

# RETENTION OF MILITARY PHYSICIANS IN THE PORTUGUESE ARMED FORCES: EMPLOYER ATTRACTIVENESS, PERCEIVED ORGANISATIONAL SUPPORT AND PEOPLE MANAGEMENT PRACTICES 4.0<sup>1</sup>

## RETENÇÃO DE MÉDICOS MILITARES NAS FORÇAS ARMADAS PORTUGUESAS: PERCEÇÕES DE ATRATIVIDADE, APOIO ORGANIZACIONAL E PRÁTICAS DE GESTÃO DE PESSOAS 4.0

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### **Abstract**

The Armed Forces (AAFF) face significant challenges in retaining highly trained and specialised personnel, particularly military physicians. In Portugal, this issue has led to a growing shortage of these professionals, driven by a worrying turnover rate.

This study, grounded in inductive reasoning and employing a mixed-methods research strategy, aimed to assess Portuguese military physicians' perceptions of the attractiveness and support provided by the AAFF, their turnover intentions (TI) and the People Management Practices (PMP4.0) they most value. The goal was to identify strategic guidelines to retain these high-value assets.

Based on a sample representing 60% of all military physicians, the research revealed that the AAFF are perceived as only marginally attractive, and particularly unattractive in

**How to cite this article:** Loureiro, M. I. M. G. M., Fachada, C. P. A. & Loureiro, N. A. R. S., (2025). Retention of Military Physicians in the Portuguese Armed Forces: Employer Attractiveness, Perceived Organisational Support and People Management Practices 4.0. *Revista de Ciências Militares*, November, XIII(2), 179-247. <https://www.ium.pt/publist/1>

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<sup>1</sup> Article adapted from the individual research work carried out as part of the General Officers Course 2022/2023. The defence took place in July 2023 at the Military University Institute.

terms of benefits and rewards. Perceived organizational support (POS) among these officers is low and their TI is, overall, low. The PMP4.0 they most value tend to address the areas that these officers consider to be most lacking in attractiveness and organizational support. The study proposed strategic guidelines, which, after validation and analysis, provided internal employer branding strategies to help retain military physicians.

**Keywords:** Employer branding; military physicians; organisational attractiveness; perceived organisational support; people management practices; turnover intentions.

### **Resumo**

*A dificuldade de retenção nas Forças Armadas (FA), especialmente de militares altamente treinados e especializados, entre os quais, médicos militares, provoca um elevado turnover e uma crescente falta destes efetivos, que é preocupante em Portugal.*

*Esta investigação, ancorada num raciocínio indutivo, associado a uma estratégia de investigação mista, pretendeu aprofundar o conhecimento da perceção que os médicos militares portugueses têm sobre a atratividade e o apoio das FA, e a sua intenção de turnover (IT), bem como das práticas de gestão de pessoas 4.0 (PMP4.0) por eles mais valorizadas, com intuito de identificar linhas de orientação estratégica (SG) potencialmente mitigadoras do problema da retenção destes high-value assets.*

*Numa amostra de 60% do universo dos médicos militares, observou-se que as FA são marginalmente atrativas, revelando-se mesmo pouco atrativas na dimensão dos benefícios e recompensas. A perceção de apoio que estes oficiais têm da organização é baixa, mas, ainda assim, a sua IT tende a ser globalmente baixa. Conclui-se, ainda, que as PMP4.0 mais valorizadas estão generalizada e inversamente, alinhadas com as áreas que estes oficiais consideram mais deficitárias da atratividade e do apoio organizacional. Neste âmbito, foram propostas SG, que após validação e análise, permitiram identificar contributos de employer branding interno para melhoria da retenção dos médicos militares.*

**Palavras-chave:** *atratividade organizacional; employer branding; intenção de turnover; médicos militares; perceção de apoio organizacional; práticas de gestão de pessoas.*

### **1. Introduction**

Over the past two decades, Portugal and other North Atlantic Treaty Organization (NATO) countries have encountered significant challenges in managing their military personnel (Magalhães & Vaz-Pinto, 2020; NATO, 2007; Rijo, Marreiros, Mairós, & Paquete, 2018), driven by social, demographic, political and economic changes. These changes have led to a decline in recruitment and growing difficulties in retaining personnel, particularly those with advanced training and specialised skills (NATO, 2007; Rijo et al., 2018). Military medical officers are among the most affected (Braga & Fachada, 2018; Branco, 2018), with an increase

in voluntary departures. As a result, new personnel had to be recruited to fill these positions and prevent incalculable losses for the organisation (Dupré & Day, 2007; McQuerrey, 2019). To address the high levels of turnover<sup>2</sup> among these high-value assets, a widespread issue in many NATO countries, the Committee of the Chiefs of Military Medical Services requested a study from NATO's Science & Technology Organisation to investigate the factors affecting attraction, recruitment and retention of NATO military medical professionals (NATO, 2012).

In Portugal, the Armed Forces a significant number of military physicians across all three branches exited the AAF, both through retirement from the Career Staff (QP) and through special leaves to stand for elections. As observed by Braga and Fachada (2018) and Branco (2018), this trend is largely due to "lack of prospects" (Branco, 2018, p.37). The high numbers of voluntary exits between 2010 and 2017 appear to be driven "less by [...]the cost of leaving (compensation), [...] and more by a lack of affective identification or psychological commitment to the organisation" (Braga & Fachada, 2018, p.176). These findings are supported by Loureiro, Fachada, and Loureiro (2023).

Projections indicate that, by 2030, there will be a significant shortage of skilled professionals, underscoring the urgent need for talent retention strategies (Korn Ferry, 2018, 2022; Tarique & Schuler, 2010).

Ambler and Barrow (1996) propose a promising approach to address this issue through the strategic development of employer branding (EB), which consists of the functional, economic and psychological benefits that an organisation offers to attract and retain employees: they suggest that improving the internal value proposition for each employee by assessing employer attractiveness (EA) and people management practices (PMP) within the organisation can help retain talent (Ambler & Barrow, 1996; Backhaus & Tikoo, 2004). In countries struggling to maintain retain their military personnel, EB is a valuable tool for addressing these challenges (Kaur & Pingle, 2018).

According to Bonilla (2019) and Duarte, Nascimento and Almeida (2019), 21st-century people management – "people management 4.0" – requires the implementation of tailored PMP. Furthermore, studies have found that PMP that invest in organisations' human capital and recognise employees' contributions are linked to higher levels of perceived organisational support (POS) (Eisenberger, Aselage, Sucharski, & Jones, 2004; Rhodes & Eisenberger, 2002). High POS is also associated with the intention to stay in the organisation and lower turnover rates (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Foong-Ming, 2008; Park, Newman, Zhang, Wu, & Hooke, 2016; Rhoades & Eisenberger, 2002), and some studies have examined the relationship between turnover rates and turnover intentions (TI) (Griffeth, Hom, & Gaertner, 2000; Tett & Meyer, 1993). These relationships are summarised in the diagram in Figure 1.

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<sup>2</sup> Turnover is the rate of staff rotation in an organisation, i.e. the arrival and departure of employees over a given period of time, which reflects the stability of the workforce (Armstrong & Taylor, 2014).



**Figure 1 – Relationship between EB, PMP, POS and TI.**

When identifying PMP that could help reduce military medical staff turnover, it is worth bearing in mind the findings of Loureiro et al. (2023), which confirmed what Braga and Fachada (2018) had already observed: that these officers' commitment to their branch is primarily affective and that their POS tend to be low. Loureiro et al. (2023) also showed that mentoring (a PMP positively correlated to POS and organisational commitment) reduced turnover in the study sample.

This study aims to provide further insight into EA, POS and TI in a sample of military physicians, identifying the PMP4.0 they most value, and propose strategies for retaining these high-value assets.

Following Sampieri (2013), the study analyses retention (of military physicians) within three dimensions: geographically, it examines the operational context of the Portuguese Armed Forces, specifically military physicians on active duty; temporally, it concerns the period of January 2023; conceptually, it considers the role of PMP4.0 in retaining military physicians in the AAFP, focusing on the relationship between EA, POS, and TI.

This study aims to propose strategies to optimise the retention of military physicians in the Portuguese AAFP. This General Objective (GO) is divided into two Specific Objectives (SO):

SO1 – To assess military physicians' perceptions of the Portuguese AAFP in terms of employer attractiveness, organisational support and turnover intentions.

SO2 – To assess the relevance of People Management Practices 4.0 for military physicians.

These objectives are linked to the Research Question (RQ):

RQ – What strategies can be implemented to optimise the retention of military physicians in the Portuguese AAFP?

This paper is organised into six chapters, in addition to this introduction. The second chapter presents the theoretical and conceptual framework, the literature review, and key concepts relevant to the study, as well as the analytical framework. The third chapter details the methodology and research methods. The fourth and fifth chapters address the subsidiary research questions. The sixth chapter answers the RQ. The seventh and final chapter contains the conclusions, contributions to knowledge, limitations, suggestions for future studies and practical recommendations.

## **2. Theoretical and conceptual framework**

This chapter presents the theoretical framework and conceptual foundations of the research.

### **2.1. Organisational Attractiveness**

Ambler and Barrow (1996) introduced the concept of Employer Branding (EB), which combines marketing strategies with PMP. EB encompasses the functional, economic and

psychological benefits that an organisation offers to its current and potential employees. Strategically developing EB is essential for recruiting and retaining personnel.

EB unfolds in three stages (Backhaus and Tikoo, 2004): defining the organisation's value proposition individually, externally and internally; "selling" the value proposition to attract potential candidates; internally implementing this "marketing campaign" to enhance retention. According to Ambler and Barrow (1996) and Backhaus and Tikoo (2004), current PMP can be improved during the third phase. Employer Attractiveness (EA) consists of how potential and current employees perceive the organisation's value proposition (Berthon, Ewing, & Hah, 2005). EA can be measured using various scales (Berthon et al., 2005; Nguyen & Nguyen, 2021; Tanwar & Prasad, 2017), including the EA scale developed by Berthon et al. (2005), which evaluates an organisation's external attractiveness in five dimensions:

- Economic value: financial rewards/compensation, job security and opportunities for promotion;
- Development value: sense of recognition, trust and self-worth, opportunities for career advancement;
- Interest value: stimulating work environment;
- Social value: positive work environment that promotes a pleasant and healthy atmosphere among colleagues;
- Application value: opportunities to apply and share knowledge and expertise.

Building on Ambler and Barrow's (1996) EB framework and on the scale proposed by Berthon et al. (2005), Tanwar and Prasad (2017) developed an updated scale to reflect generational shifts in motivations and interests, which also assesses internal EA through five dimensions grouped into three strands, which include: a psychological dimension (healthy work atmosphere and work life balance); a functional dimension (training and development, ethics and corporate and social responsibility), and; an economic dimension (compensation and benefits). Nguyen and Nguyen (2021) explored the work-life balance dimension by assessing EA in ten dimensions, which include: corporate social responsibility; education/training; promotion; teamwork; support from management and colleagues; travel opportunities; and work-life balance. Work-life balance is subdivided into five components: work-life balance satisfaction; behaviour-based family interference with work; time-based work interference with family, and; strain-based family interference with work.

**Table 1 – Table 1 - Dimensions of the EA scales**

	Economic	Development / Education/Training	Interest	Social atmosphere	Application	Work-life balance	Ethics/Social responsibility	Team	Travel	Promotion
Berthon et al.	X	X	X	X	X					
Tanwar & Prasad	X	X		X		X	X			
Nguyen & Nguyen		X		X		4X	X	X	X	X

Source: Adapted from Berthon et al. (2005), Nguyen and Nguyen (2021) and Tanwar and Prasad (2017).

In the healthcare sector, Baltazar’s (2022) study of nursing professionals in Portugal reveals that perceived attractiveness directly influences organisational commitment and turnover intentions, mediated by factors such as personal brand equity<sup>3</sup> and burnout<sup>4</sup>. These findings align with Dassler et al. (2022), who identified work-life balance as a key dimension in enhancing attractiveness and retention. Ribeiro (2023) further supports this evidence by demonstrating that benefits related to well-being and professional expectations influence job application decisions, mediated by perceptions of employer attractiveness. Similarly Medina-Garrido, Biedma-Ferrer and Ramos-Rodríguez (2017) show that family-friendly policies not only improve employee well-being but also positively impact organisational performance and talent retention.

The AAFF could benefit from a strategic focus on enhancing its employer brand among current employees. Implementing EB practices that are compatible with military values, promote social responsibility and provide a satisfying balance between the mission and family life may foster a stronger emotional bond to the AAFF and encourage these medical officers’ to remain with the organisation.

## 2.2. People management practices 4.0

Modern PPM have moved beyond traditional Taylorist approaches (which focused on labour as a production factor) and Weberian models (which focused on bureaucratic administration) of the early 20th century. Today, PMP go beyond merely setting salaries and

<sup>3</sup> The perceived value of a professional based on their personal brand. In the case of a military doctor, high PBE would be reflected in perceptions of competence, integrity, trustworthiness and alignment with institutional values. Such individuals tend to have greater influence, visibility and retention potential. In organisations, PBE is linked to motivation, leadership, commitment and internal attractiveness, serving as an intangible asset that boosts performance and retention (Rampersad 2009).

<sup>4</sup> A syndrome caused by chronic workplace stress, defined by three core dimensions: emotional exhaustion; depersonalisation; and a reduced sense of personal accomplishment (Leiter and Maslach 2005). In the healthcare sector, and particularly for military doctors who operate in high-pressure, cumulative stress environments, burnout poses a serious risk to mental health, clinical performance and career retention decisions.

handling administrative or contractual matters, but instead focus on creating opportunities for learning and personal growth, strengthening employees' identification with the organisation, building social networks based on trust and cooperation and promoting fairness and social responsibility (Rego et al., 2018, pp.41,67-68).

21st-Century people management, or "people management 4.0", emerged as the fourth industrial revolution blurred the lines between the physical, digital and biological realms, revealing the need to focus on people, as their capacity for transformation, growth, and adaptability is essential to maintain organisational competitiveness (Bonilla, 2019). This approach:

- Is an evolution of "strategic people management", which emerged in the 1980s (Rego et al., 2018, p.71);
- Encompasses not only technical and professional skills but also power skills, which include soft skills, digital literacy and cognitive abilities (design thinking and critical thinking); in addition to attracting (attract), retaining (retain) and developing (develop) employees (Tarique & Schuler, 2010), it also aims to inspire them to "fall in love", that is, engage with the organisation and "empower" them with essential resources (Duarte et al., 2019).

Strategic people management refers to "the policies, practices and systems that shape employee behaviour, attitudes and performance in ways that enhance the organisation's competitiveness and capacity for learning", encompassing workforce planning, recruitment and selection, career management, training and development, performance evaluation and reward systems and, last but not least, creating a positive work environment (Rego et al., 2018, p.57).

In this type of management, employees, as the organisation's "human capital"<sup>5</sup>, are recognised as unique individuals, valued not only for their academic and technical qualifications, but also for their social capital, which includes the networks of cooperation and trust they cultivate, and their psychological capital, which encompasses personal traits such as self-confidence, optimism, hope and resilience. To manage people effectively, all of these aspects must be considered (Rego et al., 2018, pp.42-43).

Moreover, Bonilla (2019) and Duarte et al. (2019) argue that, in a 4.0 world, the range of "human capital" competencies must be expanded to include digital skills and thinking skills, and employees should be managed as "human talents" and partners of the organisation. Finding an adaptive alignment between individual and organisational interests is a strategic necessity (Chiavenato, 2014, pp.68-69).

In other words, strategic people management is essential to retain talent and boost organizational competitiveness, resilience and performance (Berthon et al., 2005; Claus, 2019; Tarique & Schuler, 2010).

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<sup>5</sup> Human capital is the driving force behind an organisation, which, when properly integrated in the organisational structure, generates the human energy necessary to create strategic advantages in a competitive global environment, representing an intangible asset (Chiavenato, 2014, pp.45-47).

The literature highlights several effective PMP, including information sharing, performance-based rewards, incentive systems, flexible working hours, training and job security. These practices foster stability, teamwork, equality, mutual respect and participatory decision making (Pfeffer, 1994, 1997, cited in Rego et al., 2018, pp.117-118). Correio, Correio and Correio (2021) highlight a set of PMP4.0 that support and promote: job rotation and skill enrichment; increased responsibility and decision making autonomy; decentralised and innovative problem solving; a collaborative work environment; and better work/life balance.

Regardless of which PMP are implemented, there is broad consensus that one size fits all approaches are ineffective. Rather than applying a universal model, PMP should be tailored to align with the organisation's strategy, operational structure (configuration) and evolving context (contingency). In other words, they require a configurational and contingency alignment (Rego et al., 2018, p.119).

In its 2012 report, NATO identified five PMP aimed at retaining military medical personnel:

- Financial incentives, such as the introduction of salary supplements and/or special payments;
- Flexible forms of service and employment status: providing flexible working hours and/or part-time work, opportunities to work in public/private hospitals and/or universities, and contract service options;
- Career planning and professional development on the basis of ranks corresponding to experience and level of training, mentorship programmes and succession planning;
- Compatibility of career and family: offering flexible working hours, the possibility of working from home and providing childcare at on-site kindergartens;
- Training measures that encourage skill enhancement/life long learning.

Table 2 shows how several European countries have put these practices into action.

**Table 2 – PMP adopted by analogue countries to retain military physicians**

Country	Challenges	People Management Practices
Spain	High turnover of military physicians.	<ul style="list-style-type: none"> <li>Shared availability (since 2015, military medical professionals have primarily worked in external hospital institutions, creating potential conflicts of interest as operational mission demands increase).</li> <li>Diverse entry pathways (candidates may join with or without a medical degree or a medical specialty)</li> <li>Open competitions for foreign physicians on a contract basis.</li> <li>Remuneration incentives (allowances for certain specialties, compensation for “inconvenient” working hours).</li> <li>Reservist physicians can participate in short-term operational missions.</li> </ul>
France		<ul style="list-style-type: none"> <li>Contract service options with the possibility of transitioning into a full military career.</li> <li>Creation of a corps of retired physicians: since 2000, military and civilian physicians in high-demand specialties have been integrated into the Defence Medical Service to ensure continuity of care.</li> </ul>
Belgium		<ul style="list-style-type: none"> <li>A modest salary increase for military physicians.</li> <li>Additional allowances for participation in operational missions.</li> </ul>
United Kingdom	Annual attrition rate of around 5%, perceived as manageable.	<ul style="list-style-type: none"> <li>Military physicians work in collaboration with the National Health Service (NHS) and receive slightly higher salaries (between 2% and 15% more) than their NHS counterparts.</li> </ul>

Source: Adapted from Branco (2018).

For military physicians in the Portuguese AAFE, retention strategies encompass not only general PMP applicable to all military personnel but also specialised measures defined in the Medical-Military Career Statute (CMM). Additionally, career development initiatives tailored specifically to this professional group are outlined in the Statute of Armed Forces Personnel (EMFAR) (Table 3).

**Table 3 – PMP adopted in Portugal to retain military physicians**

Legislation		People Management Practices	
DL no. 519/77	Art. 3 to Art. 6	Career recognition	<ul style="list-style-type: none"> <li>Alignment of the Medical-Military Career (CMM) with the Civilian Medical Career (CMC) in terms of technical competencies</li> </ul>
	Art. 12 Art. 13	Career progression	<ul style="list-style-type: none"> <li>Requirement to attain specific grades from the CMC for promotion.</li> <li>Minimum service duration in each CMC grade before eligibility for promotion.</li> </ul>
	Art. 18	Remuneration	<ul style="list-style-type: none"> <li>Salary supplements to align military physicians’ remuneration with that of their CMC counterparts.</li> </ul>
	Art. 11. Art. 14.	Contractual obligations	<ul style="list-style-type: none"> <li>Ten-year service requirement starting from Grade 3 (specialist physician), counted from the date of promotion to this grade.</li> <li>Successful completion of medical career courses (Grade 1 and 2) is mandatory to remain in the QP.</li> </ul>

[Cont.]

DL no. 332/86	Art. 4. to Art. 6.	Career recognition	<ul style="list-style-type: none"> <li>• Alignment of the CMM with the CMC in terms of technical competencies.</li> </ul>
	Art. 12.	Career progression	<ul style="list-style-type: none"> <li>• Requirement to attain specific grades from the CMC for promotion.</li> </ul>
	Art. 18.	Remuneration	<ul style="list-style-type: none"> <li>• Salary supplements to align military physicians' remuneration with that of their CMC counterparts.</li> </ul>
	Art. 11. Art. 14.	Contractual obligations	<ul style="list-style-type: none"> <li>• Ten-year service requirement starting from the date of promotion to the grade of assistant (specialist physician).</li> <li>• Successful completion of medical career courses (complementary internship) is mandatory to remain in the QP.</li> </ul>
DL no. 90/2015	Art. 63.	Career progression	<ul style="list-style-type: none"> <li>• Special conditions related to CMC grades are required for promotion (PoA and PoAF).</li> </ul>
		Legal frameworks governing health areas	<ul style="list-style-type: none"> <li>• "the legal frameworks governing health areas are defined by dedicated legislation".</li> </ul>

Legend: Decree-Law (DL); Portuguese Army (PoA); Portuguese Air Force (PoAF).

Source: Compiled from DL no. 519/77, DL no. 332/86 and DL no. 90/2015.

### 2.3. Perceived organisational support

According to Organisational Support Theory, perceived organisational support reflects employees' feelings about how much the organisation values their contributions and prioritises their well-being. These perceptions are shaped by their personal experiences, interactions with the organisation's policies and procedures, and relationships with various organisational agents (Eisenberger et al., 1986; Eisenberger et al., 2004; Eisenberger, Fasolo, & Davis-LaMastro 1990; Rhoades & Eisenberger, 2002). Employees assess their relationship with the organisation (as if it were a personified entity) based on its willingness to recognise, approve and appreciate their professional dedication (Eisenberger et al., 1986).

The determinants/antecedents of POS are fair and equitable treatment, a sense of support from managers and PMP/policies (Eisenberger et al., 2004; Rhoades & Eisenberger, 2002) that employees interpret as genuine initiatives of the organisation, and not merely as compliance with regulations or driven by market fluctuations (Eisenberger et al., 1986; Shore & Shore 1995, cited by Honório 2009). The outcomes of strong POS include a heightened sense of obligation (to contribute to organisational goals), increased commitment and job performance, stronger organisational commitment and desire to remain with the organisation, and lower levels of absenteeism and turnover (Eisenberger et al., 1986; Eisenberger, et al., 2002; Foong-Ming, 2008; Park, 2016; Rhoades & Eisenberger, 2002).

### 2.4. Turnover intentions

Turnover is defined as an employee's deliberate and intentional decision to leave an organisation due to dissatisfaction (Tett & Meyer, 1993). Turnover intentions (one of the strongest predictors of turnover) represent the conscious desire to seek employment elsewhere (Griffeth et al., 2000; Tett & Meyer, 1993).

Unlike predictable forms of workforce attrition (such as retirements) turnover is less foreseeable but preventable, reflecting organisational dynamics rather than individual employee decisions (McQuerrey, 2019). Turnover always represents a loss for the organisation, as the departing employee must be replaced (McQuerrey, 2019). For military organisations, turnover is particularly concerning due to the high cost of training and the time required to develop the specialised skills required for complex military operations, which are lost when a highly trained professional leaves suddenly and unexpectedly (Dupré & Day, 2007). Moreover, the new recruitment, selection and training process to replace that individual and maintain operational continuity is both costly and complex (Dupré & Day, 2007).

The AAFP can adopt several organisational strategies to reduce turnover. A key approach is internal employer branding, which aims to strengthen an organisation's value proposition for current employees. As shown by Staniec and Kalińska-Kula (2021), initiatives such as team-building activities, coaching, performance evaluation systems and internal recruitment, when integrated into a cohesive employer branding strategy, significantly boost employee engagement and retention.

Military organisations face unique challenges, such as motivating younger personnel, managing talent and aligning HR with the institutional mission. Reducing turnover requires practices tailored to the specific needs of military personnel, complemented by talent management strategies and a focus on the well-being of active members and veterans (op den Buijs & Olsthoorn 2023).

Reis, Sousa and Dionisio (2021) highlight that employer branding is a strategic tool in talent management, strengthening employees' emotional connection to and identification with the organisation's mission. In highly competitive and demanding environments such as the military, cultivating a strong and clear employer identity is essential for attracting and retaining skilled professionals.

As of 31 December 2022, the number of military physicians declined in the Navy (PoN) and Air Force (PoAF), whereas the Army (PoA) saw a net increase, resulting in a total reduction of 15 medical officers across all branches (Table 4). Notably, this decline might have been preventable. During the reporting period, 67 military physicians were discharged from the QP, and an additional 24 requested leave<sup>6</sup>.

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<sup>6</sup> Special leave to stand for elections (Article 95(j) of the EMFAR) and unlimited leave (Article 95(k) of the EMFAR).

**Table 4 – Entry and exit of military physicians in the AF\***

YEAR	PoN			PoA			PoAF			TOTAL BALANCE
	Medical officer entry	Medical officer exit	NET BALANCE	Medical officer entry	Medical officer exit	NET BALANCE	Medical officer entry	Medical officer exit	NET BALANCE	
	EN + CFO	Discharge QP + Licence + R/RE		AM + CFO	Discharge QP + Licence + R/RE		AFA + ETM	Discharge QP + Licence + R		
2010	4+0	0+0+3	1	10+0	0+0+1	+9	3+0	0+0+4	-1	+9
2011	0+0	0+0+1	-1	8+0	0+0+2	+6	2+0	0+0+0	+2	+7
2012	2+0	0+0+4	-2	6+0	0+0+10	-4	3+0	0+0+2	+1	-5
2013	0+0	2+1+3	-6	8+0	0+1+2	+5	3+0	0+1+2	0	-1
2014	0+0	6+0+0	-6	3+0	0+0+5	-2	2+0	0+0+1	+1	-7
2015	2+0	3+0+1	-2	11+0	0+0+0	+11	3+0	1+0+1	+1	+10
2016	0+0	9+0+2	-11	5+0	0+0+4	+1	4+0	4+0+2	-2	-12
2017	2+4	5+0+1	0	6+0	2+1+0	+3	3+0	1+7+0	-5	-2
2018	0+0	0+0+0	0	5+0	2+0+2	+1	3+0	1+0+2	0	+1
2019	0+5	2+0+1	+2	5+1	2+1+0	+3	0+0	7+0+3	-10	-5
2020	0+7	1+(-1)+0	+7	0+2	1+(-2)+1	+2	0+2	0+0+0	+2	+11
2021	0+5	2+1+1	+1	0+0	7+8+1	-16	0+1	2+(2-2)+2	-3	-18
2022	0+3	4+1+0	-2	0+0	2+0+1	-3	0+3	1+0+0	+2	-3
<b>TOTAL</b>	<b>34</b>	<b>53</b>	<b>-19</b>	<b>70</b>	<b>54</b>	<b>+16</b>	<b>32</b>	<b>44</b>	<b>-12</b>	<b>-15</b>

\*All officers who join the AAFP medical staff classified as entries, while those who cease active service are considered exits, regardless of the entry or exit route. Legend: Air Force Academy (AFA); Military Academy (AM); Officers' Training Course (CFO); Naval School (EN); Military Technical Internship (ETM); Retired (RE); Reserve (R).

Source: Prepared from Navy Personnel Directorate (email, 13 March 2023), Army Human Resources Administration Directorate (emails, 8 and 14 March 2023) and PoAF Personnel Directorate (email, 7 March 2023).

## 2.5. Analytical framework

Table 5 outlines the analytical framework.

Table 5 – Analytical framework

General Objective	To propose strategies to optimise the retention of military physicians in the Portuguese AAFF			
Research Question	What strategies can be implemented to optimise the retention of military physicians in the Portuguese AAFF?			
Specific Objectives	Subsidiary Questions	Key concepts	Dimensions	Indicators
<b>SO1:</b> To assess military physicians' perceptions of the Portuguese AAFF in terms of employer attractiveness, organisational support and turnover intentions.	<b>SQ1:</b> How do military physicians perceive the Portuguese Armed Forces as an employer in terms of attractiveness, organisational support and their intention to stay or leave?	Employer Attractiveness	Healthy and ethical working environment (EA1)	Q2.6; Q2.12; Q2.18; Q2.19; Q2.24
			Work/life balance (EA2)	Q2.26; Q2.27; Q2.28; Q2.33
			Benefits and rewards (EA3)	Q2.1; Q2.2
			Training and development (EA4)	Q2.4; Q2.5; Q2.10
			Promotion (EA5)	Q2.9; Q2.16
		Perceived Organisational Support	Personal support (POS1)	Q3.4; Q3.7; Q3.8; Q3.10; Q3.13; Q3.14; Q3.19; Q3.24
			Professional support (POS2)	Q3.6R; Q3.16R; Q3.17R; Q3.20R; Q3.21R
Turnover Intentions	-	Q4.3; Q4.4; Q4.5; Q4.1R; Q4.2R		
<b>SO2:</b> To assess the relevance of People Management Practices 4.0 for military physicians.	<b>SQ2:</b> How relevant are People Management 4.0 practices to military physicians?	People Management Practices 4.0	Healthy and ethical working environment	PMP9; PMP12; PMP13; PMP16; PMP17; PMP18
			Work/life balance	PMP4; PMP5; PMP6; PMP9
			Benefits and rewards	PMP1; PMP2; PMP3; PMP7; PMP13; PMP15; PMP17; PMP18
			Training and development	PMP3; PMP11; PMP14; PMP16
			Promotion	PMP7; PMP8; PMP9; PMP10; PMP12

Legend:

Q – Questions included in the Questionnaire administered to military physicians (see Appendix A);

PMP –People Management Practices 4.0 (see Appendix C).

### 3. Methodology and method

This chapter presents the research methodology and research method.

#### 3.1. Methodology

The study employed an inductive reasoning approach (Santos & Lima, 2019, pp.18) to assess how military physicians perceive the Portuguese AAFP in terms of EA, POS and TI and how relevant PMP4.0 are to these officers. The aim was to identify strengths and weaknesses and propose strategies to optimise retention. The mixed-methods research strategy combined a literature review, questionnaire surveys and semi structured interviews (Santos & Lima, 2019, pp.29-32), and the study followed a cross sectional research design, which is well suited to analyse variations in responses among different groups (in this case, different groups of physicians) at a specific point in time regarding a given topic (retention of military physicians). This design allowed for the collection of data suitable for both descriptive and analytical analysis, making it possible to identify correlations (Santos & Lima, 2019, p.33).

#### 3.2. Method

##### 3.2.1. Sample and procedure

Participants.The questionnaire targeted all military medical officers in the Portuguese AAFP, both on active-duty<sup>7</sup> and in the reserves<sup>8</sup>, as of February 2023 (N=257). A non-probabilistic convenience sample (Sarmiento, 2013, p.84) was collected, representing 60% of the population (N) (154 complete responses). The distribution by branch was 58% Navy (n=40), 46.7% Army (n=56) e 85.3% Air Force (n=58).

In terms of demographic characteristics, the universe of AAFP medical officers is predominantly composed of men (N=156; 60.7%) between 31 and 40 years old (N=136; 53%), most are general and senior officers (N=143; 55.6%) and serve in units outside their branches (N=92; 35.8%). The distribution by branch is identical, with the exception of the PoAF, where most medical officers are women serving in branch units (Table 6).

The demographic profile of the sample mirrored the broader population. Most respondents are: men (n=87; 56.5%); 31-40 years old (n=84; 54.5%); general and senior officers (n=89; 57.8%); serve in units outside their branches (n=63; 40.9%). Again, the PoAF is the exception: most medical officers are women assigned to units within their branch (Table 6).

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<sup>7</sup> N=62<sub>Navy</sub>, 113<sub>Army</sub> and 65<sub>Air Force</sub>\*

<sup>8</sup> N=7<sub>Navy</sub>, 7<sub>Army</sub> and 3<sub>Air Force</sub>\*

**Table 6 – Descriptive analysis of the population and sample**

		Age				Gender		Rank		Place of service			
		under 30	31 to 40	41 to 50	over 51	Women	Men	Lt/Capt/Flt Lt and junior officers (S/Lt /2Lt/Fg Off, Mid/Off Cdr/Plt Off)	General officer or senior officer (RAdm/Maj Gen./AVM, Cdre/Brig/Air Cdre, Capt./Col/Gp Capt, Cdr/Lt Col/Wg Cdr, Lt Cdr/Maj/Sqn Ldr)	Civilian hospitals (applicable to resident physicians)	Branch Units/Corps /Services	Units outside the branch (HFAR, UEFISM, DIRSAM, IASFA)	
Universe	PoN	N=69	14	28	17	10	31	38	30	39	23	22	24
		% de N	20.3%	40.6%	24.6%	14.5%	44.9%	55.1%	43.5%	56.5%	33.3%	31.9%	34.8%
	PoA	N=120	15	76	19	10	33	87	56	64	36	39	45
		% de N	12.5%	63.3%	15.8%	8.4%	27.5%	72.5%	46.7%	53.3%	30%	32.5%	37.5%
	PoAF	N=68	9	32	19	8	37	31	28	40	15	30	23
		% de N	13.2%	47.1%	27.9%	11.8%	54.4%	45.6%	41.2%	58.8%	22.1%	44.1%	33.8%
	AAFF	N=257	38	136	55	28	101	156	114	143	74	91	92
		% de N	14.8%	52.9%	21.4%	10.9%	39.3%	60.7%	44.4%	55.6%	28.8%	35.4%	35.8%
Sample	PoN	n=40	6	18	15	1	18	22	19	21	12	14	14
		% de n	15%	45%	37.5%	2.5%	45%	55%	47.5%	52.5%	30%	35%	35%
	PoA	n=56	3	40	11	2	16	40	22	34	9	22	25
		% de n	5.4%	71.4%	19.6%	3.6%	28.6%	71.4%	39.3%	60.7%	16%	39.3%	44.7%
	PoAF	n=58	4	26	22	6	33	25	24	34	10	24	24
		% de n	6.9%	44.8%	37.9%	10.4%	56.9%	43.1%	41.4%	58.6%	17.2%	41.4%	41.4%
	AAFF	n=154	13	84	48	9	67	87	65	89	31	60	63
		% de n	8.4%	54.5%	31.2%	5.9%	43.5%	56.5%	42.2%	57.8%	20.1%	39%	40.9%
% N - FFAA			34.2%	61.8%	87.3%	32.1%	66.3%	55.8%	57%	62.2%	41.9%	65.9%	68.5%

Legend: Lieutenant (Lt); Sub lieutenant (SLt); Alferes (ALF); Brigadeiro-General (BGEN); Rear Admiral (RADM); Capitão (CAP); Commander (Cdr); Captain (Capt.); Lieutenant Commander (Lt Cdr.); Commodore (COM); Coronel (COR); Directorate of Military Health (DIRSAM); Hospital of the Armed Forces (HFAR); Armed Forces Social Action Institute (IASFA); Major (MAJ); Major-General (MGEN); Midshipman (MIDN); Tenente (TEN); Tenente-Coronel (TCOR); Military Health Education, Training and Research Unit (UEFISM).

Source: Navy Personnel Directorate (email, 13 March 2023), Human Resources Administration Department of the Army (emails, 8 March 2023), Air Force Personnel Directorate (email, 7 March 2023).

The response rates fell below 50% only in the group of physicians under 30 (n=13 ≈ 34.2% of N) and over 51 (n=9 ≈ 32.1% of N), as well as military personnel assigned to civilian hospitals (n=31 ≈ 41.9% of N).

The study also included key individuals identified in Table 7, selected for their explicit and interpretive knowledge, as well as their potential to influence decision making processes (Littig, 2009, pp.108-109).

**Table 7 – List of interviewees**

Code	Role	Name	Date	Format
I1	Director of Military Health and Social Services of the Directorate General for National Defence Resources	Dr. Nuno Caeiro	28-04-2023	Face to face
I2	Superintendent of Navy Personnel	Vice Admiral Soares Ribeiro	19-04-2023	Face to face
I3	Army Personnel Commander	Lieutenant General Teodoro Maio	28-04-2023	Email
I4	Air Force Personnel Commander	Air Marshal Eurico Craveiro	21-04-2023	Face to face
I5	Director of the Military Health Directorate	Air Vice-Marshal André Batista	01-05-2023	Videoconference
I6	Head of the Directorate of Health of the Navy	Captain Oliveira Anão	17-04-2023	Face to face
I7	Head of the Army Health Directorate	Brigadier Fazenda Branco	17-04-2023	Face to face
I8	Head of the Health Division of the Air Force	Air Commodore Pedro Reis	25-04-2023	Face to face

Procedure. After securing the necessary authorisations, the questionnaire was distributed to all military branches via Google Forms (from 23 February to 18 March 2023), with a brief introduction explaining the purpose and scope of the research and assuring participants that participation was anonymous and confidential.

The relevant offices were contacted to schedule the interviews and define the interview format (email, face to face or videoconference). All interviewees were informed about the study's nature and purpose before the interviews. Consent to be quoted was requested and assurances of anonymity were offered. All interviewees consented to being quoted and waived their right to anonymity.

### **3.2.2. Data collection instruments**

The questionnaire survey<sup>9</sup> (see Appendix A) was organised in five sections:

- Section I collected demographic and professional data (age, gender, branch, rank and place of service<sup>10</sup>).
- Section II assessed internal EA<sup>11</sup> using an adapted scale based on the work of Tanwar and Prasad (2017) and Nguyen e Nguyen (2021), with 33 items measured on a five

<sup>9</sup> The questionnaire was pre-tested with a small pilot group (n=25/N=257), allowing for necessary adjustments and adaptations to better fit the target context (Sarmiento, 2013, p. 95).

<sup>10</sup> For military physicians, the unit to which they are assigned is often different from the location where they work most of the time.

<sup>11</sup> From this point forward, all references to EA refer to internal EA.

- point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) (see Appendix B).
- Section III evaluated POS using a version of the Survey of Perceived Organizational Support scale originally developed by Eisenberger et al. (1986) and adapted and validated for the universe of Portuguese military physicians by Loureiro et al. (2023)<sup>12</sup>, based on the translation into Portuguese by Honório (2009) (validated for Portuguese AAFP personnel by Afonso, 2010). This section included 24 items, measured on a seven-point Likert scale, from Strongly Disagree (1) to Strongly Agree (7);
  - Section IV assessed TI using the Turnover Cognition scale developed by Bozeman and Perrewé (2001), adapted and validated for Portuguese military physicians by Braga and Fachada (2018). The scale consisted of five items rated on a seven point Likert scale, from Strongly Disagree (1) to Strongly Agree (7); To control for acquiescence bias, items 4.3, 4.4 and 4.5 were reverse worded and subsequently recoded prior to analysis to maintain the same directional relationship with the construct.
  - Section V assessed the PMP4.0 which military physicians find most relevant. Participants were asked to select six practices from a list of 18 practices identified in the literature review and adapted to the national context (see Appendix C). This section was optional.

The exploratory factor analysis and reliability assessments for the EA, POS and TI scales are presented in Appendix D.

Although the impact of Common Method Variance (CMV) is widely acknowledged in social science research, this study did not employ the Latent Common Factor Method (Podsakoff et al., 2003), as the methodological design already includes preventive measures to mitigate CMV without compromising the internal validity of the findings. Specifically, several procedural safeguards recommended in the literature (Podsakoff, MacKenzie, & Podsakoff, 2012) were implemented, including: (i) ensuring respondent anonymity, (ii) guaranteeing the confidentiality of responses, (iii) semantically reformulating items to avoid redundancy between independent and dependent variables, and (iv) alternating the order of scales throughout the questionnaire. Additionally, all constructs were measured using empirically validated scales with established psychometric properties, which, according to Conway and Lance (2010), reduces the risk of artificially inflated correlations due to the method of data collection. These measures ensured that the risks associated with CMV were sufficiently controlled, making the inclusion of a latent common method factor model unnecessary in this case.

Elite interviews (Littig, 2009, pp. 108–109) were conducted with political and military decision makers. An interview guide was developed to validate the proposed Strategic Guidelines (SG) for retaining military physicians by assessing each one in terms of Adequacy, Feasibility and Acceptability (AFA) (Ribeiro, 2017, pp.35-36).

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<sup>12</sup> Out of the 33 items in the scale adapted and validated by Loureiro et al. (2023), nine items (10, 11, 13, 14, 18, 23, 25, 28 and 29) with factor loadings <0.5 were excluded from the analysis.

### 3.2.3. Data analysis techniques

The questionnaire data (EA, POS, TI and PMP4.0) were analysed using descriptive and inferential statistical techniques with SPSS (Statistical Package for Social Sciences), version 28. Following Harpe (2015), who recommends treating Likert scale data as continuous, the mean scores of the variables were categorised according to Tinoco's (2021, p.16) classification:

- 5-point Likert scales: low,  $M < 3.0$ ; moderate,  $3.0 \leq M \leq 3.75$ ; and high,  $M > 3.75$ ;
- 7 point Likert scales:  $M < 4.0$ ; moderate,  $4.0 \leq M \leq 5.25$ ; and high,  $M > 5.25$ .

The SG were categorised using a method adapted from Sammut-Bonnici & Galea (2015) and Wehrich (1982), which involved cross-referencing the opportunities (strengths) and vulnerabilities (weaknesses) in military doctors' perceptions about the AAFP (in terms of EA, OS and TI) with the PMP4.0 they identify as most relevant.

The semi-structured interviews were analysed using descriptive and interpretative content analysis, as recommended by Sarmiento (2013, pp.53-66).

Finally, the SG were evaluated in terms of AFA, as outlined by Yarger (2006, p. 70).

## 4. Employer Attractiveness, Perceived Organisational Support and Turnover Intentions among Portuguese military physicians

This chapter contains the analysis of the questionnaire data and discusses the findings to assess EA, POS and TI among Portuguese military physicians, answering RQ1.

### 4.1. Mean scores and mean differences

#### 4.1.1. EA scale

The data in Table 8 indicates that the mean score for EA ( $M=3.05$ ;  $SD=0.630$ )<sup>13</sup> is moderate, falling within the mid-range of the scale<sup>14</sup>.

Table 8 – Mean scores for EA

		EA		EA1		EA2		EA3		EA4		EA5	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>Overall</b>		<b>3,05</b>	0,630	<b>3,88</b>	0,787	<b>2,78</b>	0,916	<b>1,57</b>	0,740	<b>2,37</b>	0,907	<b>2,85</b>	0,955
<b>Branch</b>	PoN	3.03	0.660	3.95	0.846	2.73	0.933	1.50	0.748	2.23	0.920	2.38	0.979
	PoA	2.89	0.593	3.70	0.737	2.71	0.889	<b>1.62</b>	0.752	2.04	0.738	2.77	0.831
	PoAF	<b>3.21</b>	0.614	<b>4.00</b>	0.772	<b>2.88</b>	0.938	1.57	0.704	<b>2.79</b>	0.894	<b>3.26</b>	0.890

<sup>13</sup> Mean (M); Standard Deviation (SD).

<sup>14</sup> Since the Likert scale ranges from 1 to 5, the midpoint of the scale is 3.

[Cont.]

Age	under 30	3.15	0.689	<b>4.15</b>	0.689	2.62	0.870	1.54	0.519	<b>3.00</b>	1.155	3.00	0.816
	31 to 40	2.93	0.597	3.81	0.814	2.63	0.847	1.45	0.648	2.25	0.848	2.73	0.998
	41 to 50	3.13	0.606	3.90	0.805	2.94	0.998	1.67	0.808	2.33	0.808	2.90	0.881
	over 51	<b>3.56</b>	0.726	4.00	0.500	<b>3.56</b>	0.725	<b>2.22</b>	1.093	2.78	1.202	<b>3.56</b>	0.882
Gender	Men	<b>3.15</b>	0.584	<b>3.99</b>	0.728	<b>2.99</b>	0.961	<b>1.64</b>	0.732	<b>2.54</b>	0.959	<b>3.10</b>	0.940
	Women	2.97	0.655	3.79	0.823	2.62	0.852	1.52	0.745	2.24	0.849	2.66	0.925
Rank	General or senior officer	<b>3.12</b>	0.580	<b>3.89</b>	0.775	<b>2.99</b>	0.872	<b>1.71</b>	0.829	2.37	0.817	<b>2.94</b>	0.896
	Lt/Capt/Flt Lt and junior officer	2.94	0.682	3.86	0.808	2.49	0.904	1.38	0.550	<b>2.37</b>	1.024	2.72	1.023
Place of service	Units outside their branch	3.06	0.619	3.76	0.797	<b>3.06</b>	0.914	<b>1.67</b>	0.783	2.27	0.919	2.81	0.913
	Branch units	<b>3.07</b>	0.660	<b>4.02</b>	0.748	2.70	0.908	1.53	0.791	2.35	0.799	<b>2.98</b>	0.948
	Civilian hospitals (resident physicians)	2.97	0.605	3.84	0.820	2.35	0.755	1.45	0.506	<b>2.61</b>	1.054	2.68	1.045

Further analysis of Table 8 reveals that the mean scores for EA vary according to: branch – higher (but at a moderate level) in the PoAF, (M=3.21; SD=0.614) and lower in the PoA (M=2.89; SD=0.593); age – higher (but moderate) in the ≥51 group (M=3.56; SD=0.726) and lower and below average in the group aged 31-40 (M=2.93; SD=0.597); gender – moderate and above average in women (M=3.15; SD=0.580); rank – moderate and above average in the group of higher-ranking officers (M=3.12; SD=0.580), and; place of service – higher and above average in physicians who work in their branches (M=3.07; SD=0.660) and lower and below average in those who work primarily in civilian hospitals (M=2.97; SD=0.605).

EA is well below the scale mid-range in the EA3 *Benefits\_and\_rewards subscale* (M=1.57; SD=0.740) and above it in the EA1 *Healthy\_work\_atmosphere\_and\_ethics subscale* (M=3.88; SD =0.787). In the EA2 *Work/life\_balance*, EA4 *Training\_and\_development* and EA5 *Promotion* dimensions, the mean scores were 2.78, 2.37 and 2.85, all low and slightly below the midpoint of the scale (Table 8).

The highest scores observed in the EA subscales (Table 8) were observed in:

- EA1 *Healthy\_work\_atmosphere\_and\_ethics*: PoAF physicians (M=4.00; SD=0.772); women (M=3.99; SD=0.728); medical officers <30 (M=4.15; SD=0.689); physicians serving in their branch (M=4.02; SD=0.748); higher ranking officers (M=3.89; SD=0.755);
- EA2 *Work/life\_balance*: PoAF physicians (M=2.88; SD=0.938); medical officers ≥51 (M=3.56; SD=0.725); general officers or senior officers (M=2.99; SD=0.872); women (M=2.99; SD=0.961); physicians assigned to units outside their branch (M=3.06; SD=0.914);
- EA3 *Benefits\_and\_rewards*: PoA physicians (M=1.62; SD=0.752); medical officers ≥51 (M=2.22; SD=1.093); higher-ranking officers (M=1.71; SD=0.829); women (M=1.64; SD=0.732); and physicians serving outside their branch (M=1.67; SD=0.783);

- EA4 *Training\_and\_development*: PoAF physicians (M=2.79; SD=0.894); medical officers <30 (M=3.00; SD=1.155); general officers or senior officers (M=2.37; SD=0.817); women (M=2.54; SD=0.959); physicians working in civilian hospitals (M=2.61; SD=1.054);
- EA5 *Promotion*: PoAF physicians (M=3.26; SD=0.890); medical officers ≥51 (M=3.56; SD=0.882); higher-ranking officers (M=2.94; SD=0.896); women (M=3.10; SD=0.940); physicians serving in units within their branch (M=2.98; SD=0.948).

The combined analysis of the data from Tables 8, 9 and E1 (Appendix E) reveals statistically significant differences in mean EA scores based on branch ( $t_{\text{PoA-PoAF}}=-19.491$ ;  $\alpha<0.05$ ) and age ( $t_{[31,40]e\geq 51}=-39.452$ ;  $\alpha<0.05$ ), which suggests that PoAF physicians perceive the AAF as more attractive (M=3.21; SD=0.614) than PoA physicians (M=2.89; SD=0.593), and that medical officers ≥51 find the organisation more attractive (M=3.56; SD=0.726) than those from 31-40 (M=2.93; SD=0.597).

No statistically significant differences were found between groups on the EA1 *Healthy\_work\_atmosphere\_and\_ethics* subscale.

Although no statistically significant differences were found between branches in the EA2 *Work/life\_balance* subscale, variations were observed across age groups ( $t_{<30e\geq 51}=-44.091$ ;  $\alpha<0.05$ ), gender ( $t_{\text{women-men}}=2245.5$ ;  $\alpha<0.05$ ), rank ( $t_{\text{sen.of.-jun.of.}}=3722.5$ ;  $\alpha<0.05$ ) and place of service ( $t_{\text{CivilianHospitals-OutsideBranch}}=-32.323$ ;  $\alpha<0.05$ ). In this dimension, women (M=2.99; SD=0.961) tend to perceive the organisation as more attractive than men (M=2.62; SD=0.852). A similar trend was also observed in the group of senior officers (M=2.99; SD=0.872) vs. junior officers (M=2.49; SD=0.904); older physicians (M=3.56; SD=0.725) vs. younger physicians (M=2.62; SD=0.870); physicians serving primarily in units outside their branch (M=3.06; SD=0.914) vs. physicians working predominantly in civilian hospitals (M=2.35; SD=0.755).

In the EA3 *Benefits\_and\_rewards* subscale, statistically significant differences were found only by rank ( $t_{\text{sen.of.-jun.of.}}=3452.5$ ;  $\alpha<0.05$ ). In this dimension, lower ranking officers perceive the AAF as less attractive (M=1.38; SD=0.550) compared to higher ranking officers (M=1.71; SD=0.829).

In the EA4 *Training\_and\_development* subscale, statistically significant differences were found only by branch ( $t_{\text{PoN-PoAF}}=25.509$ ;  $\alpha<0.05$ ) and ( $t_{\text{PoA-PoAF}}=-33.366$ ;  $\alpha<0.05$ ), with PoAF physicians (M=2.79; SD=0.894) reporting higher levels of perceived attractiveness than those in the PoN (M=2.23; SD=0.920) and the PoA (M=2.04; SD=0.738).

**Table 9 – Tests for differences in EA mean scores**

	Null hypothesis	Test	Sig. <sup>a,b</sup>
<b>Branch</b>	The distribution of EA scores is the same across Branch categories.	Kruskal-Wallis Test	0.028
	The distribution of EA1 scores is the same across Branch categories.		0.061
	The distribution of EA2 scores is the same across Branch categories.		0.456
	The distribution of EA3 scores is the same across Branch categories.		0.561
	The distribution of EA4 scores is the same across Branch categories.		<0.001
	The distribution of EA5 scores is the same across Branch categories.		<0.001
<b>Age</b>	The distribution of EA scores is the same across Age categories.	Kruskal-Wallis Test	0.017
	The distribution of EA1 scores is the same across Age categories.		0.539
	The distribution of EA2 scores is the same across Age categories.		0.016
	The distribution of EA3 scores is the same across Age categories.		0.082
	The distribution of EA4 scores is the same across Age categories.		0.053
	The distribution of EA5 scores is the same across Age categories.		0.094
<b>Gender</b>	The distribution of EA scores is the same across Gender categories.	Mann-Whitney U Test	0.076
	The distribution of EA1 scores is the same across Gender categories.		0.111
	The distribution of EA2 scores is the same across Gender categories.		0.010
	The distribution of EA3 scores is the same across Gender categories.		0.189
	The distribution of EA4 scores is the same across Gender categories.		0.052
	The distribution of EA5 scores is the same across Gender categories.		0.002
<b>Rank</b>	The distribution of EA scores is the same across Rank categories.	Mann-Whitney U Test	0.077
	The distribution of EA1 scores is the same across Rank categories.		0.893
	The distribution of EA2 scores is the same across Rank categories.		0.001
	The distribution of EA3 scores is the same across Rank categories.		0.021
	The distribution of EA4 scores is the same across Rank categories.		0.947
	The distribution of EA5 scores is the same across Rank categories.		0.165
<b>Place of service</b>	The distribution of EA scores is the same across Place of Service categories.	Kruskal-Wallis Test	0.738
	The distribution of EA1 scores is the same across Place of Service categories.		0.162
	The distribution of EA2 scores is the same across Place of Service categories.		0.002
	The distribution of EA3 scores is the same across Place of Service categories.		0.423
	The distribution of EA4 scores is the same across Place of service categories.		0.233
	The distribution of EA5 scores is the same across Place of Service categories.		0.284

a) Significance level: 0.050.

b) Asymptotic significance values are presented.

Non-parametric tests (Kruskal-Wallis test and Mann-Whitney U test) were used due to the ordinal nature of the EA scale (Marôco, 2014, p. 230).

In the EA5\_Promotion subscale, significant differences were found only in relation to gender ( $t_{\text{women-men}}=2095.5$ ;  $\alpha<0.05$ ), with women (M=3.10; SD=0.940) perceiving the organisation as more attractive than men (M=2.66; SD=0.925), and branch ( $t_{\text{PoN-PoAF}}=38.532$ ;  $\alpha<0.05$ ) and ( $t_{\text{PoA-PoAF}}=-22.546$ ;  $\alpha<0.05$ ). Similarly, PoAF physicians perceive the organisation as more attractive (M=3.26; SD=0.890) than those in the PoA (M=2.77; SD=0.831) and the PoN (M=2.38; SD=0.979).

#### 4.1.2. POS scale

The data in Table 10 reveal that, while generally low overall, POS is higher among PoAF physicians (M=3.98; SD=1.116) and lower among those in the PoN (M=3.28; SD=0.905) and PoA (M=3.29; SD=1.057). This trend is also observed in the POS1\_Personal\_support and POS2\_Professional\_support subscales. In terms of age, the highest (though still moderate) POS scores observed were for physicians  $\geq 51$  (M=4.56; SD=1.130), while the lowest were for those from 31-40 (M=3.31; SD=1.064). A similar trend was observed in the POS1\_Personal\_support and POS2\_Professional\_support subscales. Men reported lower POS (M=3.39; SD=1.103) than women (M=3.75; SD=1.049), and this difference also reflected in the POS1\_Personal\_support and POS2\_Professional\_support subscales. General officers and senior officers had the highest mean scores in POS (M=3.82; SD=1.071), POS1 (M=4.12; SD=1.085) and POS2 (M=3.24; SD=1.288).

Table 10 – POS mean scores

		POS		POS1		POS2	
		Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
<b>Overall</b>		<b>3.55</b>	1.091	<b>3.86</b>	1.146	<b>2.96</b>	1.283
<b>Branch</b>	PoN	3.28	0.905	3.63	0.897	2.70	1.224
	PoA	3.29	1.057	3.63	1.153	2.68	1.208
	PoAF	<b>3.98</b>	1.116	<b>4.24</b>	1.204	<b>3.41</b>	1.285
<b>Age</b>	under 30	3.46	0.967	<b>3.69</b>	1.182	3.08	1.382
	31 to 40	3.31	1.064	3.68	1.163	2.62	1.161
	41 to 50	3.79	1.031	4.02	0.978	3.29	1.288
	over 51	<b>4.56</b>	1.130	<b>4.89</b>	1.269	<b>4.22</b>	1.093
<b>Gender</b>	Women	<b>3.75</b>	1.049	<b>3.88</b>	1.038	<b>3.39</b>	1.267
	Men	3.39	1.103	3.84	1.228	2.63	1.202
<b>Rank</b>	General or Senior Officer	<b>3.82</b>	1.072	<b>4.12</b>	1.085	<b>3.24</b>	1.288
	Lt/Capt/Flt Lt and Junior Officer	3.17	1.009	3.39	1.134	2.58	1.184
<b>Place of service</b>	Units outside their branch	<b>3.71</b>	1.156	<b>4.02</b>	1.143	<b>3.11</b>	1.357
	Branch units	3.62	1.027	3.97	1.089	2.97	1.221
	Civilian hospitals (resident physicians)	3.06	0.964	3.32	1.137	2.65	1.226

POS scores vary by place of service, and tend to be higher among physicians working in military units outside their branch ( $M=3.71$ ;  $SD=1.156$ ) and lower in those who work predominantly in civilian hospitals ( $M=3.06$ ;  $SD=0.964$ ). This difference is also observed in the *POS1\_Personal\_support* and *POS2\_Professional\_support* subscales.

These findings echo those of Loureiro et al. (2023) regarding the overall mean POS scores ( $M=3.54$ ;  $SD=0.96$ ) and the trends observed in each category, with higher scores found among older physicians ( $M=4.39$ ;  $SD=0.47$ ), women ( $M=3.69$ ;  $SD=1.02$ ) and highest ranking physicians ( $M=3.71$ ;  $SD=1.01$ ). However, in the study by Loureiro et al. (2023), the highest POS scores were observed among physicians working within their branch ( $M=3.78$ ;  $SD=1.07$ ).

The POS score ( $M=3.55$ ;  $SD=1.091$ ) falls below the scale midpoint<sup>15</sup>, both in the personal ( $M=3.86$ ;  $SD=1.146$ ) and *professional* ( $M=2.96$ ;  $SD=1.283$ ) dimensions, and that overall POS levels are lower than those reported by Afonso (2010) in a military personnel sample ( $M=3.98$ ;  $SD=0.40$ ).

When analysed together, the data in Table 10, Table 11 and E2 (Appendix E) reveal statistically significant differences in mean POS scores by branch ( $t_{PoN-PoAF}=-26.988$ ;  $\alpha<0.05$ ) and ( $t_{PoA-PoAF}=-28.231$ ;  $\alpha<0.05$ ). PoAF physicians reported higher POS ( $M=3.98$ ;  $SD=1.116$ ) when compared to PoA physicians ( $M=3.29$ ;  $SD=1.057$ ) and PoN physicians ( $M=3.28$ ;  $SD=0.905$ ). The same significant differences were found in the *POS1\_Personal\_support* subscale ( $t_{PoN-PoAF}=21.719$ ;  $\alpha<0.05$ ) and ( $t_{PoA-PoAF}=-24.551$ ;  $\alpha<0.05$ ), with PoAF respondents ( $M=4.24$ ;  $SD=1.204$ ) reporting higher mean scores than those in the PoN ( $M=3.63$ ;  $SD=0.897$ ) and the PoA ( $M=3.63$ ;  $SD=1.153$ ), and in the *POS2\_Professional\_support* subscale ( $t_{PoN-PoAF}=23.945$ ;  $\alpha<0.05$ ) and ( $t_{PoA-PoAF}=-24.099$ ;  $\alpha<0.05$ ), with PoAF physicians ( $M=3.41$ ;  $SD=1.285$ ) reporting significantly higher mean scores than PoA physicians ( $M=2.68$ ;  $SD=1.208$ ) and PoN physicians ( $M=2.70$ ;  $SD=1.224$ ).

When analysed by age, statistically significant differences were found in the mean POS scores between the oldest and youngest groups ( $t_{<30\text{and}\geq 51}=-24.306$ ;  $\alpha<0.05$ ), with the latter reporting lower levels ( $M=3.46$ ;  $SD=0.967$ ) than the former ( $M=4.56$ ;  $SD=1.130$ ), and between the 41-50 and <30 groups ( $t_{41,50\text{and}<30}=-22.094$ ;  $\alpha<0.05$ ), the former also reporting higher mean scores ( $M=3.79$ ;  $SD=1.031$ ). In the *POS1\_Personal\_Support* subscale ( $t_{31,40\text{and}\geq 51}=-41.980$ ;  $\alpha<0.05$ ), older physicians had significantly higher mean scores ( $M=4.89$ ;  $SD=1.269$ ) than physicians aged 31-40 ( $M=3.68$ ;  $SD=1.163$ ). In the *POS2\_Professional\_support*, significant differences were found between physicians aged 31-40 and both older physicians ( $\geq 51$ ) and physicians aged 41-50, ( $t_{31,40\text{and}\geq 51}=-53.339$ ;  $\alpha<0.05$ ) and ( $t_{31,40\text{and}[41,50]}=-23.037$ ;  $\alpha<0.05$ ). The first group obtained lower mean scores ( $M=2.62$ ;  $SD=1.161$ ) than the other two groups ( $M=4.22$ ;  $SD=1.093$ ) and ( $M=3.29$ ;  $SD=1.288$ ).

As for gender, significant differences were also observed in overall POS and *POS2\_Professional\_support* subscale ( $t_{\text{men-women}}=2344.0$ ;  $\alpha<0.05$ ) and ( $t_{\text{men-women}}=1961.0$ ;  $\alpha<0.05$ ), with women reporting higher POS ( $M=3.75$ ;  $SD=1.049$ ) and *POS2* ( $M=3.39$ ;  $SD=1.267$ ) than men ( $M=3.39$ ;  $SD=1.103$ ) and ( $M=2.63$ ;  $SD=1.202$ ).

<sup>15</sup> Since the Likert scale ranges from 1 to 7, the midpoint of the scale is 4.

**Table 11 – Tests for differences in POS mean scores**

	Null hypothesis	Test	Sig. <sup>a,b</sup>
<b>Branch</b>	The distribution of POS scores is the same across Branch categories.	Kruskal-Wallis Test	<b>&lt;0.001</b>
	The distribution of POS1 scores is the same across Branch categories.		<b>0.005</b>
	The distribution of POS2 scores is the same across Branch categories.		<b>0.004</b>
<b>Age</b>	The distribution of POS scores is the same across Age categories.	Kruskal-Wallis Test	<b>0.002</b>
	The distribution of POS1 scores is the same across Age categories.		<b>0.016</b>
	The distribution of POS2 scores is the same across Age categories.		<b>&lt;0.001</b>
<b>Gender</b>	The distribution of POS scores is the same across Gender categories.	Mann-Whitney U Test	<b>0.031</b>
	The distribution of POS1 scores is the same across Gender categories.		0.725
	The distribution of POS2 scores is the same across Gender categories.		<b>&lt;0.001</b>
<b>Rank</b>	The distribution of POS scores is the same across Rank categories.	Mann-Whitney U Test	<b>&lt;0.001</b>
	The distribution of POS1 scores is the same across Rank categories.		<b>&lt;0.001</b>
	The distribution of POS2 scores is the same across Rank categories.		<b>0.002</b>
<b>Place of service</b>	The distribution of POS scores is the same across Place of Service categories.	Kruskal-Wallis Test	<b>0.010</b>
	The distribution of POS1 scores is the same across Place of Service categories.		<b>0.007</b>
	The distribution of POS2 scores is the same across Place of Service categories.		0.255

a) Significance level: 0.050.

b) Asymptotic significance values are presented.

Non-parametric tests (Kruskal-Wallis test and Mann-Whitney *U* test) were used due to the ordinal nature of the POS scale (Marôco, 2014, p. 230).

In the rank category, statistically significant differences were observed in the POS, POS1 *Personal support* and POS2 *Professional support* subscales ( $t_{sen.of.-jun.of.}=3917.5; \alpha<0.05$ ), ( $t_{sen.of.-jun.of.} =3846.5; \alpha<0.05$ ) and ( $t_{sen.of.-jun.of.}=3725.0; \alpha<0.05$ ), with senior officers reporting higher mean scores than junior officers.

Regarding place of service, statistically significant differences were found in POS ( $t_{CivilianHospitals-Branch}=-23.493; \alpha<0.05$ ) and ( $t_{CivilianHospitals-OutsideBranch}=-27.658; \alpha<0.05$ ). Physicians working primarily in civilian hospitals had lower scores ( $M=3.06; SD=0.964$ ) than those assigned to units within their branch ( $M=3.62; SD=1.027$ ) or outside their branch ( $M=3.71; SD=1.156$ ). This trend is also observed in the POS1 *Personal support* subscale, ( $t_{CivilianHospitals-Branch}=-25.690; \alpha<0.05$ ) and ( $t_{CivilianHospitals-OutsideBranch}=-28.207; \alpha<0.05$ ), with lowest mean scores recorded among physicians working in civilian hospitals ( $M=3.32; SD=1.137$ ).

#### 4.1.3. **TI scale**

An analysis of Table 12 shows that TI varied by: branch, highest (above average) in the PoN ( $M=4.13; SD=1.505$ ) and lowest (below average) in the PoA ( $M=3.09; SD=1.456$ ); age, highest (well above average) among physicians aged  $\geq 51$  ( $M=4.89; SD=1.364$ ) and lowest (below average) among those aged 31-40 ( $M=3.43; SD=1.475$ ); gender, higher (above average) among

women ( $M=4.09$ ;  $SD=1.495$ ) and lower (below average) among men ( $M=3.33$ ;  $SD=1.499$ ); rank, higher (above average) among junior officers ( $M=3.77$ ;  $SD=1.647$ ) and lower (below average) among senior officers ( $M=3.58$ ;  $SD=1.460$ ); and place of service, higher (well above average) among physicians working primarily in civilian hospitals ( $M=4.48$ ;  $SD=1.262$ ), and lower (below average) among those working in branch units ( $M=3.37$ ;  $SD=1.626$ ).

**Table 12 – Mean TI scores**

		IT	
		Mean	Standard Deviation
<b>Global</b>		<b>3.66</b>	1.539
<b>Branch</b>	PoN	<b>4.13</b>	1.505
	PoA	3.09	1.456
	PoAF	3.90	1.495
<b>Age</b>	under 30	4.77	1.739
	31 to 40	3.43	1.475
	41 to 50	3.54	1.429
	over 51	<b>4.89</b>	1.364
<b>Gender</b>	Women	<b>4.09</b>	1.495
	Men	3.33	1.499
<b>Rank</b>	General or Senior Officer	3.58	1.460
	Lt/Capt/Flt Lt and Junior Officer	<b>3.77</b>	1.647
<b>Place of service</b>	Units outside their branch	3.54	1.457
	Branch units	3.37	1.626
	Civilian hospitals (resident physicians)	<b>4.48</b>	1.262

The mean TI score for all groups ( $M=3.66$ ;  $SD=1.539$ ), while low, is still above the mid range of the scale<sup>16</sup>.

A combined analysis of Tables 12, 13 and E3 (Appendix E) reveals several statistically significant differences in TI, which suggest that Army physicians are less likely to leave the AAFP than those from other branches ( $t_{PoA-PoAF}=-22.376$ ;  $\alpha<0.05$ ) and ( $t_{PoA-PoN}=-30.702$ ;  $\alpha<0.05$ ), while no difference was found between PoN and PoAF physicians. TI among physicians aged 31-40 were significantly lower (below average) ( $M=3.43$ ;  $TI=1.475$ ) than among both older ( $t_{[31,40]and\geq 51}=-41.536$ ;  $\alpha<0.05$ ) and younger ( $t_{[31,40]and<30}=37.023$ ;  $\alpha<0.05$ ) officers, who reported higher and above-average TI scores. Women reported a higher intention to leave the AAFP compared to men, a difference that was statistically significant. Resident physicians who work primarily in civilian hospitals expressed a significantly greater desire to leave the military when compared with those serving in branch units ( $t_{CivilianHospitals-Branch}=32.301$ ;  $\alpha<0.05$ ) or units outside their branch ( $t_{CivilianHospitals-OutsideBranch}=27.865$ ;  $\alpha<0.05$ ).

<sup>16</sup> Since the Likert scale ranges from 1 to 7, the midpoint of the scale is 4.

**Table 13 – Tests for differences in TI mean scores**

Null hypothesis	Test	Sig. <sup>a,b</sup>
The distribution of TI scores is the same across Branch categories.	<i>Kruskal-Wallis</i>	<b>0.001</b>
The distribution of TI scores is the same across Age categories.	<i>Kruskal-Wallis</i>	<b>0.003</b>
The distribution of TI scores is the same across Gender categories.	<i>Mann-Whitney U test</i>	<b>0.002</b>
The distribution of TI scores is the same across Rank categories.	<i>Mann-Whitney U test</i>	0.395
The distribution of TI scores is the same across Place of Service categories.	<i>Kruskal-Wallis</i>	<b>0.003</b>

a) Significance level: 0.050.

b) Asymptotic significance values are presented.

Non-parametric tests (Kruskal-Wallis test and Mann-Whitney U test) were used due to the ordinal nature of the TI scale (Marôco, 2014, p. 230).

#### **4.2. Correlations between Employer Attractiveness, Perceived Organisational Support and Turnover Intentions**

Table E4 (Appendix E), shows positive and significant correlations (strong and moderate)<sup>17</sup> between:

- EA and POS ( $r=0.582$ ;  $p<0.01$ );
- EA and TI ( $r=0.468$ ;  $p<0.01$ );
- POS and TI ( $r=0.340$ ;  $p<0.01$ ).

These findings suggest a correlation between EA and TI, in line with Ambler and Barrow's (1996) findings, and between POS and TI, which is consistent with prior research (Eisenberger et al., 1986; Eisenberger, et al., 2002; Foong-Ming, 2008; Park, 2016; Rhoades & Eisenberger, 2002). Additionally, they suggest a potential link between how attractive the AAFF are perceived to be and the level of support military physicians feel they receive.

#### **4.3. Brief overview and answer to Subsidiary Question 1**

Having analysed the data, the answer to SQ1 – *How do military physicians perceive the Portuguese Armed Forces as an employer in terms of attractiveness, organisational support and their intention to stay or leave?* – is that the AAFF are attractive, albeit marginally, for all military physicians, with significant differences by: branch (perceptions of attractiveness are moderately stronger in the PoAF and lower in the PoA); and age, with physicians aged  $\geq 51$  perceiving the AAFF as moderately more attractive, compared to the 31-40 group. The only dimension that was rated highly is EA1 *Healthy work atmosphere and ethics*. In contrast, EA3 *Benefits and rewards* was described as unattractive by all military physicians, particularly by Lt/Capt/Flt Lt and junior officers, when compared to senior officers. The EA4 *Training and development* dimension received low overall ratings, with significant

<sup>17</sup> The correlation is: very strong if  $>0.8$ ; strong if  $[0.5;0.8]$ ; moderate if  $[0.3;0.5]$ ; modest if  $[0.1;0.3]$ ; weak if  $\leq 0.1$  (Cohen et al., 2007, p.521)

differences between branches and age levels, although PoAF physicians and physicians aged <30 perceived the AAF's attractiveness slightly more favourably. The EA2\_Work/life\_balance dimension was generally seen as unattractive, with only women, older officers (≥51) and physicians serving in units outside their branches finding it moderately attractive. The EA5\_Promotion dimension was also perceived as unattractive, with the exception of: women, PoAF physicians and physicians aged either <30 or ≥51, who rated it as moderately attractive.

POS was found to be generally low in overall terms and in the *personal* and *professional* support dimensions, with particularly low scores in the latter. Only physicians aged ≥51 reported moderate levels of organisational support in both areas. Overall, higher levels of perceived support were observed among PoAF physicians, women, higher ranking officers and older physicians. Conversely, resident physicians, particularly those working mostly in civilian hospitals, reported very low levels of organisational support, especially in the personal dimension.

While Turnover Intentions (TI) among physicians were low overall, some groups reported moderate TI, specifically: Navy physicians, physicians aged ≥51 or <30, women and physicians working in civilian hospitals (i.e. resident physicians). PoA physicians reported the lowest levels of TI when compared to their counterparts in the PoN or PoAF. The younger and older physicians groups are most likely to wish to leave the AAF, especially when compared to those in the 31-40 age group.

The analysis also revealed a strong positive correlation between EA and POS, as well as moderate correlations between EA and TI, and between POS and TI. These findings suggest that perceived organisational attractiveness and support influence each other and contribute to TI. This aligns with existing literature, which highlights that PMP that improve EA (Ambler & Barrow, 1996; Backhaus & Tikoo, 2004) and increase POS (Eisenberger et al., 2004; Rhoades & Eisenberger, 2002) also increase employee retention (Eisenberger et al., 1986; Eisenberger et al., 2002; Foong-Ming, 2008; Park, 2016; Rhoades & Eisenberger, 2002).

## 5. People Management Practices 4.0 relevant to military physicians

This chapter analyses and discusses the findings regarding the most selected PMP4.0 and provides the answer to SQ2.

### 5.1. Most relevant People Management Practices 4.0

Not all respondents completed the final section of the questionnaire, and, among those who did, some selected fewer than the six PMP requested. Out of a possible 924 responses (six PMP per participant), 844 were recorded (91.3%). The remaining 80 unselected options were interpreted as null responses, suggesting that no PMP were deemed relevant by those respondents.

Among the 18 proposed PMP4.0 (see Table 14 and Appendices A and C), the following were identified as the most relevant (listed in descending order of relevance), having been selected by more than 40% of respondents: PMP1 (84.4%), PMP4 (71.4%), PMP3 (63.6%), PMP9 (45.5%), PMP2 (42.9%), PMP11 (42.2%) and PMP5 (40.3%).

**Table 14 – PMP4.0 by order of relevance**

<b>People Management Practices</b>	<b>TOTAL (n=154)</b>	<b>% de n</b>
PMP1 - Salary supplements	130	<b>84.4%</b>
PMP2 - Special payments	66	<b>42.9%</b>
PMP3 - Accumulating functions	98	<b>63.6%</b>
PMP4 - Flexible working hours	110	<b>71.4%</b>
PMP5 - Part-time work options	62	<b>40.3%</b>
PMP6 - Possibility of working from home	30	19.5%
PMP7 - Competency-based promotion criteria	53	34.4%
PMP8 - Horizontal career progression	36	23.4%
PMP9 - Career planning	70	<b>45.5%</b>
PMP10 - Dual career path	13	8.4%
PMP11 - Incentives for training and development	65	<b>42.2%</b>
PMP12 - Mentorship programmes	6	3.9%
PMP13 - Childcare and activities for minors	25	16.2%
PMP14 - Quality and innovation initiatives	45	29.2%
PMP15 - Continuing service after retirement	12	7.8%
PMP16 - Career development and assessment mechanisms	10	6.5%
PMP17 - Humanitarian activities	10	6.5%
PMP18 - Environmental activities	3	1.9%

The data presented in Table 15 reveal that pay supplements and training and development incentives are the most relevant PMP for women and physicians <30. Special payments are also more appreciated by younger physicians, although men ranked this PMP highest. PMP4 (flexible working hours), PMP3 (accumulating functions) and PMP9 (career planning) were particularly relevant to men and those in older age groups. PMP5 (part-time work options) was most valued by men and by physicians aged 31–40.

When comparing preferences by gender, the six PMP women find most relevant are: PMP1(86.6%), PMP4(67.2%), PMP11(56.7%), PMP3(55.2%), PMP9(49.3%) and PMP7(35.8%), while men prefer PMP1(82.8%), PMP4(74.7%), PMP3(70.1%), PMP2(51.7%), PMP5(44.8%) and PMP9(42.5%). PMP1, PMP3 and PMP4 consistently appear among the top six choices across all age groups, as each was selected by more than 50% of respondents.

Table 15 – PMP4.0 by age and gender

PGP	Age								Gender			
	under 30 n=13	% of n	31 to 40 n=84	% of n	41 to 50 n=48	% of n	over 50 n=9	% of n	Women n=67	% of n	Men n=87	% of n
1	12	92.3%	72	85.7%	38	79.2%	8	88.9%	58	86.6%	72	82.8%
2	8	61.5%	42	50%	11	22.9%	5	55.6%	21	31.3%	45	51.7%
3	7	53.8%	54	64.3%	30	62.5%	7	77.8%	37	55.2%	61	70.1%
4	10	76.9%	64	76.2%	28	58.3%	8	88.9%	45	67.2%	65	74.7%
5	5	38.5%	35	41.7%	19	39.6%	3	33.3%	23	34.3%	39	44.8%
6	5	38.5%	19	22.6%	4	8.3%	2	22.2%	11	16.4%	19	21.8%
7	5	38.5%	25	29.8%	20	41.7%	3	33.3%	24	35.8%	29	33.3%
8	0	0%	14	16.7%	17	35.4%	5	55.6%	13	19.4%	23	26.4%
9	6	46.2%	41	48.8%	20	41.7%	3	33.3%	33	49.3%	37	42.5%
10	1	7.7%	7	8.3%	4	8.3%	1	11.1%	6	9.0%	7	8.0%
11	6	46.2%	34	40.5%	21	43.75%	4	44.4%	38	56.7%	27	31.0%
12	0	0%	3	3.6%	2	4.2%	1	11.1%	3	4.5%	3	3.4%
13	2	15.4%	10	11.9%	13	27.1%	0	0%	16	23.9%	9	10.3%
14	3	23.1%	20	23.8%	21	43.7%	1	11.1%	23	34.3%	22	25.3%
15	0	0%	5	5.9%	6	12.5%	1	11.1%	3	4.5%	9	10.3%
16	0	0%	6	7.1%	2	4.2%	2	22.2%	3	4.5%	7	8.0%
17	1	7.7%	5	5.9%	4	8.3%	0	0%	9	13.4%	1	1.1%
18	0	0%	2	2.4%	1	2.1%	0	0%	2	3.0%	1	1.1%

According to the data by branch (Table 16), PoN physicians showed the highest preference for PMP2, while PMP3, PMP4, PMP5 and PMP9 were most relevant to PoA physicians, and PMP1 and PMP11 to PoAF physicians. The six PMP most appreciated by MAR physicians were PMP1 (85%), PMP2 (50%), PMP3 (42.5%), PMP4 (70%), PMP7 (47.5%) and PMP9 (52.5%). PoA officers selected PMP1(78.6%), PMP2(46.4%), PMP3(73.2%), PMP4(76.8%), PMP5(44.6%) and PMP9(53.6%) as the most relevant, and PoAF officers chose PMP1(89.7%), PMP3(68.9%), PMP4 (67.2%), PMP5(37.9%), PMGP11(56.9%) and PMP14(36.2%).

When looking at overall preferences, PoN officers placed the highest value on the PMP related to special payments, while PoA officers favoured PMP that allowed them to accumulate functions, work part-time and/or have flexible working hours, and PMP related to career planning. PoAF physicians prioritised incentives for training and development as well as salary supplements.

**Table 16 – PMP4.0 by branch and rank**

PMP	Ramo						Posto			
	PoN n=40	% of n	PoA n=56	% of n	PoAF n=58	% of n	1TEN/CAP and Junior Officers n=65	% of n	General Officer or Senior Officer n=89	% of n
1	34	85.0%	44	78.6%	52	89.7%	56	86.2%	74	83.1%
2	20	50.0%	26	46.4%	20	34.5%	33	50.8%	33	37.1%
3	17	42.5%	41	73.2%	40	68.9%	40	61.5%	58	65.2%
4	28	70.0%	43	76.8%	39	67.2%	48	73.8%	62	69.7%
5	15	37.5%	25	44.6%	22	37.9%	28	43.1%	34	38.2%
6	7	17.5%	13	23.2%	10	17.2%	17	26.2%	13	14.6%
7	19	47.5%	23	41.1%	11	18.9%	20	30.8%	33	37.1%
8	9	22.5%	10	17.8%	17	29.3%	5	7.7%	31	34.8%
9	21	52.5%	30	53.6%	19	32.6%	27	41.5%	43	48.3%
10	6	15%	6	10.7%	1	1.7%	4	6.2%	9	10.1%
11	15	37.5%	17	30.4%	33	56.9%	28	43.1%	37	41.6%
12	3	7.5%	1	1.8%	2	3.5%	2	3.1%	4	4.5%
13	10	2.5%	5	8.9%	10	17.2%	9	13.8%	16	18.0%
14	8	20%	16	28.6%	21	36.2%	16	24.6%	29	32.6%
15	2	5%	5	8.9%	5	8.6%	2	3.1%	10	11.2%
16	2	5%	3	5.4%	5	8.6%	5	7.7%	5	5.6%
17	2	5%	3	5.4%	5	8.6%	3	4.6%	7	7.9%
18	1	2.5%	2	3.6%	0	0%	1	1.5%	2	2.2%

Higher ranking officers selected PMP related to accumulating functions and career planning as the most relevant, while lower ranking officers favoured PMP associated with salary supplements, special payments, flexible working hours, part-time options and incentives for training and development. The six PMP that higher ranking officers selected most often are PMP1 (83.1%), PMP4 (69.7%), PMP3 (65.2%), PMP9 (48.3%), PMP11 (41.6%) and PMP5 (38.2%). Lower ranking officers selected PMP1 (86.2%), PMP4 (73.8%), PMP3 (61.5%), PMP2 (50.8%), PMP11 (43.1%) and PMP9 (41.1%) as the ones they found most relevant (Table 17).

Additionally, Table 17 shows that resident physicians selected most often PMP1 (90.3%), PMP4 (71.0%), PMP3 (64.5%), PMP2 (58.1%), PMP11 (54.8%), PMP5 (41.9%) and PMP9 (41.9%). The group of physicians working primarily within their branch preferred PMP1(81.7%), PMP4(75%), PMP3(60%), PMP2(43.3%), PMP9(41.7%) and PMP11(40%), and physicians working predominantly in units outside their branch chose PMP1(84.1%), PMP4(68.7%), PMP3(66.7%), PMP9(50.8%), PMP5(41.3%) and PMP8(38.1%). Overall, the PMP that resident physicians selected the most are PMP1, PMP2 and PMP5, and PMP3. PMP9 and PMP11 are most relevant to physicians working in units outside their branch, and PMP4 to those working mostly within their branch.

Table 17 – PMP4.0 by place of service

PGP	Local onde presta serviço					
	Civilian hospitals n=31	% of n	Brach units n=60	% of n	Units outside their branch n=63	% of n
1	28	90.3%	49	81.7%	53	84.1%
2	18	58.1%	26	43.3%	22	34.9%
3	20	64.5%	36	60.0%	42	66.7%
4	22	71.0%	45	75.0%	43	68.3%
5	13	41.9%	23	38.3%	26	41.3%
6	9	29.0%	12	20.0%	9	14.3%
7	10	32.3%	23	38.3%	20	31.7%
8	1	3.2%	11	18.3%	24	38.1%
9	13	41.9%	25	41.7%	32	50.8%
10	2	6.5%	3	5.0%	8	12.7%
11	17	54.8%	24	40.0%	24	38.1%
12	1	3.2%	2	3.3%	3	4.8%
13	5	16.1%	8	13.3%	12	19.1%
14	9	29.0%	16	26.7%	20	31.7%
15	0	0%	4	6.7%	8	12.7%
16	3	9.7%	5	8.3%	2	3.2%
17	1	3.2%	8	13.3%	1	1.6%
18	0	0%	2	3.3%	1	1.6%

## 5.2. Brief overview and answer to Subsidiary Question 2

Based on the analysis of the data, the answer to SQ2, *How relevant are people management practices 4.0 to military physicians?* is that the most highly valued PMP among military physicians align with those described in the literature. These include aspects related to stability, respect (Pfeffer, 1994, 1997, cited in Rego et al., 2018, pp. 117-118), and work/life balance (Correio et al., 2021), all of which are PMP4.0 (Bonilla, 2019; Duarte et al., 2019) and represent the following EA dimensions:

- *Work/life balance*: PMP4, PMP5 and PMP9;
- *Benefits and rewards*: PMP1, PMP2 and PMP3;
- *Training and development*: PMP3 and PMP11;
- *Promotion*: PMP9.

Specifically, practices associated with *benefits and rewards* (PMP1 and PMP2) are particularly appreciated by younger, lower ranking physicians working primarily in civilian hospitals. PMP1 is more valued by women and PoAF officers, while PMP2 is more relevant to men and PoN officers. PMP9 (related to *promotion*) holds greater relevance for PoN and PoA physicians, women, physicians aged 31–40, higher ranking officers and those working mainly outside their branch. PMP3 (accumulating functions) is most appreciated by older physicians, higher ranking officers, men, PoA officers and physicians working in units outside their branch. PMP11 (incentives for training and education) is preferred by younger,

junior physicians, PoAF officers, women and physicians working mainly in civilian hospitals. PMP4 (flexible hours) and PMP5 (part-time options), both related to *work/life* balance, are more valued by men, lower ranking physicians and PoA officers. PMP4 is more commonly selected by physicians working in units within their branch, whereas PMP5 is preferred by those working in civilian hospitals.

Regarding POS, the most relevant PMP in the *professional* dimension are PMP1, PMP2, PMP3, PMP9 and PMP11. In the *personal* dimension, the most relevant practices are PMP4, PMP5 and PMP9. Again, a correlation was observed between the PMP which different groups find the most relevant and the type and level of support they perceive.

## 6. Strategies to improve retention among AAFF physicians

This chapter analyses opportunities and vulnerabilities in military physicians' perceptions about the AAFF based on the answers to SQ1 and SQ2, which cover EA, POS and TI. This data, combined with the PMP4.0 physicians find most relevant, were analysed to identify possible SG that may be implemented to address the challenges in retaining these officers. Following content analysis and an AFA assessment, a set of preliminary SG was identified, validated by elite interviewees and refined to ensure alignment with the organisation's structure and context, providing an answer to the RQ.

### 6.1. Proposed Strategic Guidelines (SG)

Based on military physicians' opinions/perceptions about the AAFF (analysed through EA, POS and TI) opportunities and vulnerabilities were identified (see Appendix F).

Given these findings, and based on the fact that, when PMP are tailored to employees' individual needs/preferences, organisations become more attractive and perceptions of support are higher (Ambler & Barrow, 1996; Backhaus & Tikoo, 2004; Eisenberger et al., 2002; Eisenberger et al., 2004; Park, 2016; Rhodes & Eisenberger, 2002), set of SG was outlined to improve the retention of military physicians (Table 18).

**Table 18 – Proposed SG**

<b>SG1</b>	Implementing PMP that enhance EA in terms of <i>Benefits and rewards</i> , where the AAFF are generally less attractive.	Awarding salary supplements (PMP1).
		Awarding special payments (PMP2).
		Allowing physicians to accumulate functions (PMP3).
<b>SG2</b>	Implementing PMP that enhance EA in terms of <i>Work/life balance, Promotion and Training and development</i> , tailored to the specific needs of each group of physicians depending on how attractive they find the AAFF and the PMP they find most relevant.	Allowing physicians to accumulate functions (PMP3).
		Introducing part time schedules (PMP5).
		Introducing flexible working hours (PMP4).
		Providing career planning (PMP9).
		Encouraging training and development (PMP11).

[Cont.]

<b>SG3</b>	Implementing PMP that enhance POS overall, especially in the <i>professional</i> dimension (PMP1; PMP2; PMP3; PMP9; PMP11), and, in the case of resident physicians, in the <i>personnel</i> dimension (PMP4; PMP5; PMP9).
<b>SG4</b>	When implementing PMP, focusing especially on resident physicians that report high levels of TI due to their potential contributions to the organisation.

## 6.2. Validation of the Strategic Guidelines

During the elite interviews, the following insights on the proposed SG were shared:

**SG1** – interviewees stated that SG1 “makes sense” (I4; I6), is “adequate” (I4; I7; I8) and “important” (I5). Pay supplements “would be an important factor in increasing EA” (I8) and, while they “would not solve the problem of retention, they could certainly help improve it” (I7). Furthermore, “salary enhancement would certainly have a positive impact” (I3). E. Craveiro highlighted that measures should “align with the career enhancement practices adopted in the National Health Service (SNS) [...] which often involve awarding salary supplements”. However, for S. Ribeiro “salary supplements and special payments are not the best approach” to improve EA3 *Benefits\_and\_rewards*, stating that authorising medical officers to accumulate roles would be more effective. Similarly, N. Caeiro emphasised that “although he recognises the importance of other career development initiatives [he acknowledges that] introducing supplements and allowances could effectively contribute to retention”. Authorising military physicians to accumulate roles is “a more viable solution” (I1) that should be “encouraged” (I8), “evaluated and granted upon request” (I6) and “evaluated, analysed and granted on a case-by-case basis” (I4). This measure “could significantly increase to retention, even more than salary supplements”. This PMP was recognised as having two advantages: it allows physicians to have more cases, a key factor in maintaining and updating skills that benefits both the individual and the organisation, while also enhancing remuneration (I1; I2; I3; I4; I7; E8).

Introducing salary supplements was regarded as “difficult to implement” (I1; I3; I6; I7), as it requires legislative changes at both ministerial and governmental levels (I3; I4; I6; I7; I8) and it would increase public spending (I1). A. Batista argued that while it may “prove more challenging, it would be feasible, and should be implemented in a balanced way”, adding that “in the AAFF, pay supplements already exist for certain roles”. N. Caeiro recalled that “in 1977, a supplement was introduced to equalise CMC salaries [...] but it was never implemented due to lack of legislation and funding”. With regard to PMP1, it was suggested that “ideally, there should be a global solution for all the AAFF [...] that does not target only military physicians [but instead] defines supplements tailored to the roles and specificities of all AAFF careers” (I6), and that this PMP should “be implemented across the board, to all branches and to all personnel within each branch” (I3), “based on clear and objective legal regulations” (I8). Allowing military physicians to accumulate roles was considered “more feasible” (I1; I3) and “easier to manage [because it is] an internal procedure” (I7) that is “already implemented” (I8) and, if handled “sensibly, [may help] reduce early departures” (I7). However, this measure should be “clearly legislated” (I6; I8) and “carefully considered [...] in terms of both the physician’s and the institution’s interests” (I4).

With regard to salary supplements, positive discrimination in favour of physicians is “not generally seen as problematic”, partly because similar benefits already exist for other professional categories within the AAFB (I7). As such, it “should be understood as a natural consequence of the specific demands of medical work” (I8), and may even be considered “a form of fairness” (I1). E. Craveiro believes that “implementing salary supplements would not be problematic [...] in fact, it would ensure fairness and align with the measures already being implemented in the SNS [and that] in the future, some form of differential pay will be necessary to recognise merit beyond job titles.” N. Caeiro asserted that “the more specialised the work is, and the more value it produces, [...] the more those professionals should be rewarded” and argued that, while this could “disrupt esprit de corps”, this effect could be minimised “by introducing clear distinctions [...] supported by legislation”. However, O. Anão cautioned that this approach might “threaten internal cohesion [within the AAFB and recommended that] “these supplements should be implemented across all AAFB branches, based on the specificities and needs of each career”, while S. Ribeiro argued that “non-medical personnel [will] inevitably perceive this as negative discrimination”. Regarding the possibility of accumulating roles, T. Maio emphasised the need for “balance, [warning that] in trying to solve retention issues [we must avoid creating] problems related to staff availability”. Nevertheless, implementing this SG “would not lead to tensions among physicians” (I7).

SG2 – Implementing tailored PMP that increase EA, particularly in the areas of *work/life* balance (PMP4, PMP5, PMP9), *promotion* (PMP9) and *training and development* (PMP3, PMP11), was assessed as reasonable and adequate (I4; I6; I7; I8), “important” (I5) and even “decisive” (I1). Moreover, “it would not be problematic if PMP are implemented [in a flexible way] that reflects what people value most [...] there are certain specificities that must be taken into account [therefore] flexibility in managing physicians should be nearly total, and there should be a centralised directive from DIRSAM outlining global goals, allowing each branch [to manage] its medical personnel in a cohesive manner, within reasonable and feasible limits, to ensure functional military health services” (I2). E. Craveiro highlighted that “wherever possible, within existing regulations, there is an effort to encourage this type of management practices, even if some are more viable than others”, stating that he did not object to tailoring them, “as long as they are compatible, adequate, fair and balanced [and align] with the needs and interests of both the service and the organisation”. While T. Maio also supported this approach, referring to it as “a good strategy [...] and while it would be appropriate if measures are not applied uniformly to all military specialities [...] creating tailored measures [even within the same profession] may not be the best approach [...] requiring careful consideration”.

Flexible working hours are generally viewed as both “inherent to the military condition” (I5; I6; I8) and “essential [...] in today’s context” (I4), and most interviewees were in favour of implementing this practice (I2; I3; I4; I6; I7; I8). However, A. Batista argued that he “does not consider it adequate” to make it a formal policy because “members of the military [for all intents and purposes] have no set schedule”. S. Ribeiro noted that, “in practice, implementing flexible working hours would have similar advantages as role accumulation, in other words, it would increase physicians’ remuneration and case load.

In contrast, part-time work was largely seen as “not acceptable” (I5). F. Branco asserted his disapproval of “part-time schedules” and T. Maio was not “enthusiastic” about this measure. E. Craveiro expressed “some reservations”, arguing that it would be “highly complex and not really feasible”, while P. Reis stated that part-time schedules “should not be permitted, as they conflict with the principle of permanent availability for duty”.

On the other hand, structured career planning was described as “very important” (I3; I4) and “fundamental” (I3; I6; I7). “Today, it makes sense [to pay] special attention” (I7) to this practice and implement it in a way that “fulfils the expectations [...] intentions, and motivations” (I6) of military physicians. It should help “bring predictability and transparency to human resource management [and that] Health Directorates play a key role in its implementation” (I3). E. Craveiro also considered this practice extremely relevant, “especially for military physicians [as it affects] not only their military career but, more importantly, their technical-medical career”.

Incentives for training and development were regarded as “relatively easy to implement” (I6) and “an added value” (I3), “indispensable” (I2), “extremely important and fundamental” (I7) and “essential” (I4; I7). It was emphasised that such initiatives should be “encouraged and tailored to individual preferences” (I6). S. Ribeiro highlighted the value of PhD degrees and suggested that “advanced qualifications should be rewarded in terms of financial incentives, as it entails a higher level of responsibility and commitment”. Similarly, E. Craveiro stressed that “the ability to specialise our knowledge should be encouraged [...] especially in areas of medicine [...] specific to the AAFV”. N. Caeiro mentioned the need for “a strong focus on education, specialisation and training [stating that military physicians should be] among the best in the country [...] contributing to mission success, whether in international operations [...] public service missions [or missions that] enforce state sovereignty”.

The following PMP were regarded as presenting implementation challenges: adopting flexible working hours may “be somewhat difficult, [as] we must adapt to the demands of each branch” (I7) and “service continuity must never be compromised” (I6); structured career planning is “often difficult to implement due to unexpected factors” (I7). P. Reis pointed out the need to “establish and clarify the legal or regulatory terms” under which SG2 may be implemented, and recommended that such regulations encompass “all [physicians from all] three military branches, but are also tailored to specific mission demands”. O. Anão mentioned that this SG should be “universally applied across the AAFV, [and that PMP must be adapted] not only to the needs of military physicians but also to the “expectations of the institution”, emphasising the “importance of creating a tailored solution [compatible] with the requirement of permanent availability for duty”. N. Caeiro recommended implementing SG2 through Article 168 of the EMFAR “by approving special legislation for Specialised Medical Personnel [that prioritises] education, specialisation and training, [ensures] a fair career progression process [and] greater flexibility in working arrangements by allowing physicians to accumulate functions”.

S. Ribeiro acknowledged that “there will always be risks in implementing flexible management practices for military physicians because non-medical personnel may feel

negatively discriminated". E. Craveiro also recognised that there are "cultural risks in implementing tailored PMP", but did not believe such risks would be a "significant problem" in the AAFE, as "the issue is not about the perception that some professionals receive more benefits, but rather about understanding that those benefits are a reflection of the responsibilities inherent to a given role". T. Maio warned that "the absence of a clear legal status and consistent legislation could lead to dissatisfaction, instability and arbitrariness".

SG3 – As the recommended PMP are the same as those included in the SG already discussed, implementing PMP that improve POS, both overall and in its *professional* and *personal* dimensions, was generally regarded as adequate (I1; I2; I3; I4; I5; I6; I7; I8) and described as "important" (I7) and "reasonable" (I6). O. Anão stressed that "POS should be prioritised [suggesting that] when one considers the demands of military service, it would even be ethical [to implement] PMP that improve POS". E. Craveiro noted that "PMP that increase POS [should] not compromise organisational balance and [the demands] of medical service provision". The AFA assessment of SG3 is similar to the SG already discussed, as it includes the same PMP.

SG4 – Regarding the implementation of PMP tailored specifically to resident physicians, one interviewee stated that "we should be mindful of everyone's needs, but especially those of younger doctors [because they are our future] medical corps, [therefore], we should listen to their concerns [and] create the conditions for them to perform their tasks in a satisfying way" (I7), providing "as much support as possible" (I6) "across all three branches" (I8). O. Anão highlighted that "giving our physicians a good start [...] is essential", a position supported by T. Maio and A. Batista. E. Craveiro agreed with the creation of "specific programmes for resident physicians", such as mentoring, a PMP which S. Ribeiro also considered extremely important.

"We must evolve and keep up with the social shifts driven by the new generations of professionals, [additionally, implementing this SG] would not imply structural changes [...] only adjustments to human resource management strategies" (I4). However, "adopting solutions tailored to specific groups [...] may not be the best approach to address [...] retention challenges" (I3).

Although E. Craveiro did not believe that "focusing on younger physicians would lead to disagreement among more senior personnel," other interviewees argued that, "to ensure stability, [...] fairness and equal opportunities for military physicians from all branches", this SG4 should target "not only one group of doctors, but all of them" (I7) "to ensure fairness [...] and provide balanced solutions" (I3).

### **6.3. Brief overview and answer to the Research Question**

Based on the above analysis and the content analysis of the interviews (Appendix G), SG1 was deemed an adequate strategy to enhance EA and improve retention among military physicians (75%). All respondents agreed that physicians should be allowed to accumulate functions (PMP3), while 75% also considered the introduction of salary supplements and special payments (PMP1; PMP2) to be adequate measures. Therefore, PMP3 would be feasible, while PMP1 and PMP2, which involve the direct allocation of financial benefits, were considered

more “challenging” and “complex” to implement, as such measures can only be determined by the government. Given these findings, SG1 was considered adequate by all respondents, with reservations regarding feasibility. Although SG1 was generally considered adequate – no significant risks were identified, as long as mission continuity is not compromised (87.5%) – some concerns were raised regarding a potential risk of inter-professional tensions. As a result, 25% of respondents suggested that this SG should be expanded to include all AAFF personnel.

While SG2 was considered partially adequate for improving EA and boosting retention (87.5%), specifically, PMP3, PMP9, and PMP11, there were reservations about the adequacy of PMP4 and PMP5. All respondents agreed that implementing SG2 is feasible. However, some participants stressed the importance of supporting legislation (12.5%) and acknowledged that PMP4, PMP5, and PMP9 could be difficult to implement (87.5%). As these PMP are not relevant to everyone, it was suggested that they could be applied on a case-by-case basis to sustain motivation (50%). Concerns were also raised about potential tensions if this SG were to focus solely on military physicians (37.5%), and some respondents argued that SG2 would only be acceptable if it were extended to all AAFF personnel (12.5%).

SG3, which in practice involves implementing the same PMP included in SG1 and SG2, was unanimously considered “generally adequate” and “partially feasible”, which is consistent with the assessments of the previous SG. However, 87.5% deemed its implementation acceptable, provided it did not compromise the AAFF mission. One interviewee (12.5%) argued that, for the measure to be acceptable, it should be extended to all members of the AAFF, and three respondents (37.5%) raised concerns about the potential for dissatisfaction among non-medical personnel.

Although SG4 was deemed “adequate” (87.5%) and “feasible” (100%), only 50% of interviewees found it acceptable. As a result, this SG was not sufficiently validated and was consequently abandoned.

Table 19 contains the validation assessment for the proposed Strategic Guidelines (SG) based on their alignment with the structure and context of the Armed Forces (AAFF), following the AFA assessment.

**Table 19 – SG validation**

	Adequate	Feasible	Acceptable	Validated
<b>SG1</b>	Partially	Partially	Partially	Partially
<b>SG2</b>	Partially	Partially	Partially	Partially
<b>SG3</b>	Partially	Partially	Partially	Partially
<b>SG4</b>	Yes	Yes	No	No

To achieve the general objective of this investigation – *To propose strategies to optimise the retention of military physicians in the Portuguese AAFF* – and to address the research question – *What strategies can be implemented to optimise the retention of military physicians in the Portuguese AAFF?* –, the following SG are proposed:

- Adjusting the legislation that governs the Medical-Military Career (CMM), revising Decree-Law No. 519/1977 of 17 December, as amended by Decree-Law No. 332/86 of 2 October, to allow the allocation of salary supplements and/or special payments.
- Approve requests to accumulate functions without compromising the AAFF mission.
- Allow military physicians to adjust their working hours, provided that the mission is not compromised.
- Develop career plans that balance military and technical aspects, aligning them with individual intentions, motivations, and expectations whenever possible.
- Provide incentives to training and development to improve specialised skills, tailored to individual needs and interests.

## 7. Conclusions

Over the past two decades, both in Portugal and in other NATO countries, there has been a noticeable decline in recruitment and an increasing difficulty in retaining highly qualified and specialised military personnel, particularly medical officers. This trend has contributed to a growing shortage of these professionals within the AAFF. Since 2010, 67 military physicians were discharged from the CS and 24 requested leave. This represents a high turnover rate across all three branches, which appears to be driven less by the financial costs (compensation) of leaving than by low professional expectations, weak emotional identification and low psychological commitment to the organisation.

Based on studies that found that TI are inversely correlated with EA and POS, as well as with effective PMP, this study assessed military medical officers perceptions about EA, OS and TI and identified the PMP that they find most relevant. By doing so, the study aimed to develop strategies that help retain these high-value assets in the AAFF.

To accomplish SO1 – *To assess military physicians' perceptions of the Portuguese AAFF in terms of employer attractiveness, organisational support and turnover intentions* –, the study addressed SQ1 through the administration of a self report questionnaire completed by 154 military physicians (60% of the total population). The quantitative analysis revealed that the AAFF are, overall, perceived as only marginally attractive. Among the EA dimensions, only EA1\_Healthy\_work\_atmosphere\_and\_ethics was rated as highly attractive. In contrast, EA3\_Benefits\_and\_rewards was consistently rated as unattractive by all respondents, particularly among younger physicians. The AAFF were considered generally unattractive in terms of EA4\_Training\_and\_Development, EA2\_Work/Life\_Personal\_balance and EA5\_Promotion, with statistically significant differences observed between groups. POS was low overall, both in the personal and professional dimensions, but especially in the latter. Notably, resident physicians reported especially low levels of perceived organisational support, particularly in the personal dimension. Although TI were generally low, the fact that some groups reported moderate TI scores is particularly concerning.

The study found a strong correlation between EA and POS, a moderate correlation between EA and TI, and a strong correlation between POS and TI. These findings align with

existing research and suggest that perceptions of organisational support and attractiveness influence both each other and TI.

To accomplish SO2 – *To assess the relevance of People Management Practices 4.0 for military physicians* –, data from the same questionnaire were used to analyse SQ2. The findings revealed that the most valued PMP, in descending order of importance, are: PMP1 (salary supplements), PMP4 – (flexible working hours), PMP3 (accumulating functions), PMP9 (career planning), PMP2 (special payments), PMP11 (incentives for training and development), PMP5 (part-time work options). These PMP are compatible with the PMP4.0 described in the literature to improve the following EA dimensions: EA2\_*Work/life\_balance* (PMP4, PMP5 and PMP9); EA3\_*Benefits\_and\_rewards* (PMP1, PMP2 and PMP3); EA4\_*Education\_and\_training*, (PMP3 and PMP11); and EA5\_*Promotion* (PMP9). Notably, PMP related to EA1\_*Healthy\_work\_atmosphere\_and\_ethics* were not selected by respondents because the AAFF are already perceived as highly attractive in this dimension. Instead, respondents prioritised PMP that address the dimensions they considered less attractive. The measures selected by the different groups were largely consistent with the areas they considered least attractive. As for POS, the PMP selected as most relevant by different groups also aligned with the type and level of organisational support those groups felt they were receiving.

The GO of this investigation – *To propose strategies to optimise the retention of military physicians in the Portuguese AAFF* – was accomplished by answering the RQ. Based on the strengths and weaknesses identified in military physicians' perceptions about the AAFF in terms of EA, OS and TI, and considering that, when PMP align with employees' needs and expectations, organisations tend to be perceived as more attractive and supportive, a set of SG was proposed to help increase retention. SG1 focuses on implementing PMP that increase EA in terms of *Benefits and rewards*, while SG2 aims to increase EA in terms of *Work/life balance, Promotion and Training and development* through measures tailored to the distinct groups of physicians, based on their perceptions of EA and preferred PMP. SG3 aims to improve POS, with particular emphasis on the *professional* dimension, while also addressing the *personal* dimension in the case of resident physicians. SG4 aims to implement PMP that are especially relevant to resident physicians.

Elite interviews were conducted, during which the four proposed SG were presented for validation. Following content analysis and an AFA assessment, an improved set of SG was proposed, adjusted to the operational and strategic context of the Portuguese AAFF:

- Adjusting the legislation that governs the Medical-Military Career (CMM), revising Decree-Law No. 519/1977 of 17 December, as amended by Decree-Law No. 332/86 of 2 October, to allow the allocation of salary supplements and/or special payments;
- Approve requests to accumulate functions without compromising the AAFF mission;
- Allow military physicians to adjust their working hours, provided that the mission is not compromised;
- Develop career plans that balance military and technical aspects, aligning them with individual intentions, motivations and expectations whenever possible;

- Provide incentives to training and development to improve specialised skills, tailored to individual needs and interests.

This investigation **advances practical knowledge** in its field by confirming that military physicians have low levels of POS and that TI levels are moderate, yet concerning, among certain groups within the sample. The findings show that these officers perceive the AAFF as only marginally attractive, particularly in terms of benefits and rewards. The study also reveals significant correlations between EA, POS and TI and identifies the most relevant PMP4.0 to these professionals. Additionally, a new 16 item scale to assess internal EA based on the Five Factor Model (5F) was developed and validated, providing a theoretical contribution to this field of knowledge.

The most important limitation stems from the use of self report questionnaires, which are susceptible to biases such as social desirability. However, the findings are largely in line with existing literature, which indicates that these biases did not compromise the robustness of the data.

To build on this study, **future research** could extend the analysis to the external organisational environment (threats and opportunities) and combine different demographic categories (branch, gender, age, rank and place of service) to define tailored PMP. Further studies involving military personnel from other specialties should also be conducted, applying the proposed EA scale and/or the two factor POS scale to further improve and validate these tools.

As for **practical recommendations**, decision makers in charge of planning and defining these policies should consider implementing the SG presented in this study. This would involve creating working groups with representatives from the Ministry of Defence, the EMGFA and the branches to determine how the proposed measures would be implemented.

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# APPENDICES

## Appendix A – Questionnaire for military physicians

### Military physicians in the Portuguese Armed Forces: retention strategies

As part of my individual research work for the General Officers Course on “Military physicians in the Portuguese Armed Forces: retention strategies”, I invite you to participate in this questionnaire.

Your input will help assess the relevance of **people management practices** in retaining military physicians in the Armed Forces, focusing on organisational attractiveness, perceived organisational support, and turnover intentions.

This questionnaire is anonymous, and all responses will be kept strictly confidential and used solely for this study. Thank you for your valuable cooperation!

Inês Godinho de Matos

**\*Mandatory**

#### Part 1 – Demographic and professional profile

Q1.1 Age? *Select one option only.*

under 30	<input type="checkbox"/>
31 to 40	<input type="checkbox"/>
41 to 50	<input type="checkbox"/>
over 51	<input type="checkbox"/>

Q1.2 Gender? *Select one option only.*

Female	<input type="checkbox"/>
Male	<input type="checkbox"/>

Q1.3 Branch? *Select one option only.*

Navy	<input type="checkbox"/>
Army	<input type="checkbox"/>
Air Force	<input type="checkbox"/>

Q1.4 Posto? *Select one option only.*

RAdm/Maj Gen/AVM, Cdre/Brig/Air Cdre, Capt/Col/Gp Capt, Cdr/Lt Col/Wg Cdr, Lt Cdr/Maj/Sqn Ldr	<input type="checkbox"/>
Lt/Capt/Flt Lt, S/Lt /2Lt/Fg Off, Mid/Off Cdt/Plt Off	<input type="checkbox"/>

Q1.5 Place of service? *Select one option only.*

Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA)	<input type="checkbox"/>
Branch units/corps/services	<input type="checkbox"/>
Civilian hospitals (applicable to resident physicians)	<input type="checkbox"/>

## Part 2 – Organisational Attractiveness

Please indicate the extent to which you agree or disagree with the following statements using a 5-point Likert scale, where 1 = Strongly Disagree and 5 = Strongly Agree.\*

*Select one option only*

	1	2	3	4	5
Q2.1 In general, the salary offered by my organisation is adequate.					
Q2.2 My organisation provides overtime pay/compensation.					
Q2.3 My organisation provides insurance coverage for employees and dependents.					
Q2.4 My organisation invests heavily in training and development of its employees.					
Q2.5 My organisation always organizes training programmes with content close to the actual needs of employees.					
Q2.6 Tenho possibilidade de conhecer várias partes do mundo trabalhando para a minha organização.					
Q2.7 My organisation communicates clear advancement path for its employees.					
Q2.8 My organisation offers diverse career opportunities.					
Q2.9 Promotion opportunities in my organisation are fair for all.					
Q2.10 My organisation has a professional development orientation for its employees (besides position development).					
Q2.11 My organisation provides autonomy to its employees to take decisions.					
Q2.12 My organisation offers the possibility to enjoy a group atmosphere.					
Q2.13 I have friends at work who are ready to share my work responsibilities in my absence.					
Q2.14 My organisation recognises me when I do good work.					
Q2.15 My organisation offers a relatively stress free work environment.					
Q2.16 My organisation offers prospects for higher positions.					
Q2.17 My organisation has a fair attitude towards employees.					
Q2.18 Employees are expected to follow all rules and regulations.					
Q2.19 My organisation is a humanitarian organisation that gives back to society.					
Q2.20 There is a confidential procedure to report misconduct at work.					
Q2.21 My organisation is an ethical organisation with high moral standards.					
Q2.22 My organisation is always concerned about environmental protection.					
Q2.23 My organisation provides flexible work hours.					
Q2.24 My organisation offers opportunity to work in teams.					
Q2.25 My organisation is a good reference for my future career.					
Q2.26 I am able to accomplish what is expected of me at work and in my personal life.					
Q2.27 I am happy with my work life balance.					
Q2.28 I am happy with the way I divide my attention between work and personal life.					
Q2.29 My organisation always has a harmonious coordination among group members.					
Q2.30 The time I spend with my family doesn't interfere with activities at work that could be helpful to my career.					
Q2.31 Tension and anxiety from my family life don't interfere with my ability to do my job.					
Q2.32 My organisation offers the possibility to work in a well-defined structure.					
Q2.33 Based on feedback from co-workers and family/friends, I effectively accomplish both my work and personal responsibilities.					

**Part 3 – Perceived Organisational Support**

Please indicate the extent to which you agree or disagree with the following statements using a 7-point Likert scale, where 1 = Strongly Disagree and 7 = Strongly Agree. \*

*Select one option only*

	1	2	3	4	5	6	7
3.1 My organisation values my contribution to its well-being.							
3.2 My organisation does not recognise any extra effort I make.							
3.3 My organisation takes my goals and values seriously.							
3.4 My organisation would be understanding if I had a prolonged absence due to illness.							
3.5 My organisation would ignore a complaint I raise.							
3.6 My organisation does not consider my interests when making decisions that affect me.							
3.7 My organisation is available to support me when I have a problem.							
3.8 My organisation genuinely cares about my well-being.							
3.9 My organisation is willing to go out of its way to help me perform at my best.							
3.10 My organisation would forgive a mistake on my part.							
3.11 My organisation offers few opportunities for career progression.							
3.12 Even if I did excellent work, my organisation wouldn't notice.							
3.13 My organisation would respond positively to a reasonable request to change my working conditions.							
3.14 My organisation is willing to help me when I need a special favour.							
3.15 My organisation cares about my job satisfaction.							
3.16 If given the chance, my organisation would take advantage of me.							
3.17 My organisation shows very little concern for me.							
3.18 My organisation values my opinions.							
3.19 My organisation is proud of the work I do.							
3.20 My organisation is more focused on achieving targets than on caring for me.							
3.21 My organisation is not concerned with rewarding me fairly.							
3.22 My organisation wants to assign me to roles that match my qualifications.							
3.23 My organisation tries to make my work as interesting as possible.							
3.24 My superiors are proud to have me in this organisation.							

**Part 4 – Turnover Intentions**

Please indicate the extent to which you agree or disagree with the following statements using a 7-point Likert scale, where 1 = Strongly Disagree and 7 = Strongly Agree. \*

*Select one option only*

	1	2	3	4	5	6	7
4.1 I intend to look for another job in the near future.							
4.2 I am actively searching for a job in another organisation.							
4.3 I do not plan to leave my current job.							
4.4 I am unlikely to seek employment in another organization next year.							
4.5 I am not currently considering leaving my job.							

**Part 5 – People management practices**

Please evaluate the following People Management Practices and select only the six (6) most relevant to you.

5.1 Provision of salary supplements (e.g: fixed supplements based on medical officer rank or specialty; compensation for “inconvenient” working hours (e.g., emergency shifts); supplement for certain medical specialties: hyperbaric and underwater medicine, field medicine, aeromedical evacuations and aviation medicine; supplementary pay for participation in operational missions abroad.	
5.2 Provision of special payments to cover (e.g.: membership fees for the Portuguese Medical Association and relevant Specialty Colleges; certification costs for specialties, sub-specialities and Technical Competences recognised by the Portuguese Medical Association and deemed strategically important to the AAFP; bonuses for holding the title of Consultant in the Civilian Medical Career; holding a Master’s or a PhD in fields of particular relevance to the AAFP).	
5.3 Formal authorisation to accumulate functions in public/private hospitals or universities, provided these do not interfere with the primary mission of the Armed Forces.	
5.4 Possibility of adopting flexible working hours, in coordination with the chain of command and without compromising mission readiness.	
5.5 Option to work part-time, with proportional salary adjustment.	
5.6 Option to perform part of the regular duties remotely (telework).	
5.7 Formal recognition of all relevant medical, operational, and leadership skills in promotion assessments.	
5.8 Option to choose a horizontal career path.	
5.9 Timely and participatory career planning processes.	
5.10 Access to career development programmes tailored to different career stages (more “active” roles early in careers, and more “sedentary” roles later).	
5.11 Provision of time and financial support for continuous training and/or development, including courses/training programmes/congresses, both domestically and internationally.	
5.12 Creation of a mentorship programme to facilitate vertical communication, integration, acculturation and personal and career development.	
5.13 Development of on-site kindergartens and/or activity programmes for children during school holidays.	
5.14 Investment in workplace quality and innovation, making roles more stimulating and technically enriching.	
5.15 Opportunity for retired medical officers to continue serving, with access to the same salary supplements and special incentives.	
5.16 Implementation of formal and regular mechanisms to assess individual motivations, needs and/or priorities in terms of personal and professional development.	
5.17 Opportunity to participate in humanitarian activities that reinforce the Armed Forces’ image as a socially responsible institution (on a voluntary and extra-mission basis).	
5.18 Opportunity to take part in environmental initiatives that reinforce the Armed Forces’ image as an environmentally responsible institution (during working hours and in coordination with the chain of command, on a voluntary and extra-mission basis).	



[Cont.]

			I manage demands between my work life and personal life.		
			I am able to balance the demands of my work and personal life.		
		Dimension – Behaviour-based family interference with work	The behaviours that work for me at home do seem to be effective at work.		
			Behaviour that is effective and necessary for me at home would be effective at work.		
			The problem solving behaviour that work for me at home does seem to be as useful at work.		
			The behaviours I perform that make me effective at work help me to be a better parent and spouse.		
			Behaviour that is effective and necessary for me at work would be effective at home.		
			The problem solving behaviours I use in my job are effective in resolving problems at home.		
			Based on feedback from co workers and family/friends, I effectively accomplish both my work and personal responsibilities.		
		Dimension – Time-based work interference with family	The time I must devote to my job keeps me from participating equally in household responsibilities and activities.		
			My work doesn't keep me from my family activities more than I would like.		
			I don't have to miss family activities due to the amount of time I must spend on work responsibilities.		
			The time I spend on family responsibilities doesn't interfere with my work responsibilities.		
			The time I spend with my family does not interfere with activities at work that could be helpful to my career.		
					Tension and anxiety from my family life don't interfere with my ability to do my job.

[Cont.]

Functional dimension	Dimension – Training and development	Dimension – Strain-based family interference with work	Because I am often stressed from family responsibilities, I have a hard time concentrating on my work.	Dimension – Training/Developmentnet	Dimension – Strain-based family interference with work				
			Tension and anxiety from my family life don't interfere with my ability to do my job.						
			In spite of stress at home, I am not often preoccupied with family matters at work.						
		My organisation provides us online training courses.	My organisation provides us training courses.		My organisation invests heavily in training and development of its employees.				
		My organisation organises various conferences, workshops and training programmes on a regular basis.	My organisation invests heavily in training and development of its employees.		My organisation always organizes training programmes with content close to the actual needs of employees.				
		My organisation offers opportunities to work on foreign projects.	My organisation organises various conferences, workshops and training programmes on a regular basis.		My organisation has a professional development orientation for its employees (besides position development).				
		My organisation invests heavily in training and development of its employees.	My organisation always organises many annual trainings for its employees.		My organisation offers diverse career opportunities.				
		Skill development is a continuous process in my organisation.	My organisation always organizes training programmes with content close to the actual needs of employees.		My organisation offers the possibility to see a lot of the world.				
		My organisation communicates clear advancement path for its employees.	Dimension – Promotion		Dimension – Training/Developmentnet	My organisation always organises high quality training programmes for employees.	My organisation communicates clear advancement path for its employees.	My organisation communicates clear advancement path for its employees.	My organisation offers diverse career opportunities.
						My organisation always organises many forms of training (internal, external, on the job, etc.) for employees.	My organisation offers prospects for higher positions.	My organisation offers prospects for higher positions.	My organisation offers prospects for higher positions.
	My organisation offers diverse career opportunities.			My organisation offers diverse career opportunities.		My organisation offers diverse career opportunities.			
	My organisation offers the possibility to build a career.			My organisation offers the possibility to build a career.		My organisation offers the possibility to build a career.			
	Good reference for your future career.			Good reference for your future career.		Good reference for your future career.			
	Promotion opportunities in my organisation are fair for all.			Promotion opportunities in my organisation are fair for all.		Promotion opportunities in my organisation are fair for all.			
	The positions and opportunities for promotion greatly abound in my organisation.								

[Cont.]

Economic dimension	Dimension – Benefits/Rewards	In general, the salary offered by my organisation is high.	Dimension – Benefits/Rewards	In general, the salary offered by my organisation is adequate.	
		My organisation provides overtime pay/compensation.		My organisation provides overtime pay/compensation.	
		My organisation provides good health benefits.		My organisation provides insurance coverage for employees and dependents.	
		My organisation provides insurance coverage for employees and dependents.			
	Dimension – Ethics/corporate social responsibility	Dimension – Travel opportunities	My organisation has a professional development orientation for its employees (besides position development).	Dimension – Ethics/corporate social responsibility	My organisation has a fair attitude towards employees.
			My organisation offers the possibility to do a lot of foreign assignments.		Employees are expected to follow all rules and regulations.
			My organisation offers the possibility to travel a lot.		Humanitarian organisation gives back to the society.
		Dimension – Corporate social responsibility	My organisation offers the possibility to see a lot of the world.		Ethical organisation with high moral standards.
			My organisation provides insurance coverage for employees and dependents.		My organisation offers the possibility to work in a well defined structure.
			Humanitarian organisation gives back to the society.		My organisation always obeys the law.
Dimension – Corporate social responsibility	Dimension – Corporate social responsibility	Ethical organisation with high moral standards.	Dimension – Ethics/corporate social responsibility	There is a confidential procedure to report misconduct at work.	
		My organisation offers the possibility to work in a well defined structure.		Ethical organisation with high moral standards.	
		My organisation always obeys the law.		My organisation offers the possibility to work in a well defined structure.	
		My organisation is always concerned about environmental protection.		My organisation is always concerned about environmental protection.	
Dimension – Corporate social responsibility	Dimension – Corporate social responsibility	My organisation builds and requires employees to adhere to the cultural principle of conduct in their work and life.	Dimension – Ethics/corporate social responsibility	My organisation is always concerned about the benefit of our customers.	
		My organisation is always concerned about the benefit of our customers.		My organisation is always concerned about the material life of its employees.	
		My organisation is always concerned about the material life of its employees.			

Legend: The most relevant items in the Tanwar & Prasad scale (2017) are highlighted in green, the most relevant items in the Nguyen & Nguyen scale (2021) are highlighted in turquoise and the most relevant items common to both scales are highlighted in yellow.

Source: Prepared from Nguyen & Númen (2021) and Tanwar & Prasad (2017).

## Appendix C – Development of the list of People Management Practices 4.0

People Management Practices	
1	Provision of salary supplements (e.g: fixed supplements based on medical officer rank or specialty; compensation for “inconvenient” working hours (e.g., emergency shifts); supplement for certain medical specialties: hyperbaric and underwater medicine, field medicine, aeromedical evacuations and aviation medicine; supplementary pay for participation in operational missions abroad.
2	Provision of special payments to cover (e.g.: membership fees for the Portuguese Medical Association and relevant Specialty Colleges; certification costs for specialties, sub-specialities and Technical Competences recognised by the Portuguese Medical Association and deemed strategically important to the AAFF; bonuses for holding the title of Consultant in the Civilian Medical Career; holding a Master’s or a PhD in fields of particular relevance to the AAFF).
3	Formal authorisation to accumulate functions in public/private hospitals or universities, provided these do not interfere with the primary mission of the Armed Forces.
4	Possibility of adopting flexible working hours, in coordination with the chain of command and without compromising mission readiness.
5	Option to work part-time, with proportional salary adjustment.
6	Option to perform part of the regular duties remotely (telework).
7	Formal recognition of all relevant medical, operational, and leadership skills in promotion assessments.
8	Option to choose a horizontal career path.
9	Timely and participatory career planning processes.
10	Access to career development programmes tailored to different career stages (more “active” roles early in careers, and more “sedentary” roles later).
11	Provision of time and financial support for continuous training and/or development, including courses/training programmes/congresses, both domestically and internationally.
12	Creation of a mentorship programme to facilitate vertical communication, integration, acculturation and personal and career development.
13	Development of on-site kindergartens and/or activity programmes for children during school holidays.
14	Investment in workplace quality and innovation, making roles more stimulating and technically enriching.
15	Opportunity for retired medical officers to continue serving, with access to the same salary supplements and special incentives.
16	Implementation of formal and regular mechanisms to assess individual motivations, needs and/or priorities in terms of personal and professional development.
17	Opportunity to participate in humanitarian activities that reinforce the Armed Forces’ image as a socially responsible institution (on a voluntary and extra-mission basis).
18	Opportunity to take part in environmental initiatives that reinforce the Armed Forces’ image as an environmentally responsible institution (during working hours and in coordination with the chain of command, on a voluntary and extra-mission basis).

Source: Prepared from Branco (2018), Correio et al. (2021), NATO (2012) and Pfeffer (1994, 1997, cited in Rego et al., 2018, p.117-118).

## Appendix D – Factor analysis and scale reliability

### Exploratory Factor Analysis (EFA)

The EFA was conducted using principal component analysis (PCA) with Varimax rotation (factors with loadings below <0.5 were excluded). The Kaiser-Meyer-Olkin (KMO)<sup>18</sup> measure was used to assess the sample's adequacy for EFA and Bartlett's Test of Sphericity (BTS) was applied to determine whether the variables were correlated within the population.

EA. The analysis yielded 16 items distributed across five factors (5F)<sup>19</sup> (EA\_Healthy\_work\_atmosphere\_and\_ethics; EA2\_Work/life\_balance; EA3\_Benefits\_and\_rewards; EA4\_Training\_and\_development; EA5\_Promotion), which explained 72.01% of the total variance, with a strong KMO value (0.83) and a significant Bartlett's Test ( $X^2=1201.99$ ,  $p<0.0001$ ) (Table D1).

**Table D1 –EFA results for EA**

KMO and Bartlett's Test					
Kaiser-Meyer-Olkin measure of sampling adequacy					<b>0.827</b>
Bartlett's test of sphericity	Approx. Chi-Square				<b>1201.995</b>
	df				120
	Sig.				<b>&lt;0.001</b>
Pattern matrix <sup>a</sup>					
Item	Factor				
	1	2	3	4	5
2.24	.662	-.083	.119	.074	-.059
2.19	.651	-.053	-.151	-.159	-.041
2.12	.595	-.084	.025	.074	-.214
2.6	.587	.141	.121	-.174	-.014
2.18	.541	.001	-.011	-.060	.078
2.28	-.114	-.932	.049	-.051	-.051
2.27	-.078	-.867	.118	-.069	-.056
2.26	-.003	-.786	.078	.019	.049
2.33	.246	-.589	-.135	-.003	-.006
2.2	.060	-.082	.729	.046	.047
2.1	-.007	.005	.625	-.105	-.107
2.4	-.029	-.010	-.012	-.931	-.016
2.5	.111	-.057	.036	-.769	.054
2.10	.119	-.051	.068	-.546	-.173
2.16	.096	.000	.010	.107	-.926
2.9	-.054	-.042	.051	-.206	-.613

Extraction method: Principal Axis factoring. Rotation method: Oblimin with Kaiser Normalisation  
a. Rotation converged in 10 iterations

<sup>18</sup> KMO is considered: excellent if [0.9; 1.0]; good if [0.8; 0.9]; moderate if [0.7; 0.8]; mediocre if [0.6; 0.7]; poor but acceptable if [0.5; 0.6], and; unacceptable if  $\leq 0.5$  (Marôco, 2010, p.368).

<sup>19</sup> This solution is consistent with the factor structure proposed by Tanwar & Prasad (2017).

Total variance explained							
Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings <sup>a</sup>
	Total	% of variance	% cumulative	Total	% of variance	% cumulative	Total
1	5.502	34.386	34.386	5.139	32.121	32.121	3.294
2	2.270	14.185	48.570	1.963	12.269	44.390	3.499
3	1.523	9.516	58.086	1.063	6.643	51.033	1.985
4	1.233	7.703	65.790	.967	6.043	57.076	3.114
5	.995	6.217	<b>72.007</b>	.569	3.553	60.630	2.654

Extraction method: Principal Axis factoring.

a. When factors are correlated, the squared loadings cannot be summed to calculate the total variance.

POS. The analysis identified 13 items distributed across two factors (2F): (POS1\_*Personal support* and POS2\_*Professional support*), which explained 59.56% of the total variance, with an excellent KMO value (0.91) and a significant Bartlett's Test ( $X^2=1022.39$ ,  $p<0.0001$ ) (Table D2). The bifactor solution adopted for exploratory purposes is different from the unifactorial structure of the original scales proposed by Eisenberger et al. (1986), Honório (2009), Afonso (2010) and Loureiro et al. (2023). This approach was justified by the identification of distinct clusters of items: one related to perceived personal support and the other to perceived professional support.

**Table D2 –EFA results for POS**

KMO and Bartlett's Test			
Kaiser-Meyer-Olkin measure of sampling adequacy			<b>0.908</b>
Bartlett's test of sphericity	Approx. Chi-Square		<b>1022.387</b>
	df		78
	Sig.		<b>&lt;0.001</b>
Pattern matrix <sup>a</sup>			
Item	Factor		
	1	2	
3.7	0.873	0.040	
3.10	0.726	0.085	
3.24	0.688	0.069	
3.14	0.679	-0.125	
3.19	0.663	-0.064	
3.4	0.607	-0.006	
3.8	0.604	-0.322	
3.13	0.574	-0.224	
3.6	0.107	0.748	
3.17	-0.218	0.676	
3.20	0.042	0.626	
3.21	-0.113	0.608	
3.16	-0.182	0.606	

Extraction method: Principal Axis factoring.

a. Rotation converged in 5 iterations

Total variance explained						
Factor	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	% cumulative	Total	% of variance	% cumulative
1	6.247	48.055	48.055	5.798	44.602	44.602
2	1.495	11.504	<b>59.559</b>	0.985	7.580	52.182

TL. A 1F<sup>20</sup> solution was obtained with five items, which explained 73.18% of the total variance, with a good KMO value (0.86) and a significant Bartlett's Test ( $X^2 = 509.811$ ,  $p < 0.0001$ ) (Table D3).

**Table D3 – EFA results for TI**

Teste de KMO e Bartlett		
Kaiser-Meyer-Olkin measure of sampling adequacy		<b>0.858</b>
Bartlett's test of sphericity	Approx. Chi-Square	<b>509.811</b>
	gl	10
	Sig.	<b>0.000</b>
Factor matrix <sup>a</sup>		
Item	Factor	
	1	
4.5	0.927	
4.1	-0.836	
4.3	0.816	
4.4	0.776	
4.2	-0.719	

Extraction method: Principal Axis factoring.

a. 1 factor extracted. 6 iterations required.

Total variance explained						
Factor	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	% cumulative	Total	% of variance	% cumulative
1	3.659	73.180	<b>73.180</b>	3.343	66.857	66.857

#### Reliability

To evaluate the internal consistency of the EA, POS and TI scales, Cronbach's alpha ( $\alpha$ ) was calculated, following Hill and Hill's (2002) classification<sup>21</sup>.

EA. The scale obtained an  $\alpha = 0.87$  and the five subscales obtained an  $\alpha$  between 0.66 and 0.88, (ranging from weak to good) (Tables D4 and D5). In general, the findings are consistent with those obtained by

<sup>20</sup> This factor structure is consistent with the solutions proposed by Bozeman and Perrewé (2001) and Braga and Fachada (2018).

<sup>21</sup>  $\alpha$  coefficient is considered: unacceptable if  $< 0.6$ ; weak if  $[0.6; 0.7]$ ; reasonable if  $[0.7; 0.8]$ ; good if  $[0.8; 0.9]$ ; and; excellent if  $\geq 0.9$  (Hill and Hill, 2002, p.149).

Tanwar and Prasad (2017) in five dimensions ( $\alpha$ : 0.72–0.90) and by Nguyen and Nguyen (2021) in ten dimensions ( $\alpha$ : 0.79–0.92).

**POS.** The scale obtained an  $\alpha=0.91$  and the subscales obtained  $\alpha$  of 0.89 and 0.82 (Tables D4 and D6), which are considered, excellent and good, respectively, and which are consistent with the results obtained by Eisenberger et al. (1986) ( $\alpha=0.97$ ), Honório (2009) ( $\alpha=0.96$ ), Afonso (2010) ( $\alpha=0.94$ ) and Loureiro et al. (2023) ( $\alpha=0.95$ ).

**TI.** An  $\alpha=0.82$  was obtained (Tables D4 and D7), which is considered good and is consistent with the results obtained by Bozeman and Perrewé (2001) and Braga and Fachada (2018) (0.90 and 0.85, respectively).

**Table D4 - Internal Consistency of the EA, POS and TI scales**

Scale		Number of Items	Cronbach's Alpha
<b>EA</b>		16	0.87
	EA1 - Healthy work atmosphere and ethics	5	0,79
	EA2 - Work/life balance	4	0,88
	EA3 - Benefits and rewards	2	0,66
	EA4 - Training and development	3	0,85
	EA5 - Promotion	2	0,78
<b>POS</b>		13	0.91
	POS1 - Personal support	8	0,89
	POS2 - Professional support	5	0,82
<b>TI</b>		5	0.82

**Table D5 – Internal consistency results for EA**

Reliability statistics for EA					
Cronbach's Alpha		Number of items			
0.870		16			
Item-total statistics					
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha if item excluded
2.6	38.64	73.368	.478	.423	.865
2.12	38.04	74.299	.562	.457	.860
2.18	37.44	77.725	.356	.291	.869
2.19	37.90	74.716	.534	.493	.861
2.24	38.09	73.011	.555	.449	.860
2.26	39.24	75.661	.474	.608	.864
2.27	39.32	73.188	.604	.839	.858
2.28	39.32	73.565	.562	.846	.860
2.33	38.49	75.441	.487	.416	.863
2.1	39.93	78.014	.396	.381	.867

[Cont.]

2.2	40.17	79.814	.362	.352	.868
2.4	39.40	75.300	.541	.658	.861
2.5	39.34	73.992	.559	.638	.860
2.10	39.44	73.973	.595	.505	.859
2.9	39.14	74.406	.500	.488	.863
2.16	38.60	74.319	.515	.521	.862
<b>Reliability statistics for EA1</b>					
Cronbach's <i>Alpha</i>		Number of items			
0.786		5			
<b>Item-total statistics</b>					
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Squared multiple correlation	Cronbach's <i>Alpha</i> if item excluded
2.6	14.53	9.153	.566	.353	.748
2.12	13.92	10.229	.569	.364	.744
2.18	13.32	10.848	.466	.255	.775
2.19	13.79	9.830	.644	.433	.721
2.24	13.97	9.529	.584	.376	.738
<b>Reliability statistics for EA2</b>					
Cronbach's <i>Alpha</i>		Number of items			
0.884		4			
<b>Item-total statistics</b>					
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Squared multiple correlation	Cronbach's <i>Alpha</i> if item excluded
2.26	7.37	7.058	.749	.572	.851
2.27	7.45	6.550	.836	.822	.817
2.28	7.45	6.353	.853	.836	.809
2.33	6.62	7.833	.568	.326	.916
<b>Reliability statistics for EA3</b>					
Cronbach's <i>Alpha</i>		Number of items			
0.656		2			
<b>Item-total statistics</b>					
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Squared multiple correlation	Cronbach's <i>Alpha</i> if item excluded
2.1	1.33	.458	.500	.250	.
2.2	1.57	.717	.500	.250	.

[Cont.]

Reliability statistics for EA4					
Cronbach's <i>Alpha</i>		Number of items			
0.852		3			
Item-total statistics					
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Squared multiple correlation	Cronbach's <i>Alpha</i> if item excluded
2.4	4.22	3.062	.775	.623	.747
2.5	4.17	2.808	.753	.607	.763
2.10	4.26	3.226	.646	.419	.863
Reliability statistics for EA5					
Cronbach's <i>Alpha</i>		Number of items			
0.775		2			
Item-total statistics					
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Squared multiple correlation	Cronbach's <i>Alpha</i> if item excluded
2.9	2.90	1.087	.632	.400	.
2.16	2.36	1.122	.632	.400	.

**Table D6 – Internal consistency results for POS**

Reliability statistics				
Cronbach's <i>Alpha</i>		Number of items		
0.905		13		
Item-total statistics				
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Cronbach's <i>Alpha</i> if item excluded
3.4	36.2273	165.392	0.540	0.902
3.7	36.9740	162.313	0.728	0.893
3.8	37.8312	163.618	0.791	0.891
3.10	36.9545	168.697	0.568	0.900
3.13	37.4091	165.119	0.686	0.895
3.14	37.3312	164.079	0.702	0.894
3.19	37.0130	164.928	0.642	0.897
3.24	36.4740	168.225	0.549	0.901
3.6R	37.6494	168.059	0.478	0.905
3.16R	37.7727	162.857	0.642	0.897
3.17R	37.4545	158.903	0.721	0.893
3.20R	38.5390	177.414	0.451	0.904
3.21R	38.0584	167.729	0.581	0.900

[Cont.]

Reliability statistics				
Cronbach's <i>Alpha</i>		Number of items		
0.891		8		
Item-total statistics				
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Cronbach's <i>Alpha</i> if item excluded
3.4	23.33	66.929	0.567	0.890
3.7	24.08	64.582	0.793	0.865
3.8	24.94	67.852	0.745	0.872
3.10	24.06	68.604	0.627	0.882
3.13	24.51	68.317	0.661	0.878
3.14	24.44	66.679	0.722	0.873
3.19	24.12	67.137	0.660	0.879
3.24	23.58	68.298	0.604	0.884
Reliability statistics				
Cronbach's <i>Alpha</i>		Number of items		
0.822		5		
Item-total statistics				
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Cronbach's <i>Alpha</i> if item excluded
3.6R	10.0714	23.727	0.601	0.794
3.16R	10.1948	23.792	0.650	0.777
3.17R	9.8766	22.579	0.715	0.756
3.20R	10.9610	29.031	0.527	0.814
3.21R	10.4805	25.428	0.612	0.789

**Table D7 – Internal consistency results for TI**

Reliability statistics				
Cronbach's <i>Alpha</i>		Number of items		
0.817		5		
Item-total statistics				
Item	Scale mean if item excluded	Scale variance if item excluded	Corrected item-total correlation	Cronbach's <i>Alpha</i> if item excluded
4.3	16.2892	22.989	0.540	0.802
4.4	15.5422	20.007	0.698	0.753
4.5	15.5422	19.349	0.750	0.735
4.1R	18.2651	24.709	0.567	0.796
4.2R	16.8193	24.004	0.505	0.810

## Appendix E – Statistical results of the surveys

**Table E1 – Comparisons of means for EA**

<b>Pairwise comparisons of means for EA by branch</b>					
<b>EA</b>					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
PoN-PoA	-8.279	8.069	-1.026	.305	.915
PoN-PoAF	11.213	8.010	1.400	.162	.485
PoA-PoAF	-19.491	7.302	-2.669	.008	<b>.023</b>
<b>EA4</b>					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
PoA-PoN	-7.857	8.708	-.902	.367	1.000
PoA-PoAF	-33.366	7.881	-4.234	<.001	<b>.000</b>
PoN-PoAF	25.509	8.645	2.951	.003	<b>.010</b>
<b>EA5</b>					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
PoA-PoAF	-22.546	7.922	-2.846	.004	<b>.013</b>
PoA-PoN	15.986	8.754	1.826	.068	.204
PoAF-PoN	38.532	8.691	4.433	<.001	<b>.000</b>
<b>Pairwise comparisons of means for EA by age</b>					
<b>EA</b>					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
31 to 40 - 41 to 50	-12.161	7.052	-1.724	.085	.508
31 to 40 - under 30	14.093	11.616	1.213	.225	1.000
31 to 40 - over 51	-39.452	13.670	-2.886	.004	<b>.023</b>
41 to 50 - under 30	1.933	12.186	.159	.874	1.000
41 to 50 - over 51	-27.292	14.157	-1.928	.054	.323
under 30 - over 51	-25.359	16.901	-1.500	.133	.801
<b>EA2</b>					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
31 to 40 - under 30	-.400	12.572	-.032	.975	1.000
31 to 40 - 41 to 50	-12.675	13.189	-.961	.337	1.000
31 to 40 - over 51	-44.491	18.291	-2.432	.015	.090
under 30 - 41 to 50	-12.275	7.632	-1.608	.108	.647
under 30 - over 51	-44.091	14.795	-2.980	.003	<b>.017</b>
41 to 50 - over 51	-31.816	15.322	-2.076	.038	.227

[Cont.]

Pairwise comparisons of means for EA by place of service					
EA2					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
Civilian hospitals (applicable to resident physicians) – Branch Units/Corps/ Services	-16.939	9.330	-1.816	.069	.208
Civilian hospitals (applicable to resident physicians) – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	-32.323	9.254	-3.493	<.001	<b>.001</b>
Branch Units/Corps/Services – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	-15.383	7.609	-2.022	.043	.130

Each row tests the null hypothesis that the distributions of Sample 1 and Sample 2 are equal. Asymptotic significances (two-tailed test) are displayed.. Significance level: 0.050.

a. Significance values adjusted using the Bonferroni correction for multiple tests.

Mann-Whitney U-Test comparisons by gender	
EA2	
N total	154
Mann-Whitney U	2245.500
Wilcoxon W	6073.500
Test statistics	2245.500
Standard error	259.516
Standardised Test Statistics	-2.578
Asymptotic Sig. (2-tailed)	<b>0.010</b>
EA5	
Total N	154
Mann-Whitney U	2095.500
Wilcoxon W	5923.500
Test statistics	2095.500
Standard error	260.166
Standardised Test Statistics	-3.148
Asymptotic Sig. (2-tailed)	<b>0.002</b>

Mann-Whitney U-Test comparisons by rank	
EA2	
N total	154
Mann-Whitney U	3722.500
Wilcoxon W	7727.500
Test statistics	3722.500
Standard error	258.535
Standardised Test Statistics	3.210
Asymptotic Sig. (2-tailed)	<b>0.001</b>
EA3	
Total N	154
Mann-Whitney U	3452.500
Wilcoxon W	7457.500
Test statistics	3452.500
Standard error	242.672
Standardised Test Statistics	2.308
Asymptotic Sig. (2-tailed)	<b>0.021</b>

Significance level: 0.050.

Table E2 – Comparisons of means for POS

Pairwise comparisons of means by branch					
POS					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
PoA-PoN	-1.243	8.879	-0.140	0.889	1.000
PoA-PoAF	-28.231	8.035	-3.513	<0.001	<b>0.001</b>
PoN-PoAF	26.988	8.815	3.062	0.002	<b>0.007</b>
POS1					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
PoA-PoN	-2.832	8.898	-0.318	0.750	1.000
PoA-PoAF	-24.551	8.052	-3.049	0.002	<b>0.007</b>
PoN-PoAF	21.719	8.834	2.459	0.014	<b>0.042</b>
POS2					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
PoA-PoN	-0.154	9.001	-0.017	0.986	1.000
PoA-PoAF	-24.099	8.145	-2.959	0.003	<b>0.009</b>
PoN-PoAF	23.945	8.936	2.680	0.007	<b>0.022</b>
Pairwise comparisons of means by age					
POS					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
under 30 - 31 to 40	7.788	12.783	.609	.542	1.000
under 30 - 41 to 50	-22.094	7.760	-2.847	.004	<b>.026</b>
under 30 - over 51	-46.306	15.043	-3.078	.002	<b>.012</b>
31 to 40 - 41 to 50	-14.305	13.410	-1.067	.286	1.000
31 to 40 - over 51	-38.517	18.598	-2.071	.038	.230
41 to 50 - over 51	-24.212	15.579	-1.554	.120	.721
POS1					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
31 to 40 - under 30	0.754	12.810	0.059	0.953	1.000
31 to 40 - 41 to 50	-15.567	7.777	-2.002	0.045	0.272
31 to 40 - over 51	-41.980	15.075	-2.785	0.005	<b>0.032</b>
under 30 - 41 to 50	-14.813	13.438	-1.102	0.270	1.000
under 30 - over 51	-41.226	18.637	-2.212	0.027	0.162
41 to 50 - over 51	-26.413	15.612	-1.692	0.091	0.544

[Cont.]

POS2					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
31 to 40 - under 30	16.288	12.958	1.257	.209	1.000
31 to 40 - 41 to 50	-23.037	7.867	-2.928	.003	<b>.020</b>
31 to 40 - over 51	-53.339	15.249	-3.498	<.001	<b>.003</b>
under 30 - 41 to 50	-6.749	13.594	-.496	.620	1.000
under 30 - over 51	-37.051	18.853	-1.965	.049	.296
41 to 50 - over 51	-30.302	15.793	-1.919	.055	.330
Pairwise comparisons of means by place of service					
POS					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
Civilian hospitals (applicable to resident physicians) – Branch Units/Corps/ Services	-23.493	9.487	-2.476	0.013	<b>0.040</b>
Civilian hospitals (applicable to resident physicians) – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	-27.658	9.409	-2.939	0.003	<b>0.010</b>
Branch Units/Corps/Services – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	-4.165	7.737	-0.538	0.590	1.000
POS1					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
Civilian hospitals (applicable to resident physicians) – Branch Units/Corps/ Services	-25.690	9.507	-2.702	0.007	<b>0.021</b>
Civilian hospitals (applicable to resident physicians) – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	-28.207	9.429	-2.991	0.003	<b>0.008</b>
Branch Units/Corps/Services – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	-2.517	7.753	-0.325	0.745	1.000

Each row tests the null hypothesis that the distributions of Sample 1 and Sample 2 are equal.

Asymptotic significances (two-tailed test) are displayed.

Significance level: 0.050.

a. Significance values adjusted using the Bonferroni correction for multiple tests.

Mann-Whitney U-Test comparisons by gender		Mann-Whitney U-Test comparisons by rank	
<b>POS</b>		<b>POS</b>	
Total N	154	Total N	154
Mann-Whitney U	2344.000	Mann-Whitney U	3917.500
Wilcoxon W	6172.000	Wilcoxon W	7922.500
Test statistics	2344.000	Test statistics	3917.500
Standard error	263.868	Standard error	262.870
Standardised Test Statistics	-2.162	Standardised Test Statistics	3.899
Asymptotic Sig. (2-tailed)	<b>.031</b>	Asymptotic Sig. (2-tailed)	<b>&lt;0.001</b>
<b>POS2</b>		<b>POS1</b>	
Total N	154	Total N	154
Mann-Whitney U	1961.000	Mann-Whitney U	3846.500
Wilcoxon W	5789.000	Wilcoxon W	7851.500
Test statistics	1961.000	Test statistics	3846.500
Standard error	267.484	Standard error	263.424
Standardised Test Statistics	-3.565	Standardised Test Statistics	3.622
Asymptotic Sig. (2-tailed)	<b>&lt;0.001</b>	Asymptotic Sig. (2-tailed)	<b>&lt;0.001</b>
<b>POS2</b>		<b>POS2</b>	
Total N	154	Total N	154
U de Mann-Whitney	3725.000	U de Mann-Whitney	3725.000
Wilcoxon W	7730.000	Wilcoxon W	7730.000
Test statistics	3725.000	Test statistics	3725.000
Standard error	266.473	Standard error	266.473
Standardised Test Statistics	3.124	Standardised Test Statistics	3.124
Asymptotic Sig. (2-tailed)	<b>0.002</b>	Asymptotic Sig. (2-tailed)	<b>0.002</b>

Significance level: 0.050.

**Table E3 – Comparisons of means for TI**

Pairwise comparisons of means for EA by branch					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
PoA-PoAF	-22.376	8.217	-2.723	0.006	<b>0.019</b>
PoA-PoN	-30.702	9.080	-3.381	<0.001	<b>0.002</b>
PoAF-PoN	-8.326	9.015	-0.924	0.356	1.000
Pairwise comparisons of means by age					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
31 to 40 - 41 to 50	-2.619	7.936	-0.330	0.741	1.000
31 to 40 - under 30	37.023	13.072	2.832	0.005	<b>0.028</b>
31 to 40 - over 51	-41.536	15.384	-2.700	0.007	<b>0.042</b>
41 to 50 - under 30	34.404	13.714	2.509	0.012	0.073
41 to 50 - over 51	-38.917	15.932	-2.443	0.015	0.087
under 30 - over 51	-4.513	19.020	-0.237	0.812	1.000

[Cont.]

Pairwise comparisons of means by place of service					
Sample 1-Sample 2	Test statistics	Standard Deviation	Standardised Test Statistics	Sig.	Adj. Sig. <sup>a</sup>
Branch Units/Corps/Services – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	-4.436	7.912	-0.561	0.575	1.000
Civilian hospitals (applicable to resident physicians) – Branch Units/Corps/Services	32.301	9.702	3.329	<0.001	<b>0.003</b>
Civilian hospitals (applicable to resident physicians) – Units outside the branch (HFAR, UEFISM, DIRSAM, IUM, IASFA, others)	27.865	9.623	2.896	0.004	0.011

Each row tests the null hypothesis that the distributions of Sample 1 and Sample 2 are equal.

Asymptotic significances (two-tailed test) are displayed.

Significance level: 0.050.

a. Significance values adjusted using the Bonferroni correction for multiple tests.

Comparações por Teste U de Mann-Whitney por Género	
POS	
Total N	154
Mann-Whitney U	2089.000
Wilcoxon W	5917.000
Test statistics	2089.000
Standard error	269.848
Standardised Test Statistics	-3.059
Asymptotic Sig. (2-tailed)	<b>0.002</b>

Significance level: 0.050.

#### Quadro E4 – Correlações entre AO, PAO e IT

	EA	EA1	EA2	EA3	EA4	EA5	POS	POS1	POS2	TI
EA	--									
EA1	.698**	--								
EA2	.527**	.270**	--							
EA3	.463**	.201*	.303**	--						
EA4	.622**	.467**	.256**	.296**	--					
EA5	.566**	.358**	.313**	.390**	.343**	--				
POS	<b>.582**</b>	.368**	.370**	.437**	.514**	.574**	--			
POS1	.571**	.401**	.337**	.367**	.485**	.524**	.889**	--		
POS2	.423**	.177*	.282**	.361**	.394**	.443**	.800**	.614**	--	
TI	<b>.468**</b>	.408**	.387**	.280**	.474**	.286**	<b>.340**</b>	.291**	.285**	--

Pearson correlations. N=154

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

## Appendix F – Strengths and weaknesses

A method based on Sammut-Bonnici & Galea (2015) and Wehrich (1982) was employed to assess the strengths and weaknesses identified in military physicians' perceptions about the AAFF in terms of EA, OS and TI.

<b>EA</b>
<b>Strengths</b>
<b>Highly attractive work atmosphere and ethics:</b> while overall EA is moderate, the AAFF are perceived as highly attractive in the <i>healthy work atmosphere and ethics</i> dimension.
<b>Higher attractiveness for specific groups:</b> PoAF physicians generally perceive the AAFF as more attractive than Army (PoA) physicians. Similarly, officers aged $\geq 51$ find the AAFF more attractive compared to those in the 31–40 age group.
<b>Some EA dimensions are rated higher</b> – Women, higher-ranking officers, older physicians and physicians working in units outside their branch perceive the AAFF as more attractive in terms of <i>work/life balance</i> . PoAF physicians rate the AAFF as more attractive in the <i>training and development</i> dimension. Women and PoAF physicians perceive the AAFF as more attractive in terms of <i>promotion</i> opportunities.
<b>Weaknesses</b>
<b>Very low attractiveness in terms of benefits and rewards:</b> the <i>benefits and rewards</i> dimension is rated very low, particularly among lower-ranking officers.
<b>Low attractiveness in some dimensions</b> – military physicians generally view the AAFF as unattractive in terms of <i>work/life balance</i> , <i>training and development</i> and <i>promotion</i> . EA is especially low for PoAF and PoA physicians in the <i>training and development</i> and <i>promotion</i> dimensions, and for lower-ranking officers and resident physicians in the <i>work/life balance</i> dimension.
<b>POS</b>
<b>Strengths</b>
<b>Higher POS in specific groups:</b> POS is low, both overall and in the two support dimensions. However, older physicians report moderate POS. Overall and in the <i>professional</i> dimension, POS is higher for women, officers over 41 and PoAF officers. In the <i>personal</i> dimension, POS is higher for higher-ranking and older officers, as well as PoAF physicians.
<b>Weaknesses</b>
<b>Low overall POS: POS is particularly low in the professional dimension, with significant differences across groups.</b> PoN and PoA officers, younger physicians, men and lower-ranking officers report lower levels of POS.
<b>Very low POS in some groups:</b> resident physicians report very low overall POS, especially in the <i>personal</i> dimension.
<b>TI</b>
<b>Weaknesses</b>
<b>TI are generally low, with moderate yet concerning levels observed in some groups:</b> PoN and PoAF physicians report higher TI, as well as women, resident physicians and officers in the youngest and oldest groups.

## Appendix G – Content analysis of interviews

Interviewees were asked a series of questions (Q) and their responses were analysed using content analysis and organised as recommended by Sarmiento (2013, pp. 53–66).

Q1: Do you agree that implementing this SG would be adequate and contribute to the retention of medical officers in the AAFP?												
Q2: In your opinion, are the necessary conditions in place for the implementation of this strategic guideline (SG)? What measures could be taken to facilitate its implementation?												
Q3: Do you consider positive discrimination — whether for military physicians in general or for specific medical specialties — to be acceptable in the context of implementing this SG? What are the potential risks and how could they be minimised?												
Categories	Subcategories	Recording units	Interviewees								Enumeration units	Results (%)
			1	2	3	4	5	6	7	8		
SG1	Adequacy	<b>Adequate</b>			x	x	x	x	x	x	<b>6 out of 8</b>	<b>75%</b>
		Adequate, but PMP3 is considered the most relevant	x	x							2 out of 8	25%
	Feasibility	<b>Partially feasible and easy to implement (PMP3)</b>		x		x	x	x		x	<b>5 out of 8</b>	<b>62.5%</b>
		Partially feasible (PMP3)	x		x					x	3 out of 8	37.5%
	Acceptability	Acceptable, but PMP3 is considered the most relevant	x	x							2 out of 8	25%
		Acceptable if extended to all AAFP personnel			x				x		2 out of 8	25%
<b>Acceptable if it does not compromise mission readiness</b>			x	x	x	x	x	x	x	<b>7 out of 8</b>	<b>87.5%</b>	
SG2	Adequacy	Adequate	x								1 out of 8	12.5%
		<b>Generally adequate (with the exception of PMP5 and/or PMP4)</b>		x		x	x	x	x	x	<b>6 out of 8</b>	<b>75%</b>
		Adequate, but maybe not the best approach			x						1 out of 8	12.5%
	Feasibility	Feasible with supporting legislation	x								1 out of 8	12.5%
		<b>Partially feasible and easy to implement (implementing PMP4 and/or PMP5 and/or PMP9 may be challenging)</b>		x	x	x	x	x	x	x	<b>7 out of 8</b>	<b>87.5%</b>
	Acceptability	Acceptable				x	x		x	x	4 out of 8	50%
		Acceptable, but could lead to dissatisfaction	x	x	x						3 out of 8	37.5%
Acceptable if extended to all AAFP personnel								x		1 out of 8	12.5%	

[Cont.]

SG3	Adequacy	Generally adequate	x	x	x	x	x	x	x	x	8 out of 8	100%
	Feasibility	Partially feasible	x	x	x	x	x	x	x	x	8 out of 8	100%
	Acceptability	Acceptable if it does not compromise mission readiness		x	x	x	x	x	x	x	7 out of 8	87.5%
		Acceptable, but could lead to dissatisfaction	x	x	x						3 out of 8	37.5%
		Acceptable if extended to all AAFB personnel						x			1 out of 8	12.5%
SG4	Adequacy	Adequate	x	x		x	x	x	x	x	7 out of 8	87.5%
		Not adequate			x						1 out of 8	12.5%
	Feasibility	Feasible	x	x	x	x	x	x	x	x	8 out of 8	100%
	Acceptability	Acceptable	x	x		x	x				4 out of 8	50%
		Unacceptable			x			x	x	x	4 out of 8	50%