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OPERATIONAL MEDICINE – HOW CAN ITS ATTRACTIVENESS BE IMPROVED AND WHICH MEDICAL SPECIALTIES ARE MOST RELEVANT TO ITS PRACTICE [1]

MEDICINA OPERACIONAL – COMO MELHORAR A ATRATIVIDADE E QUAIS AS ESPECIALIDADES MAIS VOCACIONADAS

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Abstract

Over the last five years, it has become increasingly difficult to "fill" the Specialised Medical Staff. This difficulty is compounded by a worrying trend that shows an increase in the number of Military Physicians (MP) who opt for early separation. Therefore, there is a need for management mechanisms and criteria to address the gaps that have been identified during the implementation of the Military Health System (MHS) reforms. The value of exploring this topic is that it can help explain the current difficulties in the recruitment, management, and retention of MP in the services of the MHS. Thus, this study will use an inductive reasoning methodology, a qualitative research strategy reinforced by quantitative elements, and a case study research design to analyse measures that can improve the attractiveness of Military Medicine. The study findings showed that motivation and organizational commitment are the cornerstone of retaining MP in the Armed Forces. Although the Branches do not agree on which medical specialties are most relevant to the practice of Operational Medicine, this work attempted to identify the specialties that garnered the most consensus. A list of measures is proposed which aim to increase the attractiveness of Military Medicine, thus improving the recruitment, management and retention of MP.

Keywords: Military Medicine, Military Physician, Operational Medicine, Attractiveness, Specialties.

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[1] Article adapted from the individual research paper prepared for the 2018 / 2019 Joint Staff Course. The defence took place in July 2019 at the Military University Institute.

Resumo

Nos últimos cinco anos ficou evidenciada a dificuldade na "alimentação" dos Quados Especiais de Saúde, que a par da crescente e preocupante tendência de "erosão" dos mesmos, fruto da saída precoce de um número considerável de Médicos Militares (MM), determinam a necessidade do estabelecimento de mecanismos e critérios de gestão que permitam mitigar as disfunções referenciadas no decurso do processo de implementação da reforma do Sistema de Saúde Militar (SSM). Esta temática assume especial relevância, na medida em que visa compreender as atuais dificuldades de recrutamento, gestão, assim como a retenção de MM nas estruturas que compõem o SSM. Assim, este estudo centra-se na análise de medidas que contribuam para melhorar a atratividade da Medicina Militar, recorrendo a uma metodologia de raciocínio essencialmente indutivo, assente numa estratégia de investigação qualitativa com reforço quantitativo, substanciada no estudo de caso como desenho de pesquisa. No final concluiu-se que a motivação e o compromisso organizacional são a pedra angular do garante da retenção dos MM nas Forças Armadas. Pese embora a falta de consenso entre Ramos para definir quais as especialidades médicas mais vocacionadas para a Medicina Operacional, procurou-se identificar as especialidades mais consensuais. Como contributo para a melhoria dos processos de recrutamento, gestão e retenção de MM, sugere-se um conjunto de medidas passíveis de melhorar a atratividade da Medicina Militar.

Palavras-chave: *Medicina Militar, Médico Militar, Medicina Operacional, Atratividade, Especialidades.*

1. Introduction

The Military Health System (MHS) reforms were devised and analysed in 2011, with the establishment of a Technical Team through Decision No. 15302/2011 of 27 October (2011). The main goal of this reform was "to optimise, rationalise, and focus the resources allocated to Military Health, in order to improve the system's operational performance and functionality, thereby increasing its efficiency" (Ministry of National Defence, Directorate General for National Defence Resources, 2017, p. 4).

The final step in this reform was the issuance of Decision No. 2943/2014 of 31 January (2014a). The main measures that stemmed from the decision were the merger of the Branch Military Hospitals into the Armed Forces Hospital (HFAR), as well as the establishment of the Military Health Directorate (DIRSAM) in the Armed Forces General Staff (EMGFA).

Over the last five years, it has become increasingly difficult to "fill" the Specialised Medical Staff. This difficulty is compounded by a worrying trend that shows an increase in the number of Military Physicians (MP)[2] who opt for early separation. Therefore, there is a need for management mechanisms and criteria to address the gaps that have been identified during the implementation of the MHS reforms (Armed Forces General Staff, 2017).

As stated in a report by the Directorate General for National Defence Resources (DGRDN)

[2] Over the last seven years, 121 MP have left the ranks, 54 of whom did so through a request for early discharge from the Career Staff (CS) or through a request for special leave (DIRSAM, email, 14 November 2018).

(2017), the most pressing concerns regarding the Human Resources (HR) of the MHS are the "exits from the military, which have increased over recent years", "the lack of applicants when vacancies become available", and "the lack of integrated management and of a joint assessment of needs by the EMGFA and the branches to ensure that resources are allocated as appropriately and efficiently as possible" (p.1).

Underlying the issues that influence the attractiveness of Operational Medicine (OM) is the attractiveness, or lack thereof, of Military Medicine as a whole. For J. Silva (face-to-face interview, February 22, 2019), "attractiveness will have to be generated globally rather than sectorally". J. Mairos (face-to-face interview, 1 March 2019) believes that "right now we are returning to the concept of Military Medicine as a whole so it makes no sense to discuss the attractiveness of OM as if it were an isolated phenomenon". Therefore, the stabilisation of the process to implement the MHS reforms, which began in August 2012, is of vital importance for the fulfilment of the missions of the Armed Forces (AAFF). The military health services are essential to the functioning of the operational component of the MHS because "[...] the core of Military Health is its operational component and its goal is to ensure the physical and psychological wellbeing of military personnel, especially when providing support to forces engaged in operations or campaigns [...]" (Coelho, 2006, pp. 3-4). This makes topic under analysis – "Operational Medicine - How can its attractiveness be improved and which specialties are the most relevant to its practice"– especially relevant because it will help explain the current difficulties in the recruitment, management, and retention of MP in the MHS services, more specifically in the services that comprise the operational component of the MHS.

This study addresses Military Medicine and aims to identify measures to improve its attractiveness.

The research is delimited in terms of time, space, and conceptually (Santos & Lima, 2016, p. 44). In terms of time, the study will cover the period from 2014 onwards (since the restructuring of the MHS). In terms of space, the study will address the MP of the Portuguese AAFF. Conceptually, the study's focus will be on analysing measures to improve the attractiveness of Military Medicine, as well as on determining which medical specialties are most relevant to the practice of OM.

Having proposed and delimited the topic, the General Objective (**GO**) of this study was defined: To analyse measures to improve the attractiveness of Military Medicine. The study's Specific Objectives (**SO**) are:

SO1 – To analyse measures to improve attractiveness and increase the recruitment of MP;

SO2 – To analyse measures to retain MP in the AAFF;

SO3 – To determine which specialties are most relevant to the practice of OM.

The GO will be achieved by answering the following Research Question (RQ): How can the attractiveness of Military Medicine be improved?

2. Theoretical and conceptual framework

This chapter presents the body of concepts that provided a starting point for the study and describes the model of analysis.

2.1. State-of-the-art and key concepts

In order to frame the research problem, this section will describe some of the concepts that guided the research.

2.1.1. Attractiveness

Attractiveness can be described as a quality, condition or state of that which is attractive or pleasant (Portuguese Online Dictionary, 2019). Another related concept is attractiveness rate, which is an indicator for a company's attractiveness to professionals in a competitive market, that is, it measures whether the company is perceived as a good place to work in relation to other companies. Several factors can affect an organization's attractiveness rate, such as the career plan, pay and benefits it offers its employees (Kenoby, 2017).

The ability of organisations to communicate has become increasingly important in an increasingly competitive labour market. An organisation is only attractive if it is recognised. This ability to generate recognition is crucial when it comes to attracting prospective employees since people will be drawn to interesting projects with unique features that will enrich their experience (Gonçalves, 2016).

2.1.2. Specialties

Unlike in the past, today all physicians must select a specialty as this will help them be recognised in the labour market as specialised professionals with a particular skill-set. This paradigm shift has implications for the military since it is not possible for a MP to achieve recognition in the civilian market without having selected a specialty (J. Mairos, op. cit.). Thus, all MP are now required to complete a medical internship, that is, "theoretical and practical training that prepares resident doctors to practice medicine, or to practice medicine in an area of specialisation and obtain the corresponding qualification of specialist" (Decree-Law No. 13/2018 of 26 February 2018, p. 1078).

2.2. Analysis model

The concept map (Table 1) presents the study's conceptual and methodological framework.

Table 1 – Analysis model

General Objective	To analyse measures to improve the attractiveness of Military Medicine.		
Specific Objectives	**Research Question**	How can the attractiveness of Military Medicine be improved	
	Subsidiary Questions	**Concepts**	**Dimensions**
SO1 To analyse measures to improve attractiveness and increase the recruitment of MP	**SQ1** What measures can be taken to improve attractiveness and increase the recruitment of MP?	Attractiveness	Recruitment
SO2 To analyse measures to retain MP in the AAFF	**SQ1** What measures can be taken to retain MP in the AAFF?	Attractiveness	Management
			Retention
SO3 To determine which sprecialties are most relevant to the practice of OM	**SQ3** Which specialties are most relevant to the practice of OM?	Specialties	Hospital
			Occupational
			Operational

3. Methodology and method

This section presents the research approach, the research strategy and the research design.

3.1. Methodology

This study uses an essentially inductive reasoning methodology, a qualitative research strategy reinforced by quantitative elements, as this will increase the "robustness of the qualitative results" (Santos & Lima, 2016, p. 33), and a case study research design, as advised in the literature (Santos & Lima, 2016) recommended by the Military University Institute (IUM).

The methodological approach was developed in three phases.

The exploratory phase consisted of a literature review and exploratory interviews. The collected data provided a conceptual framework for the study and helped define the research problem and research objectives, leading to the elaboration of the analysis model.

The analytical phase consisted of data collection and analysis and provided answers to the research questions. This involved identifying an initial list of measures in several reports. The measures were examined by an expert panel, who reviewed them during the semi-structured interviews. The validated measures and any other initiatives identified in the semi-structured interviews were compiled into a list of consolidated measures. To assess the impact and prioritise the implementation of the measures, the list was then reviewed by a broad sample of MP through a questionnaire survey. This resulted in a consolidated list of measures that can improve the attractiveness of Military Medicine.

Finally, having analysed and validated the the results, the conclusive phase consisted of describing the study's findings and contribution to knowledge, listing the practical implications, recommendations and research limitations, and making suggestions for future studies.

3.2. Method

This section describes the study sample, the research procedure, the data collection instruments and data processing techniques.

3.2.1. Participants and procedures

Participants. The study sample consisted of experts with relevant knowledge who hold positions in the MHS, whose experience and expertise provided a deeper understanding of the issue under study and helped identify and analyse measures that can be taken to improve the attractiveness of OM, as well as to determine which specialties are the most relevant to its practice (Table 2).

Table 2 – Expert panel

Code	Interviewees	Role	Branch	Data
I1	Rear Admiral Nelson Santos	Chairman of the Navy Medical Review Board (Former Military Health Director of the EMGFA)	Navy	20Feb19
I2	Rear Admiral Jesus Silva	Military Health Director of the EMGFA and the Portuguese representativve to COMEDS	EMGFA	22Feb19
I3	Brigadier General Canas Mendes	Director of Army Health	Army	06Mar19
I4	Commodore Bronze de Carvalho	Director of Army Health	Navy	26Feb19
I5	Brigadier General Regina Mateus	HFAR Director	EMGFA	25Feb19
I6	Colonel João Mairos	Deputy Director of Air Force Health	Air Force	01Mar19

In addition to the participants listed in Table 2, the study sample included 74 MP, or 28% of the MP in the CS, all of whom are on active duty, in the active duty reserves, or serving as residents (n = 264) (further details are provided in Annex A). The sample includes participants from all three branches (Navy = 30%; Army = 55%; Air Force = 15%), most of whom have a First Lieutenant/Captain rank (n = 33 ≅ 45%) and are specialists in their field (n = 42 ≅ 57%) (Table 3).

Table 3 – Descriptive analysis of the sample

		Frequency	%
Branch	Navy	22	30%
	Army	41	55%
	Air Force	11	15%
Rank	Captain / Colonel	3	4%
	Commander / Lieutenant Colonel	7	9%
	Lieutenant Commander / Major	22	30%
	Lieutenant / Captain	33	45%
	Lieutenant Junior Grade / First Lieutenant / Lieutenant	9	12%
Career grade	Resident	28	38%
	Specialist	42	57%
	Consultant	4	5%

Procedures. Semi-structured interviews were conducted with an expert panel (Table 2). In the second phase, which took place between 10 and 20 March, a questionnaire was delivered to a broader sample of MP (Table 3).

3.2.2. Data collection instruments

A semi-structured interview scrip consisting of 11 questions was elaborated and a three-part questionnaire was prepared. The first section of the questionnaire collected demographic data; the second consisted of two questions and served to assess attractiveness; the third served to identify the specialties.

3.2.3. Data processing techniques

Once the questionnaire responses were received, the data were transferred to Excel® sheets (this software was also used to prepare the explanatory tables).

4. Data presentation and discussion of results

This chapter examines measures that can be used to improve attractiveness and increase the recruitment and retention of MP by the AAFF, and identifies which specialties are most relevant to the practice of OM.

4.1. Measures that can be taken to improve attractiveness and increase the recruitment of MP

The difficulties in recruiting MP are not new. As early as 1975, the AAFF recognised the need to attract young people to the Military Medical Career (MMC) by "eliminating or reducing the most common reasons for their refusal to join by offering financial incentives, stability, unrivalled technical and professional development, the option to separate, and a defined career structure" (Gois, 1975 cited in Branco, 2018, p. 19). Today, the aspects that are most likely to motivate young people to become MP are career stability (C. Mendes, face-to-face interview, 6 March 2019), access to a medical specialty (J. Silva, op. cit.; B. Carvalho, face-to-face interview, 26 February 2019), and the adventurous and humanitarian aspects of medicine (N. Santos, face-to-face interview, 20 February 2019). These motivations should be explored by implementing measures that ensure applicants' initial expectations are met.

Until 1998, the recruitment of MP into the SMS of the AAFF branches was mainly done by admitting licensed physicians (doctors with a specialty) through ordinary and extraordinary tenders. It was only from 1998 onwards that the AAFF began recruiting MP through Military Higher Education Establishments (EESPUM) (J. Mairos, op. cit.).

Thus, the review of the Status of the Armed Forces Military Personnel (EMFAR) approved by Decree-Law No. 90/2015 of 29 May (2015) provided a new framework for the recruitment of MP into the SMS of the three branches of the AAFF. Under this framework, the specialised staff could be "filled" in two ways, as defined in Art. 202 – Admission to classes (Navy), Art. 215 – Admission to arms and services (Army) and Art. 221 - Admission to specialties (Air Force):

– Civilians or military personnel holding a Master's degree in Medicine may join the SMS through a tendering procedure. Tenders are held upon proposal of the Council of Chiefs of Staff (CCEM) and regulated by an Ordinance issued by the government official responsible for national defence;

– Student cadets who complete a Master's programme at the Naval School (Navy), the Military Academy (Army) or the Air Force Academy may join the SMS when a Decision is issued by the Ministry of National Defence (MDN), upon proposal of the CCEM.

"Filling" the SMS has proved increasingly difficult over recent years. This low attractiveness for potential candidates has rendered the recruitment process through ordinary and / or extraordinary tender ineffective. Only nine MP were recruited by the Navy[3] (DIRSAM, email, 14 November 2018) and three by the Army[4] (Human Resources Division of the Army General Staff, email, 15 February 2019) as a result of the latest calls for applicants to the SMS/Medical Staff. Over the last five years, the Air Force attempted to recruit applicants through the Special Contract System, without much success. This was due to the fact that, even though the "sole" requirement for admission was to be qualified to practice general medicine (without a specialty), the applicants would not be entering the SMS/Medical Staff and thus would not have access to a medical specialty residency, which is only available to physicians in the CS of the AAFF (Air Force Recruitment Centre, email, 27 March 2019).

One of the measures adopted by the Ministry to counter the "erosion" of the SMS was to reauthorise the admission of MP through the EESPUM[5]. This remains the most attractive recruitment pathway partly due to the fact that the admission grades are still lower than those required by a medical university (N. Santos, op. cit.; J. Silva, op. cit.; B. Carvalho, op. cit.; R. Mateus, face-to-face interview, 25 February 2019). Another factor is that applicants are spared the expenses of a medical degree (C. Mendes, op. cit.).

4.1.1. List of initial measures

A list of measures that can improve attractiveness and increase the recruitment of MP was drawn from the DGRDN report (2017, pp. 57-59). These measures are presented in Table 4.

Table 4 – Measures to improve attractiveness and increase the recruitment of MP

Measures
Implementing different pathways of admission according to their impact on the core areas of Military Health[6]
Updating the instruments for carrying out tenders
Centralising the recruitment processes
Marketing measures

These measures were reviewed by the expert panel. The findings were measured on the scale presented in Table 5.

[3] In 2006 (two general practitioners + two specialist doctors), 2008 (one specialist doctor) and 2017 (four general practitioners) (DIRSAM, op. cit.).

[4] Seven vacancies opened in 2017, only three of which were filled (Human Resources Division of the Army General Staff, email, op. cit.)

[5] No vacancies were opened for candidates with master's degrees in medicine from an EESPUM between 2013 and 2017.

[6] This measure was implemented in 2017, when the Ministry reauthorized admissions through the EESPUM. It was included in this study due to its relevance in determining the different types of recruitment.

Table 5 – Measure rating scale

Degree of relative importance of the measure	
Degree	**Qualitative assessment**
4	Essential
3	Very important
2	Important
1	Nor important
D	Disagrees with the measure

Table 6 shows that all measures[7] generally obtained a degree of relative importance of four and three, which correspond to the qualitative assessments "Essential" and "Very important". Thus, all measures were validated by the experts and will be assessed by a broader sample of MP.

Table 6 – Measure validation by the expert panel

Code	Measures	E1	E2	E3	E4	E5	E6	Degree of importance %				
								D	1	2	3	4
Rec1	Implementing different pathways of admission according to their impact on the core areas of Military Health	3	3	4	4	3	2	0.00	0.00	16.67	50.00	33.33
Rec2	Updating the instruments for carrying out tenders	1	3	4	4	3	3	0.00	16.67	0.00	50.00	33.33
Rec3	Centralising the recruitment processes	2	2	4	4	4	2	0.00	0.00	50.00	0.00	50.00
Rec4	Marketing measures	1	3	3	2	4	3	0.00	16.67	16.67	50.00	16.67

4.1.2. List of consolidated measures

The interviews to the expert panel served to identify new measures. As stated by N. Santos (op. cit.) and J. Silva (op. cit.), one possible measure is "to hold an extraordinary tender to recruit specialist doctors into the rank of First Lieutenant/Captain [...]"; B. Carvalho (op. cit.) and R. Mateus (op. cit.) feel that "candidates should be informed of the group of specialties that they will be able to choose at the time of application [...]"; for C. Mendes (op. cit.) and J. Mairos (op. cit.), an important measure would be for "the HFAR to open the general training component of medical internships to civilian doctors [...]"; another suggestion is to "raise awareness about Military Medicine in medical universities" (R. Mateus, op. cit.).

Once the above measures[8] were consolidated, a broad sample of MP was asked to rate them according to priority using the scale in Table 7.

[7] Measures to improve recruitment (Rec1, Rec2, Rec3, Rec4).
[8] Consolidated measures to improve recruitment (CMRec1 … CMRec8).

Table 7 – Measure priority scale

Degree of relative importance of the measure	
Degree	**Qualitative assessment**
4	Essential
3	Very important
2	Important
1	Nor important

Table 8 shows that only CMRec5 obtained a relative importance of one, which corresponds to the qualitative assessment "Not important". Measures CMRec1, CMRec2, CMRec3, CMRec4 and CMRec7 obtained a relative importance of three, which corresponds to the qualitative assessment "Very important". Measures CMRec1, CMRec2, CMRec3, CMRec4 and CMRec7 obtained a relative importance of three, which corresponds to the qualitative assessment "Very important".

Table 8 – Measures to improve recruitment rated by priority

Code	Measures	Degree of importance %			
		1	2	3	4
MCRec1	Implementing different pathways of admission according to their impact on the core areas of Military Health	17.57	29.73	36.49	16.22
MCRec2	Updating the instruments for carrying out tenders	13.51	31.08	35.14	20.27
MCRec3	Centralising the recruitment processes	27.03	21.62	28.38	22.97
MCRec4	Implementing marketing measures	16.22	22.97	31.08	29.73
MCRec5	Authorizing the admission of specialist doctors to the rank of 1Lieut / Cap through extraordinary tender	37.84	21.62	16.22	24.32
MCRec6	Informing candidates of the group of specialties that they will be able to choose at the time of application	1.35	6.76	22.97	68.92
MCRec7	Enabling the HFAR to open the general training component of medical internship to civilian doctors	25.68	25.68	28.38	20.27
MCRec8	Raising awareness about Military Medicine in medical universities	6.76	20.27	35.14	37.84

4.1.3. Brief overview and answer to SQ1

The need to attract young people to the MMC has been recognised since 1975, and this shortage of MP is still a problem today. The aspects most likely to motivate young people to become MP are career stability, access to a medical specialty, and the adventurous and humanitarian aspects of medicine, motivations which should not be overlooked. Thus, there is a need to implement a set of measures that address applicants' initial expectations.

The above analysis provides an answer to SQ1, "What measures can be taken to improve attractiveness and increase the recruitment of MP?" The data collected made it possible to identify a set of measures to improve attractiveness and increase the recruitment of MP, which are listed by order of priority in Table 9.

Table 9 – Measures to improve attractiveness and increase the recruitment of MP

Dimension	Measures	Priority
Recruitment	Informing candidates of the group of specialties that they will be able to choose at the time of application	4
	Raising awareness about Military Medicine in medical universities	4
	Implementing different pathways of admission according to their impact on the core areas of Military Health	3
	Updating the instruments for carrying out tenders	3
	Centralising the recruitment processes	3
	Implementing marketing measures	3
	Enabling the HFAR to open the general training component of medical internship to civilian doctors	3
	Authorizing the admission of specialist doctors to the rank of 1Lieut/Cap through extraordinary tender	1

4.2. Measures to improve the retention of MP in the AAFF

As the military health paradigm shifted to an articulated model, there was a need to manage, in a joint, consensual and harmonious manner, how the HR of each branch would be distributed by the health care services that integrate the reformed MHS, which is currently undergoing a complex stabilisation process in which the still-expanding HFAR is naturally the main "consumer" of HR with clinical qualifications, that is, doctors with a hospital specialty. The difficulties in the joint management of HR by the branches stem from the heterogeneity of organizational cultures, management criteria and specific needs of each branch (both operational and in terms of career progression). The different interpretations regarding the attributions, composition and scope of clinical activity of the health services that integrate the operational and assistance component of the MHS have led to problems in the allocation of highly specialised assets. Naturally, this has had negative repercussions on the career progression of healthcare professionals, and especially on the provision of health care to the users of MHS (Armed Forces General Staff, 2017).

On 18 June 2015, the Management Guidelines for Military Health Personnel (NOGPSM) were approved by deliberation of the CCEM. Despite recognising that all military health personnel belong to the three branches of the AAFF, these guidelines also express the need to manage these HR in a way that meets the needs, not only of their respective military health services, but also of the EMGFA (and more specifically those of the HFAR) (Council of Chiefs of Staff, 2015). Over the past five years, there have been attempts to involve the DIRSAM in the management of the MP assigned to the HFAR, in coordination with the branches through the Military Health Advisory Committee[9]. As the next subchapter will show, the management of these HR has a direct impact on the satisfaction and consequently on the retention of MP.

[9] Military advisory body on military health, whose mission is to issue opinions to support the Director of DIRSAM, the Chief of Staff of the Armed Forces (CEMGFA) and the CCEM, within the scope of each body's attributions (Decree-Law No. 184/2014 of 29 December 2014).

4.2.1. Reasons for MP's turnover intentions

Organizations invest considerably sums in training their employees, as such, turnover is one of the greatest organizational problems today. Turnover can be defined as the termination of the "employment contract and the psychological contract between an employee and their organization" (Mendes A. M., 2014, p. 7). It can be involuntary, when the decision to terminate the contract comes from the organization, or voluntary, when the decision to leave comes from the employee. The reasons that drive an employee to leave their organization range from lack of satisfaction with the work performed or with the work environment (or with both) to more attractive job opportunities outside the organization (Chiavenato, 1999, p.70). For Tett and Meyer (1993), turnover intentions are manifested when an employee makes a conscious and deliberate choice to leave the organization (p.262).

A study by Braga (2018, pp. 24-26) found several reasons that can be associated with turnover intentions, as shown in Table 10.

Table 10 – Reasons for MP turnover intentions

Measures
Dissatisfaction with the working conditions
Dissatisfaction with salary
Disappointment with the job opportunities within the organization, which leads to reduced self-fulfilment at work
Disagreement with the type of feedback received
Working in an environment of perceived lack of cooperation among peers, where the group is not involved in the decision-making process
Perceived monotony of the (technical) work performed
Feeling that one's know-how / skill-set is underutilised
Lack of alternative / complementary forms of remuneration
Lack of career definition between the Units and the HFAR, that is, lack of definition between operational and hospital careers
Lack of a horizontal career path
Difficulty reducing working hours in the military and completing them in a civilian environment (in an "partner" institution)
Weak or poorly consolidated identification with the values, mission and purpose of the military context / culture in general, and with the provision of military health care in particular.
The work performed often does not meet the initial expectations
The way assignments / deployments are distributed is often seen as inconsistent
The formalisation of policies and procedures and the definition of roles is usually perceived as ambiguous and unclear
Organizational support and organizational justice are regularly perceived as unsatisfactory
The way military rewards and assessment tools are managed is repeatedly described as inadequate and incapable of reflecting the vast range of tasks / functions / missions carried out by the officers they assess

Source: Adapted from Braga (2018).

These motives[10] were assessed by the expert panel. The findings were measured on the scale presented in Table 5.

[10] Reasons (R1…R17).

Table 11 shows that reasons R12, R14, R15 and R16 generally obtained a relative importance of one, which corresponds to the qualitative assessment "Not important", and were therefore not validated. The remaining reasons were validated by the experts and can be used to identify measures that can mitigate turnover intentions and thus improve MP retention.

Table 11 – Expert validation of the reasons for MP turnover intentions

Code	Measures	E1	E2	E3	E4	E5	E6	Degree of importance %				
								D	1	2	3	4
R1	Dissatisfaction with the working conditions	4	3	2	4	3	2	0.00	0.00	16.67	33.33	50.00
R2	Dissatisfaction with the salary	4	3	2	4	4	4	0.00	0.00	16.67	16.67	66.67
R3	Disappointment with the job opportunitieswithin the organization, which leads to reduced self-fulfilment at work	3	3	4	4	3	4	0.00	0.00	50.00	50.00	50.00
R4	Disagreement with the type of feedback received	2	1	2	3	4	2	0.00	16.67	50.00	16.67	16.67
R5	Working in an environment of perceived lack of cooperation among peers, where the group is not involved in the decision making progress	2	1	1	4	3	3	0.00	33.33	16.67	33.33	16.67
R6	Perceived monotony of the (technical) work performed	2	1	3	D	3	1	16.67	33.33	16.67	33.33	0.00
R7	Feeling that one's know-how / skill-set is underutilised	3	3	3	4	3	3	0.00	0.00	0.00	66.67	33.33
R8	Lack of alternative / complementary forms of remuneration	4	1	2	4	4	2	0.00	16.67	33.33	0.00	50.00
R9	Lack of career definition between the Units and the HFAR, that is, lack of definition betweenoperational and hospital careers	3	3	2	4	D	2	16.67	0.00	33.33	33.33	16.67
R10	Lack of horizontal career path	1	2	2	D	1	3	16.67	33.33	33.33	16.67	0.00
R11	Difficulty reducing working hours in the military and completing them in a civilian environment (in an "partner" institution)	3	1	2	D	4	2	16.67	16.67	33.33	16.67	16.67
R12	Weak or poorly consolidation identification with the values, mission and purpose of the military context / culture in general, and with the provision of military health care in particular	3	1	1	4	4	1	0.00	50.00	0.00	16.67	33.33

R13	The work performed often does not meet the initial expectations	3	2	3	4	4	3	0.00	0.00	16.67	50.00	33.33
R14	The way assignments / deployments are distributed is often seen as inconsistent	3	3	1	D	1	1	16.67	50.00	0.00	33.33	0.00
R15	The formalisation of policies and procedures and the definition of roles is usually perceived as ambiguous and unclear	2	1	2	4	1	1	0.00	50.00	33.33	0.00	16.67
R16	Organizational support and organizational justice are regularly perceived as unsatisfactory	3	1	1	4	4	1	0.00	50.00	0.00	16.67	33.33
R17	The way military rewards and assessment tools are managed is repeatedly described as inadequate and incapable of reflecting the vast range of tasks / functions / missions carried out by the officers they assess	3	1	3	4	1	3	0.00	33.33	0.00	50.00	16.67

Therefore, to mitigate R1, measures should be implemented to improve working conditions. In order to adress R4, the mechanisms to provide feedback on job performance should be improved. As for R5, forums (both formal and informal) should be created to encourage service members to communicate with their supervisors. With regards to R7, HR management can be improved by taking full advantage of MP's know-how / skill-set (the right person for the right job). The measures to address the remaining reasons are listed in the next subchapter.

A study by Carvalho (2016, p. 19) identifies the reasons cited by MP for why OM is incompatible with a hospital career: (i) It is not an independent specialty but a set of expertise which are not recognised by the Portuguese Medical Association; (ii) It keeps physicians from enhancing their technical skills by choosing a specialty; (iii) It is not valued in the civilian world. The above reasons shows that there is a need to identify measures that mitigate this incompatibility. These measures will be presented in the following subchapter.

4.2.2. Retaining MP

The concepts of motivation and organizational commitment directly relate to an organization's ability to retain its employees. Chiavenato (2006) defines motivation as "everything that drives a person to act a certain way or that leads to a specific behaviour"; it is intrinsic to the individual but can also be influenced by external stimuli in that person's environment (p. 107). People work for an organization because it provides them with certain incentives, such as "wages, goals and targets, job satisfaction, satisfaction with the organization, the need for personal fulfillment at work". Therefore, it is crucial to create

reward systems capable of "attracting, retaining, and motivating employees" (Chiavenato, 1999, pp. 216-217). Organizational commitment can be defined as the psychological bond between employee and employer (Allen & Meyer, 1996).

Feijoo (2018, December) considers the concept of engagement as even more important than that of motivation. While motivation concerns the level of satisfaction with performing a given activity, engagement encompasses motivation and goes beyond it since it refers to what can be done to improve the organization. Therefore, engagement is the sum of an employee's competence and motivation, and improving employee engagement is a managerial responsibility.

Luísa Oliveira (November 2018), Deputy Director of HR for EDP Distribuição, states that, in order to retain talent, it is essential to create an organizational climate and culture, something that can only be done by surveying and monitoring employee satisfaction rates, both with their jobs and with the company.

A list of measures to improve MP retention was drawn from the DGRDN report (2017, pp. 49-59), which are listed in Table 12.

Table 12 – Initial measures to improve MP retention

Measures	
Across the MHS	Implementing an integrated management model
	Regulating the Specialised Health Staff
	Providing career stability to the HFAR staff
Career-specific	"Reviewing" the rank of admission
	Providing salary supplementation
	More flexible working arrangements
	Increasing complementarity with the NHS
	Investing in training
	Ensuring MP can obtain a consultant degree while serving in the military
Other measures	Allowing doctors in the reserves to perform active duty service
	Establishing partnerships with higher education institutions

These measures[11] were assessed by the panel of experts, who rated them according to the scale in Table 5.

Table 13 shows that only the Rt7 measure generally obtained a relative importance of one, which corresponds to the qualitative assessment "Not important", and was therefore not validated. The remaining measures generally obtained a relative importance between two and four, which correspond to qualitative assessments that range from "Important" to "Essential". Thus, all remaining measures were validated by the experts and will be assessed by a broader sample of MP.

[11] Retention measures (Rt1…Rt11).

Table 13 – Expert validation of retention measures

Code	Measures	E1	E2	E3	E4	E5	E6	Degree of importance %				
								D	1	2	3	4
Rt1	Implementing an integrated management model	4	4	1	4	4	1	0.00	33.33	0.00	0.00	66.67
Rt2	Regulamentar os Quadros Regulating the Specialised Health Staff	4	3	1	4	4	3	0.00	16.67	0.00	33.33	50.00
Rt3	Providing career stability to the HFAR staff	2	3	2	4	3	3	0.00	0.00	33.33	50.00	16.67
Rt4	"Reviewing" the rank of admission	4	4	2	4	4	3	0.00	0.00	16.67	16.67	66.67
Rt5	Providing salary supplementation	4	3	3	4	4	2	0.00	0.00	16.67	33.33	50.00
Rt6	Introducing more flexible working arrangements	2	2	3	4	4	3	0.00	0.00	33.33	33.33	33.33
Rt7	Increasing complementarity with the NHS	3	2	1	4	N/C	1	16.67	33.33	16.67	16.67	16.67
Rt8	Investing in training	4	3	4	4	4	4	0.00	0.00	0.00	16.67	83.33
Rt9	Ensuring MP can obtain a consultant degree while serving in the military	1	1	4	4	4	4	0.00	33.33	0.00	0.00	66.67
Rt10	Allowing doctors in the reserves to perform active duty service	N/C	3	3	4	4	1	16.67	16.67	0.00	33.33	33.33
Rt11	Establishing partnerships with higher education institutions	3	3	2	4	4	4	0.00	0.00	16.67	33.33	50.00

4.2.3. List of consolidated measures

The interviews with experts served to identify new measures.

For J. Silva (op. cit.), B. Carvalho (op. cit.) and R. Mateus (op. cit.) one of the measures should involve "centralising career management at DIRSAM […]", C. Mendes (op. cit.) and R. Mateus (op. cit.) argue for "creating a 4th Branch […]", J. Silva (op. cit.) states that there is a need to "allow MP to choose a horizontal career path […]", while other possible measures may involve "creating a Military Medicine Competency accredited by the Portuguese Medical Association […]" (C. Mendes, op. cit.; B. Carvalho, op. cit.), "ensuring that the HFAR's core services have an impeccable reputation as a reference in healthcare at the national level […]" (C. Mendes, op. cit.), "increasing the number of vacancies for the OF5 rank[…]" and "increasing the number of Medical General Officers in the SMS" (J. Mairos, op. cit.).

Once the measures[12] listed above were consolidated, they were organized according to priority by a broad sample of MP, who rated them according to the scale in Table 7.

As shown in Table 14, measures CMR4 and CMR9 generally obtained a relative importance

[12] Consolidated measures to improve retention (CMR1 … CMR8).

of one, which corresponds to the qualitative assessment "Important". Measures CMR13, CMR14, CMR19 and CMR20 obtained a relative importance of three, which corresponds to the qualitative assessment "Very important". Measures CMR1, CMR2, CMR3, CMR5, CMR6, CMR7, CMR8, CMR10, CMR11, CMR12, CMR15, CMR16, CMR17, CMR18 and CMR21 obtained a relative importance of three, which corresponds to the qualitative assessment "Essential".

Table 14 – Measures to improve retention rated by priority

Code	Measures	Degree of importance %			
		1	2	3	4
CMR1	Implementing an integrated management model	10.81	18.92	27.03	43.24
CMR2	Regulating the Specialised Health Staff	5.41	6.76	18.92	68.92
CMR3	Providing career stability to the HFAR staff	6.76	6.76	27.03	59.46
CMR4	"Reviewing" the rank of admission	18.92	33.78	16.22	31.08
CMR5	Providing salary supplementation	2.70	6.76	21.62	68.92
CMR6	Introducing more flexible working arrangements	1.35	10.81	24.32	63.51
CMR7	Investing in training	0.00	4.05	24.32	71.62
CMR8	Ensuring MP can obtain a consultant degree while serving in the military	9.46	16.22	31.08	43.24
CMR9	Allowing doctors in the reserves to perform active duty service	21.62	35.14	31.08	43.24
CMR10	Establishing partnerships with higher education institutions	9.46	16.22	31.08	43.24
CMR11	Centralising career management at DIRSAM	13.51	12.16	24.32	50.00
CMR12	Creating a 4th Branch	21.62	14.86	17.57	45.95
CMR13	Allowing Military Physicians to choose a horizontal career path	17.57	29.73	33.78	18.92
CMR14	Creating a Military Medicine Competency accredited by the Portuguese Medical Association	16.22	10.81	41.89	31.08
CMR15	Ensuring that the HFAR's core services have an impeccable reputation as a reference in healthcare at the national level	1.35	14.86	28.38	55.41
CMR16	Creating more vacancies for OF5 (MGO/COL)	12.16	27.03	27.03	33.78
CMR17	Increasing the number of Medical General Officers in the SMS	13.51	31.08	22.97	32.43
CMR18	Improving the working conditions	61.35	4.05	16.22	78.38
CMR19	Improving the mechanisms to provide feedback on job performance	2.70	16.22	45.95	35.14
CMR20	Creating forums (both formal and informal) that encourage service members to communicate with their supervisors	10.81	28.38	33.78	27.03
CMR21	Improving HR management by taking full advantage of MP know-how / area of expertise (the right person for the right job)	0.00	9.46	24.32	66.22

4.2.4. Brief overview and answer to SQ2

Over recent years, the awareness that HR management has a direct impact on job satisfaction, and thus on MP retention rates, has led to an attempt to address the specific operational needs of the branches by implementing measures to improve the efficiency of HR practices. Thus, several studies have attempted to explain the reasons for turnover intentions.

Motivation and organizational commitment are the cornerstone of retaining MP in the AAFF. Employees who are satisfied with their job and who identify with their organization have a considerably stronger psychological bond with that organization. There have also

been attempts to identify measures that can be taken to enhance organizational engagement.

Analysing the data collected in the study made it possible to identify a set of measures that can be taken by the AAFF to improve the management and retention of MP, rated by priority, as shown in Table 15. This provides an answer to SQ2, "What measures can be taken to improve MP retention in the AAFF?"

Table 15 – Measures to retain MP in the AAFF

Dimension	Measures	Priority
Management	Implementing an integrated management model	4
	Regulating the Specialised Health Staff	4
	Providing career stability to the HFAR staff	4
	Centralising career management at DIRSAM	4
	Creating a 4th Branch	4
	Improving HR management by taking full advantage of MP know-how / skill-set (the right person for the right job)	4
	Allowing Military Physicians to choose a horizontal career path	3
	Allowing doctors in the reserves to perform active duty service	2
Retention	Providing salary supplementation	4
	Introducing more flexible working arrangements	4
	Investing in training	4
	Ensuring MP can obtain a consultant degree while serving in the military	4
	Establishing partnerships with higher education institutions	4
	Ensuring that the HFAR's core services have an impeccable reputation as a reference in healthcare at the national level	4
	Creating more vacancies for OF5 (MGO/COL)	4
	Increasing the number of Medical General Officers in the SMS	4
	Improving the working conditions	4
	Creating a Military Medicine Competency accredited by the Portuguese Medical Association	3
	Improving the mechanisms to provide feedback on job performance	3
	Creating forums (both formal and informal) that encourage service members to communicate with their supervisors	3
	"Reviewing" the rank of admission	2

4.3. Most relevant medical specialties to the practice of OM

The HFAR Staff Plan (SP) lists all medical specialties available in the AAFF (2015).

At this time, the Branches do not agree on which medical specialties are most relevant to the practice of OM. This is largely due to each branch's operational specificities.

For J. Silva (op. cit.), the most important OM specialties are "General Practice / Family Medicine, Occupational Medicine, Public Health, and Sports Medicine". Mendes (2013) believes that the medical specialties needed to create the OM health care modules that Portugal may need to deploy are "Anaesthesiology, General Surgery, Internal Medicine, Intensive Care Medicine, and Orthopaedics" (p. 26), and adds that other specialties, such as "Cardiology, Ophthalmology, Otorhinolaryngology, Pulmonology, Psychiatry, Laboratory

Medicine, Medical Imaging, and Dentistry" (p. 27), also play an important role in the medical selection and preparation of a force. Mendes adds that all medical specialties are potentially relevant to the practice of OM because these doctors are MP above all else, and it does no benefit to Military Medicine to create a divide between hospital medicine and OM that would only lead to schisms and skewed perceptions about the importance of the Units that comprise the MHS (the HFAR being simply one of those Units) (C. Mendes, op. cit.).

MP's choice of specialty is another factor in the attractiveness of military medicine. For J. Silva (op. cit.), "most doctors who join the military choose hospital specialties rather that specialties associated with what one would call OM". N. Santos (op. cit.) states that MP "are usually drawn to areas that involve the treatment of diseases". Carvalho's study (2016) found that the military aspect of medicine was one of the reasons cited by MP for the incompatibility of OM with a hospital career, and that this was partly because it is not valued in the civilian world. This study confirms the need to create a Military Medicine Competency accredited by the Portuguese Medical Association, as this will allow MP to become more specialised and thus increase the attractiveness of the military aspects of operational medicine.

4.3.1. Initial list of relevant specialties

Despite the lack of agreement regarding which specialties are most relevant to the practice of OM, this study attempted to identify the specialties that garnerned the most consensus. Thus, a list of medical specialties was drawn from the SP of the Units that comprise the MHS (presented in Table 16).

Table 16 – Medical specialties

Specialties	
Anaesthesiology	Intensive Care Medicine
General surgery	Immunohemotherapy
Reconstructive plastic surgery	Immunology / Allergology
Vascular surgery / Angiology	Medical imaging
Gynecology / Obstetrics	Infectiology
Neurosurgery	Sports Medicine
Ophthalmology	Internal Medicine
Orthopaedics	Nephrology
Otorhinolaryngology	Neurology
Urology	Medical oncology
Maxillofacial Surgery	Clinical Pathology
Anatomical Pathology	Pulmonology
Cardiology	Psychiatry
Dermatology	Rheumatology
Endocrinology	Nuclear Medicine
Physiatry (PM&R)	Public Health
Gastroenterology	General Practice / Family Medicine
Haematology	Occupational Medicine

This list was reviewed by the experts, who were asked to group the medical specialties according to their applicability to the fields of hospital medicine, occupational medicine and operational medicine. The results were then measured on the scale presented in Table 17.

Table 17 – Medical specialties assessment scale

Degree of interviewee agreement in &	
%	**Qualitative assessment**
95 to 100	Excellent
85 to 94	Relevant
70 to 84	Good
50 to 69	Satisfactory
0 to 49	Insufficient

As shown in Table 17, Anaesthesiology, General Surgery, Orthopaedics and General Practice / Family Medicine obtained a degree of agreement from the experts of 83.33%, which corresponds to the qualitative assessment "Good", and are therefore validated as relevant to OM. Neurosurgery, Ophthalmology, Intensive Care Medicine, Infectiology, Sports Medicine, Internal Medicine, Psychiatry, Public Health and Occupational Medicine obtained a degree of agreement from the experts of 66.67%, which corresponds to the qualitative assessment "Satisfactory", and are therefore validated as relevant to OM. Otorhinolaryngology, Maxillofacial Surgery, Cardiology, Medical imaging and Clinical Pathology obtained a degree of agreement from the experts of 50%, which corresponds to the qualitative assessment "Satisfactory", and are therefore validated as relevant to OM. The remaining specialties obtained a degree of agreement from the experts lower than 50%, which corresponds to the qualitative assessment "Insufficient", and are therefore not validated as relevant to OM. All measures that were validated by the experts were evaluated by a broader sample of MPs.

Table 18 – Medical specialties rated by relevance

Specialties	E1	E2	E3	E4	E5	E6	Degree of agreement in %	
							Yes	No
Anaesthesiology	Y	N	Y	Y	Y	Y	83.33	16.67
General surgery	Y	N	Y	Y	Y	Y	83.33	16.67
Reconstructive plastic surgery	Y	N	Y	N	N	N	33.33	66.67
Vascular surgery / Angiology	N	N	Y	N	N	N	16.67	83.33
Gynecology / Obstetrics	N	N	N	N	N	N	0.00	100.00
Neurosurgery	Y	N	Y	Y	Y	N	66.67	33.33
Ophthalmology	Y	N	Y	Y	Y	N	66.67	33.33
Orthopaedics	Y	N	Y	Y	Y	Y	83.33	16.67
Otorhinolaryngology	N	N	Y	Y	N	Y	50.00	50.00
Urology	N	N	N	N	N	N	0.00	100.00
Maxillofacial Surgery	N	N	Y	Y	Y	N	50.00	50.00
Anatomical Pathology	N	N	N	N	N	N	0.00	100.00
Cardiology	N	N	Y	Y	N	Y	50.00	50.00
Dermatology	N	N	N	N	N	N	0.00	100.00
Endocrinology	N	N	N	N	N	N	0.00	100.00
Physiatry (PM&R)	N	N	Y	N	N	Y	33.33	66.67
Gastroenterology	N	N	N	N	N	N	0.00	100.00
Haematology	N	N	Y	N	N	N	16.67	83.33
Intensive Care Medicine	Y	N	N	Y	Y	Y	66.67	33.33
Immunohemotherapy	N	N	N	N	Y	N	16.67	83.33
Immunology / Allergology	N	N	N	N	N	N	0.00	100.00
Medical Imaging	Y	N	N	N	Y	Y	50.00	50.00
Infectiology	Y	N	Y	Y	N	Y	66.67	33.33
Sports Medicine	Y	Y	N	Y	N	Y	66.67	33.33
Internal Medicine	Y	N	Y	N	Y	Y	66.67	33.33
Nephrology	N	N	N	N	N	N	0.00	100.00
Neurology	N	N	N	Y	N	N	16.67	83.33
Medical Oncology	N	N	N	N	N	N	0.00	100.00
Clinical Pathology	N	N	N	Y	Y	Y	50.00	50.00
Pulmonology	N	N	Y	N	N	N	16.67	83.33
Psychiatry	Y	N	Y	N	Y	Y	66.67	33.33
Rheumatology	N	N	N	N	N	N	0.00	100.00
Nuclear Medicine	N	N	N	N	N	N	0.00	100.00
Public Health	Y	Y	N	Y	N	Y	66.67	33.33
General Practice / Family Medicine	Y	Y	N	Y	Y	Y	83.33	16.67
Occupational Medicine	Y	Y	N	Y	Y	N	66.67	33.33

4.3.2. Consolidated list of relevant specialties

A broader sample of MP were provided the list of validated specialties and were asked to rate them on the scale presented in Table 17. As Table 19 shows, Neurosurgery, Ophthalmology,

Otorhinolaryngology, Maxillofacial Surgery, Medical Imaging, Clinical Pathology, and Occupational Medicine obtained a degree of agreement lower than 50%, which corresponds to the qualitative assessment "Insufficient", and were thus not validated as relevant to the practice of OM. The remaining specialties obtained a degree of agreement from the experts higher than 50%, and are therefore validated as relevant to the practice of OM.

Table 19 – Medical specialties rated according to relevance

Specialty	Degree of agreement in %	
	Yes	No
Anaesthesiology	94.59	5.41
General Surgery	94.59	5.41
Neurosurgery	32.43	67.57
Ophthalmology	33.78	66.22
Orthopaedics	94.59	5.41
Otorhinolaryngology	39.19	60.81
Maxillofacial Surgery	20.27	79.73
Cardiology	52.70	47.30
Intensive Care Medicine	71.62	28.38
Medical Imaging	25.68	74.32
Infectiology	56.76	43.24
Sports Medicine	62.16	37.84
Internal Medicine	81.08	18.92
Clinical Pathology	14.86	85.14
Psychiatry	54.05	45.95
Public Health	54.05	45.95
General Practice / Family Medicine	63.51	36.49
Occupational Medicine	45.95	54.05

4.3.3. Brief overview and answer to SQ3

MP's choice of specialty is another factor in the attractiveness of military medicine. The military aspect of operational medicine is one of the reasons cited by MP for its incompatibility with a hospital career, partly because it is not valued in the civilian world. This study confirms the need to create a Military Medicine Competency accredited by the Portuguese Medical Association, as this will allow MP to become more specialised and increase the attractiveness of the military aspects of operational medicine.

Although the Branches do not agree on which medical specialties are most relevant to Operational Medicine, partly due to each branch's specific operational needs, this work attempted to identify the specialties that garnerned the most consensus.

The resulting list of medical specialties relevant to the practice of OM presented in Table 20 provides the answer to SQ3, "Which specialties are most relevant to the practice of OM?"

Table 20 – List of medical specialties relevant to OM

Specialty
Anaesthesiology
General surgery
Orthopaedics
Cardiology
Intensive Care Medicine
Infectiology
Sports Medicine
Internal Medicine
Psychiatry
Public Health
General Parctice / Family Medicine

4.4. Measures to improve the attractiveness of Military Medicine and answer to the RQ

The above analysis provides an answer to the RQ, "How can the attractiveness of Military Medicine be improved?" Over recent years, there have attempts to implement a set of measures to attract new HR to the AAFF and retain those who are already serving. Despite this, for the proposed measures to succeed, strategies must be defined and implemented in a coordinated manner by the branches and the EMGFA. Thus, this work suggests a set of measures that the AAFF can take to increase the attractiveness of Military Medicine. These measures are presented in Table 21.

Table 21 – Measures to increase the attractiveness of Military Medicine

Dimensão	Medidas	Priorização
Recruitment	Informing candidates of the group of specialties that they will be able to choose at the time of application	4
	Raising awareness about Military Medicine in medical universities	4
	Implementing different pathways of admission according to their impact on the core areas of Military Health	3
	Updating the instruments for carrying out tenders	3
	Centralising the recruitment processes	3
	Implementing marketing measures	3
	Enabling the HFAR to open the general training component of medical internship to civilian doctors	3
	Authorizing the admission of specialist doctors to the rank of 1Lieut/Cap through extraordinary tender	1

Management	Implementing an integrated management model	4
	Regulating the Specialised Health Staff	4
	Providing career stability to the HFAR staff	4
	Centralising career management at DIRSAM	4
	Creating a 4th Branch	4
	Improving HR management by taking full advantage of MP know-how / area of expertise (the right person for the right job)	4
	Allowing Military Physicians to choose a horizontal career path	3
	Allowing doctors in the reserves to perform active duty service	2
Retention	Providing salary supplementation	4
	Introducing more flexible working arrangements	4
	Investing in training	4
	Ensuring MP can obtain a consultant degree while serving in the military	4
	Establishing partnerships with higher education institutions	4
	Ensuring that the HFAR's core services have an impeccable reputation as a reference in healthcare at the national level	4
	Creating more vacancies for OF5 (MGO/COL)	4
	Increasing the number of Medical General Officers in the SMS	4
	Improving the working conditions	4
	Creating a Military Medicine Competency accredited by the Portuguese Medical Association	3
	Improving the mechanisms to provide feedback on job performance	3
	Creating forums (both formal and informal) that encourage service members to communicate with their supervisors	3
	"Reviewing" the rank of admission	2

5. Conclusions

The main goal of the MHS reforms was to optimise, rationalise and focus the resources allocated to Military Health. This aimed to improve the system's operational performance and functionality, thereby increasing its efficiency. The main measures that stemmed from this decision were the merger of the Branch Military Hospitals into the HFAR, as well as the establishment of the DIRSAM in the EMGFA.

The combination of staff cuts and the hiatus in the recruitment of MP through the EESPUM from 2013 to 2016 exposed the difficulties in "filling" the SMS. In addition to these difficulties, there has been a worrying trend that shows an increase in the number of MP who opt for early separation (121 MP left the military in the last seven years). Therefore, there is a need to develop measures to improve the recruitment, management and retention of MP in the AAFF.

Having established the MHS's greatest constraints in terms of HR, this study found that, underlying the issues that influence the attractiveness of Operational Medicine (OM) is the attractiveness, or lack thereof, of Military Medicine as a whole (despite the fact that the operational component is the core of Military Health).

The GO of this study was to analyse measures that can improve the attractiveness of Military Medicine. This was achieved by answering the RQ - "How can the attractiveness of

Military Medicine be improved?"

The methodology used in the study was developed in three phases (exploratory, analytical and conclusive) and essentially used inductive reasoning, a qualitative research strategy reinforced by quantitative elements and a case study research design.

Achieving SO1 involved analysing measures to improve attractiveness and increase the recruitment of MP. The study showed that the aspects most likely to motivate young people to become MP are career stability, access to a medical specialty, and the adventurous and humanitarian aspects of medicine. Therefore, these aspects should be explored by implementing measures that ensure applicants' initial expectations are met. Over the last five years, the response to the tenders issued by ordinance has been lukewarm, as shown by the low numbers of applicants. Therefore, SQ1 – "What measures can be taken to improve attractiveness and the recruitment of MP?" – was answered by identifying a set of measures that can be taken to improve attractiveness and the recruitment of MP.

To achieve SO2, several measures to retain MP in the AAFF were analysed. It was found that, over recent years, there has been an attempt to address the specific operational needs of the branches by implementing measures to improve the efficiency of HR management, as shown by the studies that have attempted to explain the reasons for MP turnover intentions. Motivation and organizational commitment are the cornerstone of retaining MP in the AAFF. Employees who are satisfied with their job and who identify with their organization have a stronger psychological bond with that organization. There have also been attempts to identify measures to increase organizational engagement. Thus, SQ2 – "What measures can be taken to improve MP retention?" – was answered by identifying a set of measures that can be taken to retain MP in the AAFF.

SO3 aimed to determine which specialties are most relevant to the practice of OM. The study found that MP's choice of specialty is a factor in the attractiveness of Military Medicine. The military aspect of operational medicine is one of the reasons cited by MP for its incompatibility with a hospital career, partly because it is not valued in the civilian world. Addressing this gap will involve the creation of a Military Medicine Competency accredited by the Portuguese Medical Association, as this will allow MP to become more specialised and increase the attractiveness of the military aspects of operational medicine. Although the Branches do not agree on which medical specialties are most relevant to Operational Medicine, partly due to each branch's specific operational needs, this work attempted to identify the specialties that garnerned the most consensus. SQ3 – "Which specialties are most relevant to the practice of OM?" – was answered by identifying the medical specialties generally considered to be relevant to the practice of OM.

The answer to the RQ – "How can the attractiveness of Military Medicine be improved?" – is that, despite the recent attempts to implement a set of measures to attract new HR to the AAFF and retain those who are already serving, for the proposed measures to succeed, strategies must be defined and implemented in a coordinated manner by the branches and the EMGFA. This work suggests a set of measures that can be taken to increase the attractiveness of Military Medicine and thus improve the recruitment, management and retention of MP.

The study identified new measures to improve the attractiveness of Military Medicine and confirmed the importance of the measures that have already been implemented or identified in previous studies by measuring their impact on those who are most affected by them, that is, MP. The list of measures rated by priority by the MP that participated in this study are thus its **main contribution to knowledge**.

The main **limitations** of the study were the sample size, especially with regards to the number of Air Force MP that answered the questionnaire. With a larger sample, the priority of the measures and the specialties identified as relevant to the practice of OM may have been different while also having a greater impact on decision-makers.

Future studies are needed to broaden the research to other NATO countries, with special focus on the studies carried out by the Committee of the Chiefs of Military Medical Services (COMEDS), which can provide a basis for comparison between the Portuguese reality and that of our allies.

The **practical implication** of this study is that it helps explain the current difficulties in recruitment, management, and retention of MP in the MHS services. Finally, the study's **reccommendation** is that its findings be shared with the MHS services, particularly the list of prioritized measures to improve the attractiveness of Military Medicine.

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