency situations, emphasizing the need for improvements in working conditions and measures to combat these major problems.

Keywords

Burnout; Radiology; Microaggressions; Imposter phenomenon; Health Professionals Portugal.

Resumo

Nas últimas décadas, tem sido discutida a elevada prevalência de exaustão (burnout) na Medicina, incluindo na Imagiologia. No entanto, em Portugal, ainda há poucos dados sobre este problema. Além disso, fenómenos como a síndrome do impostor e as microagressões têm sido cada vez mais reconhecidos como negativos para a saúde e bem-estar dos radiologistas.
Este estudo inovador em Portugal investigou a presença de microagressões, sofrimento ético e por fenómeno impostor entre radiologistas.
Os resultados foram particularmente significativos em grupos que trabalham em situações de urgência, salientando a necessidade de melhorias nas condições de trabalho e medidas para combater esses importantes problemas.

Palavras-chave

Burnout; Radiologia; Microagressões; Fenómeno impostor; Profissionais de Saúde; Portugal.

Introduction

Much has been written in recent years about the high prevalence of burnout in Medicine in general and in Radiology in particular, especially in Anglo-Saxon literature.[1,3,4] However, at a national level, we have little objective data on the impact of this condition,[5] particularly in the field of Radiology. On the other hand, in addition to exhaustion, a lot has been said lately about microaggressions and the impostor phenomenon, which additionally contribute negatively to the health and well-being in the radiologist's workplace.[5,6,7,8,9]
Impostor syndrome or phenomenon is understood as an inner conflict felt by someone, despite all the demonstrated evidence of success and adequacy of their intentions, actions and achievements.[4,10] Microaggressions are understood as comments or attitudes that cause discomfort, sometimes inflicted surreptitiously, covertly or unconsciously.[3,11]
The article thus aims to lift the veil on our national panorama regarding these conditions that impact the quality and well-being in the radiologist's workplace.[11]

Methods

Study Design

A survey was carried out to investigate the relationship between microaggressions, exhaustion, ethical suffering and the impostor phenomenon in Imaging at national level.
The structure of the survey was intended to be easily understood by the subjects who replied and for them to more easily see themselves in situations in the "real world" of everyday practice, hence the incorporation of images with "slogans"; it was also intended to be concise and simple enough and not take too long in responding to avoid discouraging participation.
The survey was conducted using a mixed approach, using social networks and email communication to reach potential participants, using the database of the Portuguese Association of Radiology, Neuroradiology and Nuclear Medicine (Associação Portuguesa de Radiologia, Neurorradiologia e Medicina Nuclear) (APRANEMN).

Participants and Survey Creation

Participants were selected comprehensively across the country to ensure diverse representation. To differentiate

the subjects, four initial questions were presented, capturing essential demographic, professional and work information: Specialty (Radiology, Neuroradiology or Nuclear Medicine), years of professional experience in the specialty, including internship (<10 years; 10-20 years; 21-30 years; >30 years), major practice (Public or Private, with or without emergency care for each option) and participant's district (Tables 1 to 4).

Table 1 – Frequency of subjects regarding years of experience.

Years of professional experience in the specialty, including internship	N	%
<10 years	21	27%
>30 years	10	13%
10-20 years	28	35%
21-30 years	20	25%
Total	79	

Table 2 – Frequency of subjects regarding major practice.

Major practice	N	%
Private, incl. Emergency service	17	22%
Public, incl. Emergency service	46	58%
Private, excl. Emergency service	8	10%
Public, excl. Emergency service (eg.: age limit restriction)	8	10%
Total	79	

Table 3 – Frequency of subjects regarding specialty.

Specialty	N	%
Radiology	73	92%
Nuclear Medicine	2	3%
Neurorradiology	4	5%
Total	79	

Table 4 – Frequency of subjects regarding the district.

District	N	%
Lisboa	21	27%
Azores	2	3%
Porto	22	28%
Viana do Castelo	2	3%
Setúbal	7	9%
Viseu	3	4%
Coimbra	5	6%
Leiria	2	3%
Faro	5	6%
Évora	1	1%
Braga	3	4%
Aveiro	3	4%
Santarém	2	3%
Madeira	1	1%
Total	79	

The second part, related to the central theme of the study, addressed five specific questions, all of them with 4 similar answer possibilities ("Yes, often", "Yes, sometimes", "Rarely" and "Never"), some of which presented a box with illustrative examples of real situations from the daily practice of Radiology (Figures 1 to 5).

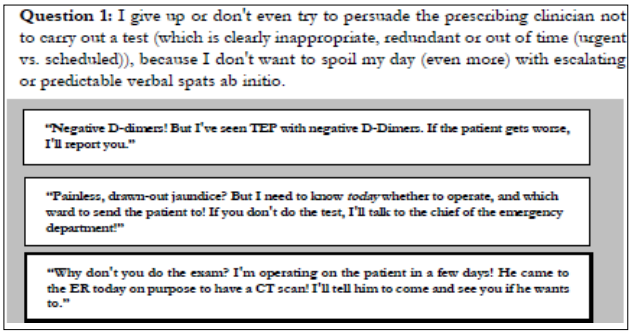

Figure 1 – Question 1 – Microaggressions and (eviction) exhaustion/ conflict situations

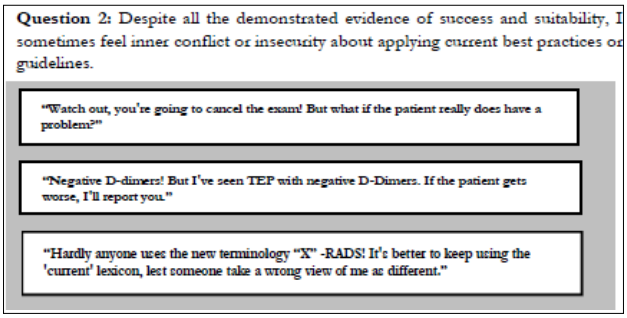

Figure 2 – Question 2 – Impostor Phenomenon

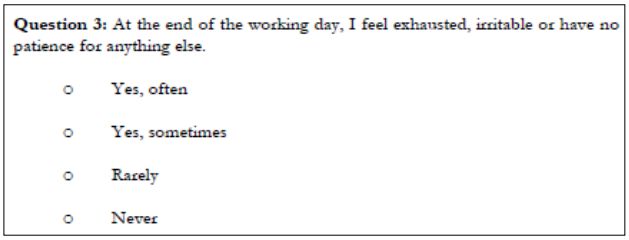

Figure 3 – Question 3 – Exhaustion

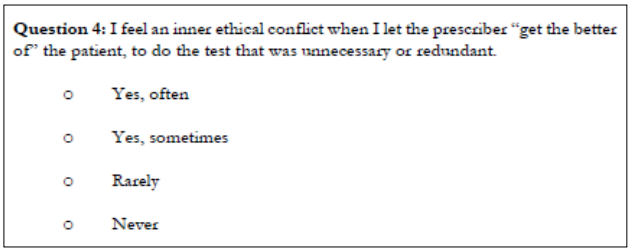

Figure 4 – Question 4 – Ethical suffering

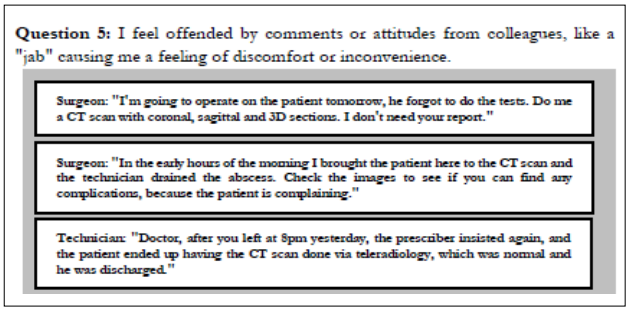

Figure 5 – Question 5 – Microaggressions

Data Collection

The survey adopted an online format, using Google FormsTM (Mountain View, California, USA) as a platform to collect responses, where participants responded anonymously.
Responses were automatically recorded in electronic format and were then exported to Microsoft ExcelTM (Redmond, Washington, USA) for organization and storage.

Statistical analysis of the data was conducted using Jamovi software (Sydney, Australia), an open source statistical analysis tool,[12] including descriptive methods to summarize the characteristics of participants and the results of survey questions, as well as assessment of statistically significant differences among groups.

Data Processing

The answers to each individual question are found in Table 5. As the sample is not homogeneous, certain groups had an insufficient number of subjects to allow statistical analyses with the necessary strength, reason why we chose to carry out transformations of the variables relating to the first part of the survey.

Regarding major practice, we chose to create two new variables based on this datum: local major practice (public vs private) and service (emergency vs non-emergency). The distribution of subjects across the two new categories can be found in Table 6.

On Years of Service, we chose to transform the variable into another one with two subgroups: a) <20 years of experience; b) >20 years of experience, and the distribution of subjects across the two new categories can be seen in Table 7.

Due to the low number of subjects for "non-Radiology" specialties, statistical analysis for this variable was impossible in the present study.

Finally for the District, we created a new variable called "Region", using the NUTS II classification (Nomenclature of Territorial Units for Statistical Purposes) as reference. Due to the fact that the number of subjects per region is still scarce in some of the groups, we grouped the regions according to the following criteria:

- North and Center, including all subjects from the districts belonging to NUTS II North and Center;
- Lisbon and South, including all subjects in the districts belonging to NUTS II AM (Metropolitan Area) Lisbon, Alentejo and Algarve;
- Islands, including all subjects of the districts belonging to NUTS II RA (Autonomous Region) Azores and Madeira.

The distribution of subjects by region can be seen in Table 8. In the case of regions, due to the scarce number of subjects in group 3 and given the impossibility of correctly redistributing these subjects among the two remaining groups without distorting the geographic component, they were excluded from the statistical analyses in which the Region variable was used as an independent variable. In the remaining analyses where this variable was not used, subjects were integrated into the analysis.

Data Transformation

The question variables were then transformed from an ordinal scale to a categorical scale, according to the following rationale: Never = 1 / Rarely = 2 / Sometimes = 3 / Often = 4.

The first analysis carried out was the internal consistency of the scale using Cronbach's α (alpha) procedure.

Kruskal-Wallis test was used to evaluate the difference between the group medians. Values of p <0.05 were considered statistically significant.

Results

The sample consisted of a total of 79 participants.

The internal consistency scale has an alpha of 0.73, a value that is considered "good" for the analysis of internal consistency, that is, the items of the scale are positively correlated with each other.

Regarding local major practice (Public vs. Private), the analysis did not reveal statistically significant differences among the groups for any of the questions.

With regard to the service major practice (Emergency vs. Non-Emergency), statistically significant differences were identified among groups for all questions.

For question 1, the Kruskal-Wallis test resulted in a p-value of 0.025. For question 2, p was 0.003. For question 3 p value was 0.025. For question 4 p was 0.001 and, finally, for question 5 the p value was 0.005.

Concerning professional experience (<20 years vs. >20 years), statistically significant differences were observed among groups for questions 1, 2 and 5, p value being 0.017, 0.033 and 0.003, respectively.

Finally, regarding the "Region" variable, no statistically significant differences were found among groups for any question.

The Kruskal-Wallis test values for these variables are found in table 9, and the number of responses per group after alterations are in table 10.

Table 5 – Frequency and percentage of replies to each question.

	Question 1		Question 2		Question 3		Question 4		Question 5	
	N	%	N	%	N	%	N	%	N	%
Never	11	14%	10	13%	1	1%	4	5%	9	11%
Rarely	17	22%	27	34%	13	16%	19	24%	23	29%
Sometimes	29	37%	27	34%	27	34%	29	37%	24	30%
Often	22	28%	15	19%	38	48%	27	34%	23	29%
Total	79		79		79		79		79	

Table 6 – Distribution of subjects by two new variables created for major practice, namely, Local (Public vs. Private) and Service (Emergency vs. Non-emergency).

Local	N	%	Service	N	%
Private	25	32%	Emergency	63	80%
Public	54	68%	Non-emergency	16	20%
Total	79		Total	79	

Table 7 – Distribution of subjects by two new variables created for professional experience.

Professional Experience	N	%
<20 years	49	62%
>20 years	30	38%
Total	79	

Table 8 – Distribution of subjects by new variable "Region", using NUTS II classification as refence.

Regional Aggregation	N	%
North – Center	40	51%
Lisboa – South	36	46%
Islands	3	4%
Total	79	

Discussion

The purpose of the survey was to evaluate the impact of microaggressions, exhaustion, ethical suffering and impostor phenomenon in the workplace, in Imaging at national level, with responses from the entire spectrum of the Radiology workforce in Portugal, finding statistically significant differences among groups.

Table 9 – Kruskal-Wallis Test regarding Local Practice (Public vs. Private), Service Practice (Emergency vs. Non-emergency), Experience and Region. χ^2 = Square Chi of Kruskal-Wallis test; p = level of significance. <0.05 – statistically significant.

	Questions	χ^2	p
Local Practice (Public vs. Private)	Q1	0.209	0.648
	Q2	1.147	0.284
	Q3	0.427	0.513
	Q4	0.885	0.347
	Q5	2.606	0.106
Service Practice (Emergency vs. Non-Emergency)	Q1	5.00	0.025
	Q2	8.60	0.003
	Q3	5.03	0.025
	Q4	10.41	0.001
	Q5	7.78	0.005
Experience	Q1	5.788	0.017
	Q2	4.546	0.033
	Q3	0.518	0.472
	Q4	1.027	0.311
	Q5	8.839	0.003
Region	Q1	0.557	0.456
	Q2	0.002	0.965
	Q3	0.107	0.744
	Q4	0.046	0.830
	Q5	0.437	0.508

Note: Degrees of freedom = 1 for tests carried out.

Table 10 – Number of replies by groups, regarding Local Practice (Public vs. Private), Service Practice (Emergency vs. Non-emergency), Experience (<20 years vs. >20 years) and Region (North and Center; Lisboa and South; Islands).

Local Practice	Q1	Q2	Q3	Q4	Q5
Public	54	54	54	54	54
Private	25	25	25	25	25
Service Practice	Q1	Q2	Q3	Q4	Q5
Emergency	63	63	63	63	63
Non-emergency	16	16	16	16	16
Experience	Q1	Q2	Q3	Q4	Q5
<20 years	49	49	49	49	49
>20 years	30	30	30	30	30
Region	Q1	Q2	Q3	Q4	Q5
North and Center	40	40	40	40	40
Lisboa and South	36	36	36	36	36
Islands	3	3	3	3	3

The variability of responses in the "emergency" and "non-emergency" groups is outstanding, with statistically significant differences in all questions, that is, the group of people who have an emergency service in their workload report more microaggressions, exhaustion and suffering, compared to those who do not emergency service.

Regarding years of experience, the study showed significant differences among groups in questions 1, 2 and 5 (relating to the impostor phenomenon and microaggressions and (eviction) exhaustion/conflict situations), where major difference was found among responses to question 5 regarding the discomfort or malaise caused by the comments and attitudes of colleagues, with the group with less than 20 years of experience showing higher responses of suffering, compared to the group with more than 20 years of experience. Perhaps this factor can be explained by greater hierarchical respect and more experience in emotional self-control of the second group to handle this type of situations and/or a greater prevalence of anxiety and hetero-aggressiveness or passive aggressiveness in younger generations.

Although, at first glance, it may seem strange, given the national perspective, our study did not demonstrate statistically significant differences in the questions for those who work in Public Hospitals, compared to those who work mainly in the Private Sector. Likewise, there were no differences in responses among the different regions of the country, resulting in a very homogeneous panorama in Radiology at national level.

In this study, the biggest limitation was the small sample, particularly in the Neuroradiology and Nuclear Medicine specialties, as well as in the "Island" region whose statistical analysis was impossible to be made.

Regarding future analyses, we recommend to increase the sample, to guarantee an even greater sample homogeneity, to ensure representation of other specialties, in order to understand whether this is a phenomenon that affects mostly Radiology.

Other more detailed analyses may include the impact of teleworking, the dichotomy of daytime vs. nighttime emergency, as well as the perception of isolated work compared to teamwork.

Additional information can also be collected in order to obtain more variables, particularly about gender and even extend the survey to even more comprehensive and revealing questions.

An analysis after corrective measures and avoidance of these harmful factors that affect the well-being of the radiologist will also be of interest to analyze whether, for example, burnout is capable of mitigating the practice in Emergency or whether additional factors affect the well-being in the workplace.

Conclusion

In this preliminary study, we demonstrated objective data on microaggressions, exhaustion and ethical suffering and due to impostor phenomenon in the daily routine of national radiological practice, within a national scope and in different public and private practices.

The data were positive, with statistical significance, in some groups, particularly those in Emergency service, and in younger generations, which can be factors for analysis and to be taken into consideration in issues such as recruitment, management, hygiene and safety in the workplace of Radiology. Corrective measures to counteract these harmful factors that undermine the well-being are a necessity.

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Additional/Supplementary Material

The table in original Microsoft Excel file derived from the survey obtained via Google Forms is accessible as an online supplement (https://bit.ly/3xLFkWx).

Ethical Disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.

Conflitos de interesse: Os autores declaram não possuir conflitos de interesse.

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Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Protecção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

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