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THE ROLE OF MENTORING IN THE RELATIONSHIP BETWEEN ORGANIZATIONAL COMMITMENT AND PERCEIVED ORGANIZATIONAL SUPPORT IN A SAMPLE OF MILITARY PHYSICIANS OF THE PORTUGUESE AIR FORCE, AND ITS EFFECT ON TURNOVER[1]

O PAPEL DO MENTOR NA RELAÇÃO ENTRE O COMPROMETIMENTO E A PERCEÇÃO DE APOIO ORGANIZACIONAL NOS MÉDICOS MILITARES DA FORÇA AÉREA PORTUGUESA, E O SEU EFEITO SOBRE O TURNOVER

Maria Inês Monteiro Godinho de Matos Loureiro
Colonel, Medical Officer in the Portuguese Air Force
Master's degree in Business Administration from ISCTE - IUL
Auditor of the Flag Officer Course at the Military University Institute (IUM)
Rua de Pedrouços, 1449-027, Lisbon, Portugal
ines.g.matos@gmail.com

Cristina Paula de Almeida Fachada
Lieutenant-Colonel, Psychologist in the Portuguese Air Force
PhD in Psychology from the Faculty of Psychology, University of Lisbon
Researcher at the Research and Development Centre of the Military University Institute
Rua de Pedrouços, 1449-027, Lisbon, Portugal
fachada.cpa@ium.pt

Nuno Alberto Rodrigues Santos Loureiro
Colonel (Reserve), Aviation Maintenance Manager in the PoAF
Portuguese Air Force
Degree in Business Management from ISLA Lisbon
Deputy Director of the Air Force Training Directorate
Researcher at the IUM Research and Development Centre
Rua de Pedrouços, 1449-027, Lisbon, Portugal
nuno.a.loureiro@gmail.com

Abstract

The social, demographic, political and economic changes of the new millennium created a challenge for the Portuguese Armed Forces to manage its personnel. A drop in recruitment has been accompanied by a rise in turnover rates and a growing difficulty in retaining staff. Several NATO countries are facing the same problem, which is especially serious in the case

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of highly trained and highly specialised military personnel such as the medical officers of the Air Force. When these officers voluntarily leave the organization, it represents an incalculable loss in terms of knowledge, expertise and qualifications, as well as in terms of readiness rates and / or costs. This study uses hypothetical deductive reasoning, a mixed research strategy and a case study research design to survey a sample of 60 military physicians from the Portuguese Air Force (88.3% of the universe). First, the study will assess the relationship between organizational commitment and perceived organizational support, as well as the influence of mentors on this relationship. The second part of the study addresses the effect of mentoring on turnover, which is, in turn, influenced by the above relationship (between organizational commitment and perceived organizational support). The findings revealed a predominance of the affective dimension of organizational commitment and low levels of perceived organizational support, and confirmed the relationship between perceived organizational support and organizational commitment. The data also suggests that mentoring influences the POS / OC relationship and helps reduce turnover of these high value assets. Therefore, the study proposes a model for a formal mentoring programme.

Keywords: Organizational Commitment; Perceived Organizational Support; Turnover; Mentoring Model / Program; Armed Forces; Military Physicians.

Resumo

As alterações sociais, demográficas, políticas e económicas do novo milénio, refletiram-se, entre outras consequências, na dificuldade em gerir os efetivos das Forças Armadas portuguesas, por diminuição do recrutamento, aumento do turnover e crescente dificuldade de retenção. Esta realidade, transversal a vários países NATO, torna-se especialmente grave num efetivo de militares altamente treinados e especializados, como são os oficiais médicos da Força Aérea, que, quando abandonam voluntariamente a organização, acarretam incalculáveis perdas, tanto ao nível do saber, especialização e qualificação, como ao nível das taxas de prontidão e/ou gastos financeiros. Esta investigação, ancorada num raciocínio hipotético-dedutivo, associado a uma estratégia de investigação mista e a um desenho de pesquisa de estudo de caso, teve por objetivo, com recurso a uma amostra de 60 médicos militares da Força Aérea portuguesa (88,3% do universo), primeiramente, avaliar a relação entre o comprometimento organizacional e a perceção de apoio organizacional e o papel do mentor nesta relação, e, num segundo momento, o papel da mentoria, associado à referida relação, sobre o turnover. Dos resultados, comprovou-se a predominância da dimensão afetiva do comprometimento organizacional, uma baixa perceção de apoio organizacional, e a existência de relação entre a perceção de apoio organizacional e o comprometimento organizacional, relação esta onde se verificou ser relevante a existência de um mentor. As evidências permitiram também concluir que a mentoria, associada à supradita relação, concorre para uma diminuição do turnover destes high value assets, e, neste âmbito, foi desenhado um modelo para um programa de mentoria formal.

Palavras-chave: *Comprometimento Organizacional; Perceção de Apoio Organizacional; Turnover; Modelo/Programa de Mentoria; Forças Armadas; Médicos Militares.*

1. Introduction

When Portugal abolished Mandatory Military Service in 2004, the paradigm of military recruitment changed, and the Armed Forces (AAFF) had to tackle new challenges to maintain its staff numbers (Law No. 174/99 of 21 September). The problem was worsened by the economic and financial crisis of 2008, which led to a decrease in the AAFF budget and staff numbers (Council of Ministers Resolution No. 26/2013 of 11 April; Ministry of National Defence [MDN], 2013). In addition to this, the AAFF's recruitment pool has decreased due to population ageing, and possibly, to the fact that today's youth has different social values from those of the organization (Rijo, Marreiros, Mairos, & Paquete, 2018).

In 2020, a survey of the Portuguese population (Magalhães & Vaz-Pinto, 2020) showed that the AAFF are well regarded by the public, and that they are seen as a factor that significantly contributes to the country's reputation on an international level. However, only 25% of respondents would recommend joining the AAFF to family or friends, and only if no other job opportunities were available. This suggests that they do not find a military career appealing.

A study conducted in several countries of the North Atlantic Treaty Organization (NATO) analysed the global problem of maintaining the numbers of AAFF personnel due to the drop in recruitment and the increase in turnover. The study identified generic (1) external causes related to the economic and social environment (e.g. a smaller recruitment pool due to population ageing, the distance between military culture and today's social values, the higher wages available in the private and even the public sector, and the obligations inherent to military service which make a career in the AAFF unappealing); (2) geographical causes related to the location of military units; and (3) internal causes directly related to the functioning of the AAFF (e.g. a promotion system based on seniority rather than merit, incompatibility between individual interests and the mission, and errors in the recruitment process) (NATO, 2007).

In Portugal, Rijo et al. (2018) found that the reasons for young people to join the military usually relate to vocation (e.g. patriotic motives, an interest in military life and in missions abroad), while the reasons that drive them to leave are low wages, lack of career advancement and recognition, and burnout.

These social, demographic, political and economic changes make it challenging to manage the available staff due to low recruitment rates and a growing difficulty in retaining highly trained and highly specialised personnel (Rijo et al., 2018), as is the case of military medical officers (Braga & Fachada, 2018; Branco, 2018).

From 2013 to 2016, 24 medical officers from the Navy and five from the Air Force (PoAF) filed for decommission from the Career Staff (CS) of the Armed Forces, and two other officers, one from the Army and one from the PoAF, requested a special leave to stand for election under article 95(j) of the Status of Armed Forces Personnel (MDN, 2015). That is, a total of 31 physicians left the AAFF (Branco, 2018). In 2017, a municipal election year, eight more

medical officers, five from the Navy, two from the Army and one from the PoAF, filed for decommission from the Career Staff (CS), and one medical officer from the Navy, two from the Army and seven from the PoAF requested a special leave to stand for election. That is, 18 highly specialised officers left the AAFF that year (Branco, 2018). Branco (2018) identified several reasons for what he describes as the "worryingly" high turnover of medical officers in the AAFF, the most relevant of which is the "lack of prospects" of military careers (the reason given by 79.2% of 24 respondents for leaving the organization). This high turnover of military physicians was also noted by Braga and Fachada (2018).

Several studies have shown that affective commitment is the main type of organizational commitment (OC) among military personnel (Afonso, 2010; Braga & Fachada, 2018; Casimiro, Nascimento, & Fachada, 2017; Duque, 2000; Fachada, 2015; Gade, 2003; Silva, 2013). Furthermore, as Braga e Fachada (2018, p.176) add, the reasons for the high voluntary turnover of military physicians in the AAFF, "relate less to the cost of leaving (compensation), [...] than to an affective (lack of) identification, a psychological (lack of) commitment to the organization". These data are consistent with Meyer, Kam, Goldenberg, and Bremner (2013), whose study on Canadian military personnel found that affective commitment is the main type of OC associated with lower turnover rates.

Furthermore, higher affective OC is directly linked to lower turnover rates (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger, Fasolo, & Davis-LaMastro, 1990; Foong-Ming, 2008; Rhoades & Eisenberger, 2002) and OC (particularly affective commitment) is strongly and positivilly correlated with perceived organizational support (Eisenberger et al, 1986; Eisenberger et al., 1990; Rhoades & Eisenberger, 2002).

A high perceived organisational support (POS) is associated with people management practices that invest in the organization's human capital and recognise employees' contributions to the organization (Eisenberger, Aselage, Sucharski, & Jones, 2004; Rhodes & Eisenberger, 2002). Mentoring is one of these practices, as noted by Allen, Armstrong, Reid and Riemenschneider (2008) and Park, Newman, Zhang, Wu and Hooke (2016).

Mentoring has been used in military contexts, for example, in the relationship between knights and their squires and, later, between generals and their *aides de camp*, but it was not until 1985 that it was implemented as a formal practice. In the early 2000s, formal programmes were widely used in all branches of the American AAFF (Gleiman & Gleiman, 2020). During the last decade, many commanders of the US AAFF have defended mentoring as a practice that should be encouraged and implemented. These programmes should be of voluntary engagement, monitored by entities external to direct supervisors, based on outsourcing, target specific groups and use new technologies and modern forms of communication (Gleiman & Gleiman, 2020; Johnson & Anderson, 2010).

This study analyses the relationship between OC and POS in a sample of military physicians serving in the PoAF, and examines how mentors influence that relationship and their role in reducing turnover of these high value assets. The study is delimited to: PoAF military physicians on active duty (spatial delimitation); June 2022 (temporal delimitation); the influence of mentors on the relationship between POS, OC and turnover (content delimitation).

The following research objectives were identified in light of the study's goal and delimitations:

– Objective 1 – To assess the relationship between OC and POS among PoAF military physicians.

– Objective 2 – To assess how mentors influence the relationship between POS and OC among the PoAF's military physicians.

– Objective 3 – To analyse how mentoring, as a people management practice which has been shown to increase POS and OC, influences turnover of military physicians in the PoAF.

2. Theoretical and conceptual framework

2.1. Key concepts

2.1.1. Turnover

Turnover is the conscious and deliberate decision to leave due to dissatisfaction with one's organization, and turnover intentions are the conscious desire to seek alternative job opportunities in other organizations (Tett & Meyer, 1993).

Turnover negatively affects the organization because the position occupied by the employee who leaves must be filled by someone new. This represents losses for the organization, in terms of investment in training as well as in technical and organizational know how, which can be recovered, but not without a cost (Oliveira, 2009). In military organizations, these costs are especially steep in the case of highly differentiated and trained assets. On one hand, due to the considerable investment made in training and the time spent acquiring the specific expertise required to accomplish complex missions, as is the case of military operations. On the other hand, related to the new recruitment, selection and training process (a process that is both expensive and complex) that will have to be carried out to ensure that the mission is accomplished (Dupré & Day, 2007). To some degree, turnover can be useful to renew staff (Holtom, Mitchell, Lee, & Inderrieden, 2005), however, in military organizations, where the costs associated with staff loss / replacement are especially high, increasing retention should be one of the main items on the agenda to ensure that specialised and trained personnel are always available and at high readiness (Dupré & Day, 2007).

Some of the models that explain turnover address:

– The reasons that drive people to leave organizations, called content models, such as the one proposed by Maertz and Griffeth (2004), which identifies eight motivational forces – affective, contractual, constitutive, alternative, calculative, normative, behavioural and moral, all or some of which can be motives for an employee to leave a company;

– The processes / pathways that drive employees to leave an organization (called process models), such as Mobley's intermediate linkages model (1977, cited in Lee & Mitchell, 1994). In this model, job dissatisfaction triggers the idea of leaving in employees minds, and this, in turn, makes them think about searching for other job opportunites and calculate the costs of that change. This calculation inevitably leads to comparisons with the current job, and may elicit the intention to search for other work opportunities, followed by an active search for alternatives and an assessment of the acceptability of those options. This generates an

intention to leave the organization, and, ultimately, leads to turnover (Lee & Mitchell, 1994). These models describe a process that develops in stages, from job dissatisfaction to turnover, but not all stages of the process are necessary for an employee to make the decision to leave (Lee & Mitchell, 1994).

Griffeth and Hom (1995, cited in Oliveira, 2009) and Maertz and Griffeth (2004) argue that the type of model that would best describe the turnover process is a mixed model, in which the content model explains the "why" and the process model explains the "how".

One of the strongest predictor of turnover is turnover intention (Griffeth, Hom & Gaertner, 2000; Oliveira, 2009; Tett & Meyer, 1993). Huffman et al. (2005, cited in Dupré & Day, 2007) found that for US Army personnel, the intention to leave is strongly linked to turnover rates. Other factors, such as job satisfaction, organizational commitment, actively searching for a new job and quality of life at work are also important predictors of turnover (Griffeth et al., 2000; Holtom et al., 2005; Oliveira, 2009; Tett & Meyer, 1993).

2.1.2 Organizational commitment

OC is a psychological state that describes the relationship between employees and the organization where they work (Allen & Meyer, 1990) and directly influences their decision to remain or leave. Specifically, when the relationship that binds employees to their organization is strong, they are less likely to want to leave, and turnover intentions decrease (Allen & Meyer, 1996).

In the 1970s, the first studies on OC attempted to identify factors that could justify the strength of the employee / organization relationship. This topic is still highly relevant for research in organizational psychology and social sciences (Mowday, 1999, cited in Honório, 2009). Studies on commitment have generally followed two main approaches (Afonso, 2010; Honório, 2009): the behavioural approach, in which OC relates to a behaviour and is dependent on situational factors (Swailes, 2000), and the attitudinal approach, in which commitment is related to employee attitudes and the psychological and affective bond between employees and the organization (Allen & Meyer, 1990).

The first attitudinal models were one-dimensional and only addressed the affective component (Allen & Meyer, 1990). These were followed by multidimensional models, including the Three-Component Model of Organizational Commitment by Allen and Meyer (1991), which has been widely studied, accepted and validated (Afonso, 2010; Honório, 2009). According to this model, OC is individual and has three dimensions: affective, continuance and normative – which may be more or less intense depending on the moment when the link / bond between an employee and the organization is assessed, because it is based on that person's experiences / background (Allen & Meyer, 1991).

Specifically, OC has the following dimensions or components (Allen & Meyer, 1993, 1996; Braga & Fachada, 2018; Fachada, 2015):

– Affective (AOC), in which employees remain in the organization because they want to stay (*want to*), because they share the organization's values and mission and / or because of their involvement with the organization;

– Continuance (COC), in which employees remain in the organisation because they need to maintain that link (*need to*), as the costs of leaving the organization would be too high;

– Normative (NOC), in which employees remain out of sense of duty or moral debt to the organization (*ought to*), which "makes it impossible" for them to leave.

The components of OC are independent, but some of their aspects are related (Allen & Meyer, 1996), especially in the affective and normative dimensions (Meyer, Stanley, Hercovitch, & Topolnytsky, 2002).

To operationalise the model, Allen and Meyer (1990) developed and validated an instrument to assess OC, which consists of three scales that correspond to the three components. Despite being globally accepted and widely validated, there is some criticism of the three dimension model, specifically regarding the possibility of subdividing the continuance component into two sub dimensions (Dunham, Grube, & Castanheda, 1994); the fact that the normative component is not very prominent in individual-centred societies / cultures (Mayer & Schoorman, 1998, cited in Honório, 2009); and the difficulty in distinguishing the AOC and CON scales (Dunham et al., 1994).

The following determinants / antecedents of OC were identified:

– Affective commitment – the individual variables are employee age, education and perceived competence (Mathieu & Zajac, 1990); and professional variables are work experiences, workplace socialisation, job satisfaction, seniority in the organization, organizational culture and climate, work-life balance (Allen & Meyer, 1990; Meyer, Irving, & Allen, 1998; Struges & Guest, 2001) and POS (Eisenberger et al., 1990);

– Continuance commitment – among others, gender, marital status, seniority, qualifications (Mathieu & Zajac, 1990; Mayer & Schorrman, 1998), the employee's perception of the personal investment they have already made in the organization versus the job opportunities available to them (Allen & Meyer, 1990; Meyer et al., 2002);

– Normative commitment (the least studied) – organizational identification, loyalty and duty (Wiener, 1982 cited in Honório, 2009), socialisation in the organization and the perception of organizational fairness (Dunham et al., 1994 and Rego & Souto, 2004, cited in Honório, 2009).

Some of the consequences of OC are turnover rate, absenteeism, performance, family stress index, creativity and innovation, as well as organizational citizenship behaviours (Allen & Meyer, 1990, 1996; Mathieu & Zajac, 1990; Meyer, & Herscovitch, 2001).

According to Allen and Meyer (1996), AOC is strongly and positively associated with organizational behaviours that are considered desirable, whereas NOC has a weaker positive relationship with desirable organizational behaviours and COC, as a rule, tends to have a neutral or negative relationship with employee attitudes towards the organization. Ferreira (2005, cited in Silva, 2013) argues that NOC is more likely to develop in cultures that regard loyalty as a virtue and in which a sense of obligation is valued. Furthermore, Eisenberger et al. (1986), Eisenberger et al. (1990), Foong-Ming (2008), Rhoades, Eisenberger, and Armeli (2001), and Rhoades and Eisenberger (2002) found that higher AOC is directly and negatively related to turnover.

2.1.3 Perceived organizational support

In the Organizational Support Theory, Perceived Organizational Support describes employees' general perception or belief about the degree to which the organization values their contributions and cares about their well-being (Eisenberger et al., 1986; Eisenberger et al., 1990; Rhoades & Eisenberger, 2002). According to this theory, workers rely on their beliefs about the organization, as if personifying it, to determine the likelihood that their efforts will be rewarded and / or that their need for recognition, approval and appreciation will be met (Eisenberger et al., 1986). These beliefs are based on employees' personal experiences, their experiences with the organization's policies and procedures, and their interactions with the various actors in the organization (Eisenberger et al., 1986; Eisenberger et al., 2004; Rhoades & Eisenberger, 2002). POS can be measured using the Survey of Perceived Organizational Support (SPOS) scale developed and validated by Eisenberger et al. (1986).

Roades and Eisenberger (2002) and Eisenberger et al. (2004) found that the determinants / antecedents of POS can be grouped into three categories: fairness or equity in the organization's treatment of employees; employee perceptions of support from management; and staff management policies / practices (e.g. regarding job security, training, rewards, promotions and working conditions). It is worth noting that mentoring as a people management practice has been shown to have a positive relationship with POS (Allen et al., 2008; Park et al., 2016). However, people management practices only increase employees POS if employees perceive them as being implemented on the organization's initiative, rather than imposed by regulations or driven by motivations related to market games (Eisenberger et al., 1986).

The consequences of higher levels of POS include a greater sense of obligation to help the organization achieve its goals, higher levels of commitment and improved work performance, a greater desire to remain in the organization, and a decrease in absenteeism and turnover (Eisenberger et al, 1986; Foong-Ming, 2008; Rhoades & Eisenberger, 2002), in addition to lower levels of stress, burnout, fatigue, anxiety, irritability at work and non compliance with working hours (Honório, 2009).

Therefore, when employees have positive levels of POS, they tend to display more desirable workplace behaviours, including higher OC, with the positive consequences listed above (Rhoades & Eisenberger, 2002).

2.1.4 Relationship between Organizational Commitment, Perceived Organizational Support and Turnover

According to Rhoades, Eisenberger and Armeli (2001), there is a direct and proportional relationship between the affective dimension of OC and POS. While this correlation has been described by several authors, including Eisenberger et al. (1990) and Shore and Wayne (1993), the way in which this cause and effect relationship influences turnover was only confirmed in 2001 (Rhoades & Eisenberger, 2002), in studies by Rhoades et al. (2001), which were later confirmed by Eisenberger, Stinglhamber, Vandenberghe, Sucharski and Rhoades (2002) and by Park, Newman, Zhang, Wu and Hooke (2016). These studies found that there is a negative relationship between POS and turnover, and that it is mediated by AOC.

With regard to the continuance component, some studies have identified a positive association between this type of commitment and POS (Eisenberger et al., 1990; Honório, 2009), while others, such as Shore and Wayne (1993), did not find a significant relationship between these variables.

Finally, the few studies that examine the relationship between NOC and POS have found a positive correlation (Chew & Wong, 2008; Honório, 2009).

2.1.5 Mentoring

A mentor's goal is to protect and guide mentees, helping them develop their expertise and gain self-reliance in their future carers (Chiavenato, 2002), but also, in a more generalized way, to contribute to their personal development (Kram & Ragins, 2007).

A mentor is someone with experience who helps mentees discover and define their own development needs by setting goals, encouraging independent learning, allowing them to describe their problems and helping them to clarify, reflect and challenge on them (Kram & Ragins, 2007). Mentors also help mentees reflecting on their beliefs, feelings, thoughts and behaviours, allowing them to approach those from different angles, as well as encouraging them to explore opportunities and examining and solving problems autonomously (Kram & Ragins, 2007).

Mentoring can be done in an informal way, on a daily basis, at-work and off-work relationships between mentor and mentees, or formally, when the organization implements and manages the process, both to accomplish organizational goals and to meet employee's development needs (Hegstad, 1999). In the latter case, mentoring programmes can either be voluntary or mandatory, their progress can be supervised by the organization or outsourced, they can target a specific group within the organization or a wider audience, and they can be carried out by using digital means of communication (Gleiman & Gleiman, 2020).

The implementation of formal mentoring programmes has numerous benefits for mentees, mentors and the organization. For Hattingh, Coetzee and Schreuder (2005), these benefits include: stabilising and strengthening the organizational culture; maintaining high standards of work performance; improving horizontal and vertical communication; increasing organizational productivity; and increasing employee motivation and retention. Hegstad (1999) argues that these programmes provide benefits to organizations in several areas, including motivation, performance, commitment and employee retention, and through processes such as on-the-job training, leadership development and talent identification. Formal mentoring programmes are beneficial for employees because they support their psychosocial development and career advancement (Hegstad, 1999).

The United States Air Force (USAF) has used a formal mentoring programme as a people management strategy for more than 20 years (Lancaster, 2003). This programme was implemented to help the organization cope with the challenges of the new millennium – on one hand, the drop in recruitment and the need to cut costs by reducing the number of staff, and, on the other, the increasing number of operations – by improving retention and reducing turnover, in order to maintain, or even increase, the number and level of complexity

of operations (Budd, 2007). The USAF mentoring programme represents a paradigm shift in how the organization regards its military staff, which aims to make it more people-centred, in order to remain current and adjust to the changes in mindsets, and cope with the growing difficulties in recruiting and retaining people (Hornburg, 2005; Reynolds, 2019). Not many studies have been published on whether these programmes have effectively increased retention in the USAF, but one study on military administration and another on military health personnel found that one of the measures that had a significant impact in reducing staff turnover was the development of a formal mentoring programme (Combs, Davey, & Gualano, 2002; Prevosto, 2001).

2.2. Research hypotheses and research model

To help guide the study, the following five hypotheses (H1a, H1b and H1c; H2; H3) were formulated based on the literature review presented above.

There is a strong positive relationship between POS and OC, especially in the case of the affective type of commitment (Eisenberger et al., 1986; Eisenberger et al., 1990; Rhoades, Eisenberger, & Armeli, 2001; Rhoades & Eisenberger, 2002; Shore & Wayne, 1993). Therefore, it can be deduced that:

– H1a – There is a direct and positive correlation between AOC and POS among PoAF military physicians.

According to Chew and Wong (2008) and Honório (2009), there is a direct and positive relationship between NOC and POS (Chew & Wong, 2008; Honório, 2009). Therefore, it can be deduced that:

– H1b – There is a direct and positive relationship between NOC and POS among PoAF military physicians.

With regard to COC and POS, some studies that have found a positive relationship between these two variables (Eisenberger et al., 1990; Honório, 2009). Therefore:

– H1c – There is a direct and positive relationship between COC and POS among PoAF military physicians.

These first three hypotheses refer to the first research question.

Furthermore, certain people management practices increase POS, including how much the organization invests in its human capital and thus shows that it recognises the contributions of its employees (Eisenberger et al., 2004; Rhodes & Eisenberger, 2002). One of these practices, mentoring, has a positive effect on POS (Allen et al. 2008; Park et al. 2016) and commitment (Hegstad, 1999). The next hypothesis refers to the second research question:

– H2 – The existence of a mentor is positively associated with the relationship between POS and OC among PoAF military physicians.

Eisenberger et al. (2002) and Park et al. (2016) also found a negative relationship between POS and turnover, mediated by AOC, and confirmed that mentoring as a practice has positive effects on POS (Allen et al., 2008; Park et al., 2016) and commitment (Hegstad, 1999), and a negative impact on turnover (Combs et al., 2002; Prevosto, 2001). Therefore, it can be deduced that:

– H3 – Mentoring, as a people management practice that increases POS and OC, is associated with lower turnover of military physicians in the PoAF.

Figure 1 shows the proposed research model.

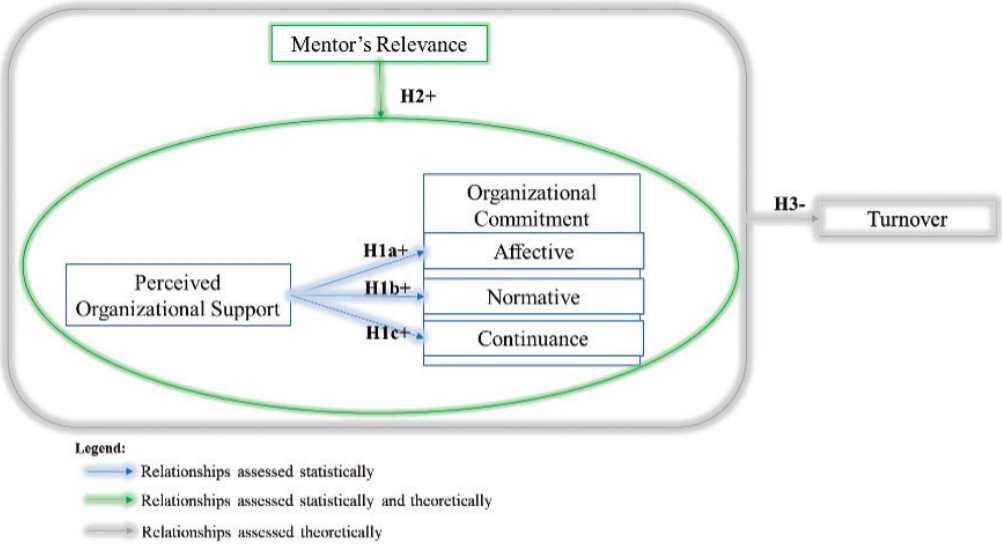

Figure 1 – Proposed research model

3. Methodology and method

3.1. Methodology

The study used a mixed research strategy, hypothetical-deductive reasoning and a case study research design. In the first phase of the study, a quantitative strategy was used which relied on questionnaires to assess OC, POS and the mentor's relevance. In the second phase, a qualitative strategy was used to investigate if mentoring, as a people management practice that increases POS and OC, reduces military physician turnover in the PoAF.

3.2. Method

3.2.1. Participants and procedure

Participants (Table 1). The universe of respondents included all PoAF military physicians on active duty and in the active duty reserves as of 1 June 2022 (N=68), and the non probabilistic convenience sample (Sarmento, 2013) was 88.3% of N (n=60), which represents a degree of confidence of 95% and a margin of error of less than 5%.

Table 1 – Descriptive analysis of the universe and sample

		Universe	% de N	Amostra (n=60)	% de n
Age	up to 30 years old	10	14,7%	9	15,0%
	31 to 40 years old	28	41,1%	**23**	**38,3%**
	41 to 50 years old	22	32,4%	**22**	**36,7%**
	over 51 years old	8	11,8%	6	10,0%
Gender	**Feminine**	37	54,4%	**32**	**53,3%**
	Masculine	31	45,6%	28	46,7%
Rank	Junior officer (CAP, TEN, ALF)	30	44,1%	24	40,0%
	Flag officer or senior officer (MGEN, BGEN, COR, TCOR, MAJ)	38	55,9%	**36**	**60,0%**
Job location	Civilian hospitals (applicable to Residents)	16	23,5%	12	20,0%
	Air Force Units/Departments/ Services	30	44,1%	**29**	**48,3%**
	Units outside the Branch (Armed Forces Hospital, UEFISM, DIRSAM, IASFA)	22	32,4%	19	31,7%

Procedure. An email was sent to the potential respondents with a link to the questionnaire, which was available between 18 September and 1 October 2022, accompanied by a brief text describing the context and goal of the study, and an assurance that all answers would be anonymous and confidential.

3.2.2 Data collection instrument

A questionnaire survey was prepared, organized into four sections: the first part collected the sociodemographic and professional data that was used to characterise the sample. The second part collected data on POS. The third part served to determine the respondents type of commitment to the organization. The fourth part asked the military physicians of the PoAF how they would feel about the creation of a mentoring programme, and how that programme should be set up.

A pre-test of the questionnaire was delivered to a small group of respondents, corresponding to 7% of the surveyed population (n=5/68), and some minor adjustments were made to adapt the instrument to the targeted universe.

POS assessment. Eisenberger's SPOS (1986), adapted to the Portuguese context by Honório (2009), and validated for a population of Portuguese military personnel by Afonso (2010), was used to assess POS. It was titled *Questionário sobre a PAO* [Questionnaire on POS] and consisted of 36 items scored on a Likert scale, from Strongly disagree (1) to Strongly agree (7). After the pre-test was delivered, three items (2, 30 and 34) were removed, as they referred to aspects related to remuneration or employment contract that were not applicable to the survey universe, and the wording of four items (10, 19, 28 and 32) was slightly altered to improve clarity / applicability (care was taken to ensure that the meaning of the statements was not changed). The items were changed to the following wording: 10_"The organization is

willing to make an effort to support me so I can perform my role to the best of my abilities"; 19_"If my position was temporarily suspended, the organization would prefer to replace me rather than reassign me"; 28_"The organization cares more about goals / indicators than about me"; and 32_"The organization does not reward me as I deserve".

OC assessment. OC was assessed using the Portuguese version of Allen and Meyer's (1990) OC Scale by Nascimento, Lopes, and Salgueiro (2008), which Braga and Fachada (2018) adapted to the military medical reality. The scale consists of 18 items, answered on a Likert scale, from Strongly disagree (1) to Strongly agree (7). The first six items assess AOC, the second group of six items assess NOC, and the last six assess COC.

Assessment of mentor's relevance (for PoAF military physicians). A questionnaire was prepared specifically for this study, based on the benefits and types of mentoring proposed in previous studies on the topic (Gleiman & Gleiman, 2020; Hattingh et al., 2005; Hegstad, 1999; Kram & Ragins, 2007). After the pre-test was delivered, minor adjustments were made to improve clarity. The questionnaire is divided into 3 parts: the first part contains 12 items answered on a Likert scale from Strongly disagree (1) to Strongly agree (5). This section assesses the relevance / importance of mentors for organizations and employees, in the opinion of the universe of respondents. This scale was titled *mentor's relevance*. The second part consists of two questions. The first (the 13th item) contains 9 items and asks respondents if they would find a formal mentoring programme useful. The second (the 14th item) contains 8 items and asks respondents to describe the ideal characteristics of the mentors that would participate in this formal mentoring programme. Both questions are answered on a Likert scale from Not useful (1) to Very useful (5). The third is an open ended, non-compulsory question (the 15th item) where respondents can add comments and / or suggestions regarding the creation of a formal mentoring programme for the medical officers of the PoAF.

3.2.3 Data analysis techniques

Descriptive, correlation and inductive statistical analyses were performed using the *Statistical Package for Social Sciences* (SPSS version 28). A content analysis, based on the identification of emerging categories as described in Fachada (2015), was performed on the answers to the 15th question on the third part of the questionnaire.

4. Data analysis and discussion of findings

4.1. Reliability analysis and factor analysis of the POS, OC and *Mentor's revelavance* scales

Reliability. The reliability (internal consistency) of the POS, OC and *Mentor's Relevance* scales was assessed using Cronbach's alpha coefficient, according to the classification proposed by Hill and Hill (2002).[2]

[2] Hill and Hill (2002, p.149) consider the coefficient: unacceptable, if <0.6; poor, if [0.6, 0.7[; reasonable, if [0.7; 0.8[; good, if [0.8; 0.9[; and excellent, if ≥ 0.9.

A Cronbach's alpha of 0.95 was obtained for the POS scale (Table 2), which is considered excellent (Hill & Hill, 2022), and is consistent with the coefficients obtained by Honório (2009) (α=0.96), Afonso (2010) (α=0.94), and Eisenberger et al. (1986) in their original version of the scale (α=0.97).

Table 2 – Internal consistency of the POS, OC and *relevance of mentors* scales

Scale	No. of items	Cronbach's *Alpha*
Perceived Organizational Support	33	0,95
Organizational Commitment – Global	18	0,87
Affective Commitment	6	0,90
Continuance Commitment	6	0,73
Normative Commitement	6	0,69*
Mentor's relevance	12	0,95

* 0.71 if item 3.18 is removed[3]

A Cronbach's alpha of 0.87 was obtained for the OC scale (Table 2), which is considered good by Hill and Hill (2002), and is in line with the results obtained by Braga and Fachada (2018) in a survey of a population of Portuguese military physicians (α=0.86). The affective, continuance and normative commitment subscales obtained Cronbach's alpha values of 0.90, 0.73 and 0.69 (from excellent to poor, respectively), and were generally consistent with the original study by Allen and Meyer (1990), in which these values were 0.87, 0.75 and 0.79.

The *mentor's relevance* scale had a Cronbach's alpha of 0.95 (Table 2), considered excellent by Hill and Hill (2002).

Exploratory factor analysis (EFA). Two EFAs were performed on the POS scale, using the principal components method with *varimax* rotation. In the first analysis, the number of factors was not limited and 8 factors (8F) were extracted, which explained 73.77% of the total variance. In the second, the number of factors was restricted to 1 (1F; as in the original model), which explained 39.68% of the total variance, but obtained a Cronbach's alpha of 0.95, validated by a KMO of 0.759, which is considered average by Marôco (2010)[4], and a Bartlett's Test of Sphericity with a significant Chi-square ($X2 = 1418.68$, $p<0.0001$). In light of these data, and of the fact that this was the model adopted in the Portuguese validation study (Honório, 2009), it was decided that the original scale validated for the Portuguese context would be used in this study, with the adjustments mentioned in the previous chapter.

Two EFAs were also performed on the OC scale, using the principal components method with *varimax* rotation. The first analysis did not restrict the number of factors, and 5 factors

[3] If item 3.18 – *One of the few serious consequences of leaving the organization would be the lack of other job opportunities* – was removed from the NOC subscale, its reliability (Cronbach's alpha) would increase to 0.71, which Hill and Hill (2002) consider reasonable. However, it was decided that none of the items would be removed in the data analysis, and that the original scale would be used, as the "n" of the sample was lower than the "n" in the original.

[4] Marôco (2010, p.368) – a KMO is excellent if]0.9 to 1.0]; good if].0.8 to 0.9]; average if].0.7 to 0.8]; mediocre if].0.6 to 0.7]; poor, but still acceptable, if].0.5 to 0.6]; and unacceptable if ≤ 0.5.

(5F) emerged, which explained 73.79% of the total variance. The second restricted the factors to 3 (3F; according to the original model), which explained 58.99% of the total variance, and obtained a Cronbach's alpha of 0.87, validated by a KMO of 0.759, considered average by Marôco (2010), and a Bartlett's Test of Sphericity with a significant Chi-square (X^2 =616.73, p<0.0001). Therefore, as the three-factor model was the one used in the study validated for Portugal (Nascimento, 2008) and for the population of Portuguese military physicians (Braga & Fachada, 2018), this was the model chosen for this study.

An exploratory factor analysis was performed on the *mentor's relevance* scale, using the principal components method with *varimax* rotation, in which the number of factors was not limited and 1 factor (1F) was obtained, which explained 67.23% of the total variance. The scale was validated by a KMO 0.910, considered excellent by Marôco (2010), and a Bartlett's Test of Sphericity with a significant Chi-square (X^2 =651.454 p<0.0001).

4.2. Perceived organizational support among military physicians in the Air Force

Table 3 contains the mean values in terms of: age – the highest mean age (above the mean) is over 51 years of age (M=4.394;SD=0.466) and the lowest ages (below the mean) are in the range from [31, 40] (M=3.198;SD=0.847); gender – the most represented gender (above the mean) is female (M=3.694;SD=1.022); the most represented rank (above the mean) is Flag officer and Senior Officers (M=3.709; SD=1.008); the most represented place of work (above the mean) is in the PoAF's Units/Departments/Services (U/D/S) (M=3.780; SD=1.070) and the least represented (below the mean) are civilian hospitals (M=3.187; SD=0.649).

Table 3 – Descriptive analysis of POS

	n	M	SD
Total	60	**3,5379**	0,95517
Age			
up to 30 years old	9	3,4141	1,02852
31 to 40 years old	23	3,1976	0,84710
41 to 50 years old	22	3,7107	0,99140
over 51 years old	6	**4,3939**	0,46552
Gender			
Feminine	32	**3,6941**	1,02249
Masculine	28	3,3593	0,85514
Rank			
Flag officer or Senior officer (MGEN, BGEN, COR, TCOR, MAJ)	36	**3,7088**	1,00752
Junior officer (CAP, TEN, ALF)	24	3,2816	0,82547
Job location			
Civilian hospitals (applicable to Residents)	12	3,1869	0,64926
Air Force Units/Departments/Services	29	**3,7795**	1,07015
Units outside the Branch (Armed Forces Hospital, UEFISM, DIRSAM, IASFA)	19	3,3907	0,86739

Statistically significant differences between mean values were only found between the POS mean values when analysed in relation to the age category ($t_{[31,40];>51}$=-23.65; <0.01), ($t_{<30;>51}$=-20.89; <0.05) and ($t_{[41,50]e>51}$=-15.82; <0.05) – the group of PoAF military physicians over 51 years of age obtained a significantly higher value (M=4.394) than the scores of the younger participants (Table 4).

Table 4 – Test of POS mean differences

Null hypothesis	Test	Sig.a,b	Decision
The POS scale distribution is the same in the Age categories.	*Kruskal-Wallis*	**0,025**	**Reject null hypothesis.**
The POS Scale distribution is the same in the Gender categories.	*Mann-Whitney U*	0,324	Retain null hypothesis.
The POS Scale distribution is the same in the Rank categories	*Mann-Whitney U*	0,068	Retain null hypothesis.
The POS Scale distribution is the same in the Job location categories.	*Kruskal-Wallis*	0,220	Retain null hypothesis.

a. The level of significance is 0.050.
b. Asymptotic significance is displayed.
Non-parametric *Kruskal-Wallis* and *Mann-Whitney U* tests were used because the POS scale is ordinal (Marôco, 2014, p.230).

In this sample, the results of the POS scale were generally lower than the midpoint (M=3.54; SD=0.96). The POS levels of PoAF physicians were lower than those found by Afonso (2010), in another survey of military personnel (M=3.98; SD=0.40), and by Honório (2009) in the validation study of the Portuguese version of the scale (M=4.27; SD=0.95). Therefore, the respondents in this sample have lower POS levels than the respondents in the previous studies.

Statistically significant mean differences were only found between the group of physicians over 51 years of age and the other participants, with the former obtaining higher values (M=4.394; SD=0.466), which (naturally) fall above the midpoint.

4.3. Organizational commitment among military physicians in the Air Force

Table 5 shows that the affective subscale obtained the highest mean values in OC (M=4.992; SD=1.302) (above the midpoint), followed by the normative subscale (M=4.014; SD=1.424) and by the full scale (M=3.973; SD=0.970). The continuance subscale of O[5]C has the lowest mean of the sample (M=2.983; SD=1.078), with a score below the midpoint.

[5] As this Likert scale ranges from 1 to 7, the considered midpoint of the scale is 4.

Table 5 – OC scale means

		OC	AOC	NOC	COC
Total	n	60	60	60	60
	M	**3,9731**	**4,9222**	**4,0139**	**2,9833**
	SD	0,97029	1,30206	1,42360	1,07825
Age		**OC**	**AOC**	**NOC**	**COC**
up to 30 years old	n	9	9	9	9
	M	**4,3148**	**5,2963**	4,0370	**3,6111**
	SD	0,55347	0,72062	1,02326	0,56519
31 to 40 years old	n	23	23	23	23
	M	3,9348	4,8406	3,8913	3,0725
	SD	1,13653	1,52875	1,55181	1,28592
41 to 50 years old	n	22	22	22	22
	M	3,8232	4,7879	3,9318	2,7500
	SD	1,00610	1,33550	1,51593	1,03861
over 51 years old	n	6	6	**6**	6
	M	4,1574	5,1667	**4,7500**	2,5556
	SD	0,57243	0,98319	1,11430	0,44305
Gender		**OC**	**AOC**	**NOC**	**COC**
Feminine	n	**32**	**32**	**32**	32
	M	**4,0313**	**5,0312**	**4,0990**	2,9635
	SD	0,90399	1,19395	1,40075	0,93588
Masculine	n	28	28	28	**28**
	M	3,9067	4,7976	3,9167	**3,0060**
	SD	1,05377	1,42751	1,46881	1,23851
Rank		**OC**	**AOC**	**NOC**	**COC**
Flag officer or Senior officer (MGEN, BGEN, COR, TCOR, MAJ)	n	36	36	36	36
	M	3,8657	4,8519	4,0648	2,6806
	SD	0,93674	1,33558	1,39288	0,93297
Junior officer (CAP, TEN, ALF)	n	**24**	**24**	24	**24**
	M	**4,1343**	**5,0278**	3,9375	**3,4375**
	SD	1,01715	1,27088	1,49541	1,13976
Job location		**OC**	**AOC**	**NOC**	**COC**
Civilian hospitals (applicable to Residents)	n	**12**	**12**	**12**	**12**
	M	**4,3148**	**5,0972**	**4,1389**	**3,7083**
	SD	0,65706	1,33987	1,22646	0,93508
Air Force Units/Departments/ Services	n	29	29	29	29
	M	3,9061	4,9885	4,0402	2,6897
	SD	1,15213	1,34661	1,67240	1,11156
Units outside the Branch (Armed Forces Hospital, UEFISM, DIRSAM, IASFA)	n	19	19	19	19
	M	3,8596	4,7105	3,8947	2,9737
	SD	0,81152	1,25073	1,16031	0,93006

Table 5 also includes the mean values of OC in the global scale by:

– Age: the highest mean values were obtained by physicians under 30 years of age (M=4.315; SD=0.553)] and the lowest, in the [41,50] age range (M=3.823; SD=1.006);

– Gender: female respondents have the highest mean values (M=4.031; SD=0.904);

– Rank: junior officers have the highest mean values (M=4.134; SD=1.017);

– Place of work: physicians still working in civil hospitals have the highest commitment mean values (M=4.315; SD=0.657) and physicians assigned to Units outside their branch (M=3.860; SD=0.812) have the lowest.

The affective component of commitment obtained the following mean values (Table 5):

– Age: the highest mean values were found in the group under 30 years of age (M= 5.296; SD=0.721) and the lowest, in the age range from [41.50] (M=4.788; SD=1.335);

– Gender: female respondents have the highest mean values (M=5.031; SD=1.194);

– Rank: junior officers have the highest mean values (M=5.028; SD=1.271);

– Place of work: physicians working in civilian hospitals obtained the highest mean values (M=5.097; SD=1.340) and the lowest mean values (M=4.711; SD=1.251) were found in physicians working outside their branch.

The mean values found in the normative commitment subscale (Table 6) were:

– Age: the subgroup over 51 years of age obtained the highest mean values (M=4.750; SD=1.114) and the lowest were found in the range from [31,40] (M=3.891; SD=1.552);

– Gender: female respondents have the highest mean values (M=4.099; SD=1.401);

– Rank : higher rank respondents have highest mean values (M=4.065; SD=1.393);

– Place of work: the highest mean values were found in physicians working in civilian hospitals (M=4.139; SD=1.226) and the lowest, in physicians assigned to Units outside their branch (M=3.895; SD=1.160).

The COC obtained the following mean values:

– Age: the younger officers group obtained the highest mean values (M=3.611; SD=0.565) and the older officers have the lowest (M=2.556; SD=0.443);

– Gender: male respondents have higher mean values (M=3.006; SD=1.239);

– Rank: the junior officers group has higher hest mean values (M=3.437; SD=1.140);

– Place of work: physicians still serving in civilian hospitals obtained the highest mean values (M=3.708; SD=0.935) and the lower mean values were found in physicians assigned to PoAF units, departments or services (M=2.690; SD=1.112).

Statistically significant differences (Table 6) were only found between the mean values of COC, and only in relation to medical officers rank and place of work. Respondents in the Flag officer or Senior officer group have lower mean values than those obtained by the Junior officer group (M_{GenOf}=2.681; SD_{GenOf}=0.933; M_{JunOf}=3.437; SD_{JunOf}=1.140). This difference is statistically significant ($t_{GenOf\text{-}JunOf}$=602.500; <0.01). As for the place of work, the only significant mean differences ($t_{civilian\ hospitals\text{-}PoAF}$=15.800; <0.01) were found between physicians working in civilian hospitals (M=3.708; SD=0.935) and military physicians assigned to PoAF units, departments or services (M=2.690; SD=1.112). Therefore, the first group obtained the highest mean values.

Table 6 – Tests performed to determine the mean differences in OC

Null hypothesis	Test	Sig[a,b]	Decision
Age			
The OC scale distribution is the same in the Age categories.	*Kruskal-Wallis*	0,484	Retain null hypothesis.
The AOC subscale distribution is the same in the Age categories.		0,787	Retain null hypothesis.
The NOC subscale distribution is the same in the Age categories.		0,489	Retain null hypothesis.
The COC subscale distribution is the same in the Age categories.		0,131	Retain null hypothesis.
Gender			
The OC scale distribution is the same in the Gender categories.	*Mann-Whitney U*	0,450	Retain null hypothesis.
The AOC subscale distribution is the same in the Gender categories.		0,548	Retain null hypothesis.
The NOC subscale distribution is the same in the Gender categories.		0,640	Retain null hypothesis.
The COC subscale distribution is the same in the Gender categories.		0,870	Retain null hypothesis.
Rank			
The OC scale distribution is the same in the Rank categories.	*Mann-Whitney U*	0,319	Retain null hypothesis.
The AOC subscale distribution is the same in the Rank categories.		0,468	Retain null hypothesis.
The NOC subscale distribution is the same in the Rank categories.		0,561	Retain null hypothesis.
The COC subscale distribution is the same in the Rank categories.		**0,010**	**Reject null hypothesis.**
Job location			
The OC scale distribution is the same in the Job location categories.	*Kruskal-Wallis*	0,327	Retain null hypothesis.
The AOC subscale distribution is the same in the Job location categories.		0,426	Retain null hypothesis.
The NOC subscale distribution is the same in the Job location categories.		0,928	Retain null hypothesis.
The COC subscale distribution is the same in the Job location categories.		**0,031**	**Reject null hypothesis.**

a. The level of significance is 0.050.
b. Asymptotic significance is displayed.
Non-parametric *Kruskal-Wallis* and *Mann-Whitney U* tests were chosen because the OC scale is ordinal (Marôco, 2014, p.230).

The results obtained by this sample in the scales that measure OC reveal high levels of AOC, which is consistent with the results obtained by Braga and Fachada (2018), Casimiro et al. (2017) and Fachada (2015), and the results of the studys by Afonso (2010) and Silva (2013), in which the affective and normative components of commitment were also predominant.

The continuance component of commitment, or the "*need to stay*" (Allen & Meyer, 1993; Allen & Meyer, 1996; Braga & Fachada, 2018; Fachada, 2015), is higher in the group of junior

medical officers (Captain, Lieutenant and Second Lieutenant) and the group of physicians working in civilian hospitals (the 12 Residents), which represents half of the universe of junior officer physician respondents.

4.4 Relationship between perceived organizational support and organizational commitment among military physicians in the Air Force

Pearson's correlation coefficient was used to analyse the relationship between POS and OC and its three subscales.

Table 7 shows that, with the exception of COC, all types of OC had a positive and significant correlation with the POS scale.

Table 7 – Pearson correlation between POS and OC

	OC	AOC	NOC	COC
POS	**0,492***	**0,490***	**0,474***	0,109

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

These data are generally consistent with the literature, which points to a strong positive relationship between POS and OC, especially in the case of AOC (Eisenberger et al., 1986; Eisenberger et al., 1990; Rhoades et al., 2001; Rhoades & Eisenberger, 2002) and NOC (to a lesser degree) (Chew & Wong, 2008; Honório, 2009). On the other hand, unlike the studies by Eisenberger et al. (1990) and Honório (2009), which found a positive correlation between these two variables, no significant correlation was found between POS and normative commitment, which is consistent with the results obtained by Shore and Wayne (1993).

Therefore:

– H1A is validated, as there is a direct and positive correlation between affective OC and POS among PoAF physicians;

– H1B is validated because there is a direct and positive correlation between normative OC and POS among PoAF physicians;

– H1C is not validated, as no direct and positive correlation was found between continuance OC and POS among PoAF physicians.

This accomplishes Objective 1 and answers the corresponding Research Question 1 – *What is the relationship between OC and POS among military physicians in the PoAF?* The findings show a direct and positive correlation between the two variables, specifically in the affective and normative dimensions of OC. In other words, the more employees perceive that the organization values their work and cares about their well-being, the stronger is the psychological bond between them and the organization, especially in the affective and normative dimensions.

4.5 Mentor's relevance for Air Force military physicians

Table 8 contains the data collected on the mentor's relevance.

Table 8 – *Mentor's relevance*

		Totally disagree	Disagree	Not disagree, nor agree	Agree	Totally agree
Q4.1 Career development is facilitated by the existence of a formal mentor.	n	2	7	13	26	12
	% of N	3,3%	11,7%	21,7%	**43,3%**	**20,0%**
Q4.2 There is greater support from the organization when a formal mentor exists	n	2	8	15	25	10
	% of N	3,3%	13,3%	25,0%	**41,7%**	**16,7%**
Q4.3 A formal mentor facilitates the relationship with the organization.	n	1	6	11	27	15
	% of N	1,7%	10,0%	18,3%	**45,0%**	**25,0%**
Q4.4 A formal mentoring programme does not promote career development. (R)	n	19	21	14	5	1
	% of N	**31,7%**	**35,0%**	23,3%	8,3%	1,7%
Q4.5 A formal mentor promotes the feeling of integration in the organization.	n	2	6	9	28	15
	% of N	3,3%	10,0%	15,0%	**46,7%**	**25,0%**
Q4.6 The existence of a formal mentor does not influence the organizations appreciation of its employees. (R)	n	16	19	10	8	7
	% of N	**26,7%**	**31,7%**	16,7%	13,3%	11,7%
Q4.7 Communication with the organization is facilitated by the existence of a formal mentor.	n	1	4	15	22	18
	% of N	1,7%	6,7%	25,0%	**36,7%**	**30,0%**
Q4.8 Formal mentoring programmes improve motivation and productivity.	n	3	7	15	25	10
	% of N	5,0%	11,7%	25,0%	**41,7%**	**16,7%**
Q4.9 A formal mentor facilitates the assimilation of organizational culture.	n	2	5	7	28	18
	% of N	3,3%	8,3%	11,7%	**46,7%**	**30,0%**
Q4.10 Meeting the organizations standards/ expectations is easier it there is a formal mentor.	n	1	7	14	27	11
	% of N	1,7%	11,7%	23,3%	**45,0%**	**18,3%**
Q4.11 Having a formal mentor does not facilitate communication with the organization. (R)	n	16	29	7	5	3
	% of N	**26,7%**	**48,3%**	11,7%	8,3%	5,0%
Q4.12 A formal mentor is a friend who facilitates the relationship with the organization.	n	6	6	22	21	5
	% of N	10,0%	10,0%	**36,7%**	35,0%	8,3%

A grouped analysis of the positive answers (4 – agree; 5 – strongly agree) and the negative answers (1 – strongly disagree; 2 – disagree) (Table 8) showed that the majority of the military physicians in the sample:

– Agree or strongly agree with: "A formal mentor facilitates the assimilation of organizational culture" (76.7%; n=46); "a formal mentor promotes the feeling of integration in the organization" (71.7%; n=43); "a formal mentor facilitates the relationship with the organization" (70%; n=42); "communication with the organization is facilitated by the

existence of a formal mentor" (66.7%; n=40); "career development is facilitated if there is a formal mentor" (63.3%; n=38); "meeting the organizations standards / expectations is easier if there is a formal mentor" (63.3%; n=38); "there is greater support from the Organization when a formal mentor exists" (58.4%; n=35) and "formal mentoring programmes improve motivation and productivity" (58.4%; n=35);

– Disagree or strongly disagree with the statements: "having a formal mentor does not facilitate communication with the organization" (75%; n=45); "a formal mentoring programme does not promote career development" (66.7%; n=40) and "the existence of a formal mentor does not influence the organizations appreciation of its employees" (58.4%; n=35).

This means that about 70% of responses mention that mentors facilitate communication (Q4.7_66.7%[n=40]; Q4.11(R)_75%[n=45]), improve the relationship with the organization and employees sense of integration (Q4.3_70%[n=42]; Q4.5_71.7%[n=43]) and facilitate the assimilation of the organizational culture (Q4.9_76.7%[n=46]). About 60% of respondents stated that formal mentors have a positive influence on POS (Q4.2_58.4%[n=35]; Q6.6(R)_58.4%[n=35]), career development (Q4.1_63.3%[n=38]; Q4.4(R)_66.7%[n=40]), motivation and productivity (Q4.8_58.4%[n=35]), and that they help employees meet the organizations standards / expectations (Q4.10_63.3%[n=38]).

This confirms the findings of previous studies on the benefits of formal mentoring programmes, such as stabilising and strengthening organizational culture, maintaining high standards of work performance, improving communication and increasing organizational productivity (Hattingh et al., 2005).

4.6 Relationship between perceived organizational support, organizational commitment and *mentor's relevance* among military physicians in the Air Force

Correlations were found between the *PAO, CO* and *mentor's relevance* scales, and a strong positive and significant correlation was identified between the latter and OC (r=0.483; p<0.01); AOC (r=0.430; p<0.01) and NOC (r=0.378; p<0.01); and a positive and significant correlation was found with POS (r=0.310; p<0.05) and COC (r=0.287; p<0.05).

To investigate these correlations more thoroughly – i.e., to understand if the mentor's relevance moderated the relationship between POS and OC in statistical terms – a moderation analysis was performed. As shown in Table 9, the fact that no statistically significant effect was found (as p=0.734 corresponds to a score >0.01) means that there are no moderation effects (Hayes, 2018).

Table 9 – Analysis of the moderating effect of mentoring in the relationship between POS and OC

	Coefficient (b)	*Standard Error*	*t*	*p*
Constant	3,965	0,106	37,561	0,000
POS (x)	0,375	0,117	3,219	0,002
Mentoring (W)	0,5296	0,171	3,105	0,003
POS * Mentoring (X*W)	0,0419	0,123	0,342	0,734

A mediation analysis was also performed to assess whether mentoring (*mentor's relevance*) has a mediating effect on this relationship (POS and OC), using the Process procedure created by Hayes (2022) for SPSS.

The analysis of the *POS* model as a predictor of *OC* mediated by mentoring revealed that:

– The effect of *POS* on mentoring is significant (b=0.228, 95% IC[0.044; 0.413], t=2.480, p<0.05);

– The effect of mentoring on *OC* is significant (b=0.505, 95% IC[0.198; 0.812], t=3.295, p<0.05);

– The direct effect of the model (the influence of POS on OC, not controlled by mentoring) is b=0.384 (95% IC[0.158; 0.610], t=3.400, p<0.05), in which the model explains 36.29% of the total variance;

– The total effect of the model (the influence of *POS* on *OC*, controlled by mentoring) is b=0.499 (95% IC[0.267; 0.732], t=4.298, p<0.001), and the model explains 24.16% of the total variance.

A diagram depicting these relationships and the corresponding b values are shown in Figure 2. Mentoring is a mediating variable in the relationship of OC with POS, and has a significant mediation effect (indirect effect), b=0.115 (95% BCa IC[0.0005; 0.2454]). In other words, POS as a predictor of OC is mediated by mentoring.

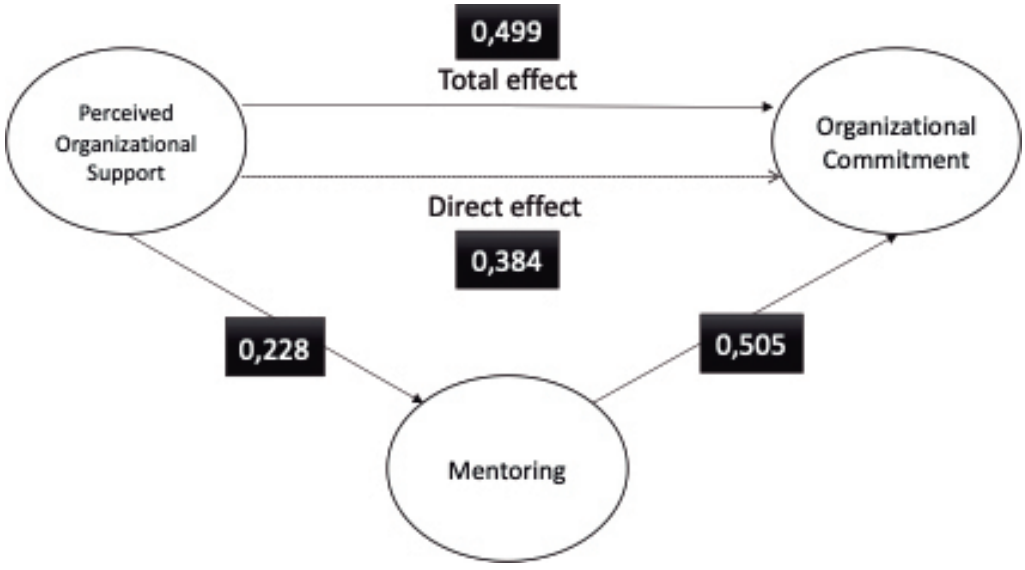

Figure 2 – Model of perceived organizational support as a predictor of organizational commitment mediated by mentoring.[6]

[6] The *Bias-Corrected and Accelerated* (BCa) interval of confidence was calculated using the bootstrapping technique (5000 resamples).

The study confirmed the existence of a correlation between POS and OC (AOC and NOC), and the answers given by the PoAF's military physicians regarding the relevance of mentors are consistent with the benefits of mentoring described in other studies (Hattingh et al, 2005; Hegstad, 1999). Furthermore, significant correlations were found in the survey sample between the mentor's relevance and POS (Allen et al. 2008; Park et al. 2016), and between the *mentor's relevance* and OC, especially in the affective dimension of commitment, but also in the normative dimension (Hegstad, 1999). Moreover, mentoring (mentor's relevance role) had a mediating effect on the relationship between POS and commitment (OC). Therefore:

– Based on the findings, H2 is validated, as the existence of a formal mentor is positively correlated with the relationship between POS and OC among PoAF military physicians.

This provided the answer to Research Question 2 – *What is the influence of mentors in the relationship between POS and OC among military physicians in the PoAF?* and accomplished Objective 2 of this dissertation. In other words, the existence of a formal mentor is perceived as relevant by this sample of PoAF military physicians. Additionally, it has a correlation with OC and POS, and mediates their relationship. Therefore, it is a relevant factor that could increase POS and OC among these physicians.

To better ascertain / target the most relevant aspects of a formal mentoring programme for these officers, the respondents were asked if these programmes facilitate personal development and career advancement (Table 10).

Table 10 – Assessment of the usefulness of a formal mentoring programme for personal and career development

Q4.13 If a formal mentoring program was set up for Air Force medical officers, it would be useful for:		Nothing useful	Not very useful	Indifferent	Useful	Very useful
Q4.13.1 Guidance in military career planning/ development.	n	7	4	7	**32**	16
	%	11,7%	6,7%	11,7%	**53,3%**	26,7%
Q4.13.2 Guidance on technical issues related to medicine.	n	7	4	7	**33**	12
	%	11,7%	6,7%	11,7%	**55,0%**	20,0%
Q4.13.3 Guidance on bureaucratic/institutional issues.	n	1	3	1	23	**32**
	%	1,7%	5,0%	1,7%	38,3%	**53,3%**
Q4.13.4 Guidance on leadership attitudes/ behaviors.	n	13	2	13	**33**	10
	%	21,7%	3,3%	21,7%	**55,0%**	16,7%
Q4.13.5 Guidance on communication attitudes/ methods.	n	13	3	13	**33**	9
	%	21,7%	5,0%	21,7%	**55,0%**	15,0%
Q4.13.6 Guidance in time and task management.	n	13	10	13	**25**	8
	%	21,7%	16,7%	21,7%	**41,7%**	13,3%
Q4.13.7 Help in planning/development of professional projects.	n	11	5	11	**29**	14
	%	18,3%	8,3%	18,3%	**48,3%**	23,3%
Q4.13.8 Help in development/facilitation of contacts within the organization.	n	1	2	1	27	**29**
	%	1,7%	3,3%	1,7%	45,0%	**48,3%**
Q4.13.9 Help in guidance/development of personal projects.	n	14	7	14	**29**	7
	%	23,3%	11,7%	23,3%	**48,3%**	**11,7%**

Table 10 shows that the majority of the sample believes that a formal mentoring program is useful or very useful because it "[...] fosters / facilitates contacts within the organization" (93.3%;n=56) and provides guidance on: "[...] bureaucratic / institutional issues" (91.6%;n=55); "[...] military career planning / developement" (80%;n=48); "[...] technical issues related to medicine" (75%;n=45); "[...] leadership attitudes / behaviours" (71.7%;n=43); "[...] planning / development of professional projects" (71.6%;n=43); "communication attitudes / methods" (70%;n=42); "[...] the development of personal projects" (60%;n=36); "time and task management" (55%;n=33).

Finally, respondents were asked about the ideal characteristics of the mentor, that is, the ones that would be most useful for a formal mentoring programme. The answers are provided in Table 11.

Table 11 – Assessment of useful characteristics for a formal mentoring programme

Q4.14 If a formal mentoring program was set up for Air Force medical officers, the same would be useful if:		Nothing useful	Not very useful	Indifferent	Useful	Very useful
Q4.14.1 The mentor was a military, not a doctor, from the rank immediately above mine.	n	19	**23**	9	8	1
	%	31,7%	**38,3%**	15,0%	13,3%	1,7%
Q4.14.2 The mentor was a military, not a doctor, with any rank above mine.	n	17	**25**	10	8	0
	%	28,3%	**41,7%**	16,7%	13,3%	0,0%
Q4.14.3. The mentor was a military doctor, with the rank immediately above mine, regardless of his area of medical specialty.	n	3	6	12	**32**	7
	%	5,0%	10,0%	20,0%	**53,3%**	11,7%
Q4.14.4. The mentor was a military doctor, with the rank immediately above mine, from my medical specialty.	n	1	3	11	22	**23**
	%	1,7%	5,0%	18,3%	36,7%	**38,3%**
Q4.14.5 The mentor was a military doctor, with any rank above mine, but of my medical specialty.	n	1	3	11	21	**24**
	%	1,7%	5,0%	18,3%	35,0%	**40,0%**
Q4.14.6 The mentor was a military doctor, with any rank above mine, of any area of medical specialty.	n	3	7	11	**31**	8
	%	5,0%	11,7%	18,3%	**51,7%**	13,3%
Q4.14.7 The mentor was the same throughout my career, regardless of my job location.	n	4	7	14	**24**	11
	%	6,7%	11,7%	23,3%	**40,0%**	18,3%
Q4.14.8 The mentor changed throughout my career, depending on my job location.	n	12	12	13	**19**	4
	%	20,0%	20,0%	21,7%	**31,7%**	6,7%

Table 11 shows that most respondents answered that it would be useful and very useful if a mentor is:

– A military physician (Q4.14.3_ 65%[n=39]; Q4.14.4_75%[n=45], Q4.14.5_75%[n=45]; Q4.14.6_65%[n=39]) rather than a non physician military (Q4.14.1_15%[n=9]; Q4.14.2_13.3%[n=9];

– A specialist in the same area of expertise as their mentee (Q4.14.4_75%[n=45]; Q4.14.5_75%[n=45]), rather than in another area (Q4.14.3_65%[n=39]; Q4.14.6_65%[n=39]);

– The same throughout the mentee's career, regardless of the unit they are assigned to (Q4.14.7_58.3%[n=35]), rather than having different mentors at different points in their career, depending on the unit where they serve (Q4.14.8_38.4%[n=23]).

– Have a rank either immediately above the mentee's (Q4.14.3_65%[n=39]; Q4.14.4_75%[n=45]) or any other rank above the mentee's (Q4.14.5_75%[n=45]; Q4.14.6_65%[n=39]) (this is an indifferent variable).

Finally, to complement the *a priori* categories (usefulness for personal development, usefulness for career development and mentor characteristics), and based on the content analysis performed on the open ended question about the creation of a formal mentoring programme model for the PoAF's military physicians (Table 12), which was answered by 18.3% (n=11) of respondents, three emerging categories were found:

– Regulations;

– Appointment;

– Training.

Table 12 – Content analysis (emerging categories)

Regulations	– The key to keeping medical officers in the military is to ensure minimum working conditions for the good of our patients and our sanity (including in ethical and legal terms), and **to have well established the rules of the "contract"** with the organization. Only by having this guaranteed we can focus on aligning our growth and satisfaction, both personal and professional, with the military career. Not being guaranteed minimums, they try to fix doctors at all costs, namely increasing years of service without a **legal basis**, requiring extra services for Residents, etc., without any concern for people - doctors, patients, families. There's always a way out. To those who have decision-making power an appeal: do not let military health die. – **Define meeting moments and a pre-established plan/guidance/policies** so that the process is not dependent on the availability/initiative of the parties. – **It should be allocated a weekly or monthly** schedule for the performance of mentoring (with the partial examption of other functions or positions), as well as created interconnection mechanisms with the Branch Health Directorats, Armed Forces Hospital, Medical Internship and Health Regional Administration, according to the path of the Medical Officer. – This **bond can be formalized** or, alternatively, foster the pre-existing spirit and philosophy, emphasizing the moral duty to which any one is obliged, to help, unconditionally, the younger ones ("all the children of the world are my children..."). – Regardless of mentors, physicians, non-physicians, of the same specialty or not, what matters is that the organization **maintains proximity, support and concern for professionals**. In a profession where one enters by vocation and will, it is very strange that the organization does not try to keep that vocation alive. – A formal mentoring program would facilitate the way the organization seas me and the way I see the organization. It would certainly **improve our relationship**! – The proposed program would be especially **useful, in the ranks of junior medical officers.**
Appointment	– Consider the choice, i.e. through **a proposal (from the mentor himself)** plus **interview/previous meeting to assess vision compatibility, purpose** of both parties. – Start the **process early since the training period (Air Force Academy-AFA) where the potential of mentoring has greater impact and usefulness**; at this stage eventually **consider junior medical officers for mentoring military medical students** becouse their passage by the same period is more recent and so they can relate more easely whit the current reality. – **Eventually consider 2 mentors**: 1 from the area of specialization and a second (non-medical or from another medical area) to promote greater diversity and scope of vision and knowledge/experience in the institution. – I would say that informal mentoring has always existed, especially from older military doctors, of higher rank, who have always felt, as a duty, the support and tutor the younger ones, in the progression of the military career and medical specialization.

[Cont.]

	By being tutored, receiving this support, each military physician acquires the ethical duty to support and protect the younger ones, regardless of the existence of a formal bond. I have always felt **from older military, the permanent willingness to help the younger ones**, without conditioning or counterparts, and regardless of the specialty. Thus, an ethical bond was created, which transforms the organization into a family of solidarity. – The **formalization of the bond can have advantages and risks, depending on how it is done: the tutor can be imposed by the organization, with risks of collision or incompatibility of personalities, cultures or ways of being, or can be chosen by the meentee, after recognition period, as a "master", in which he recognizes a model of ideal behavior.** – I think that the creation of a formal mentoring program for Air Force medical officers would be important, **from the beginning of the AFA, as of the technical-military internship, going through the specialty phase and throughout the career.** However, I recognize that it can also create a work overload for the mentor. Besides, often, the communication between the doctor and the institution is not the most direct possible. – **I recommend a military doctor of any specialty, but with higher rank. With the immediately above rank can compromise the promotion.** – It would be **especially important in the early years at the institution.** The pair **could change on request, either from the tutor or the mentee.**
Training	– **Training for the mentors, in order to ensure the fulfillment of mentoring.**

Based on the input that was collected and the analysis performed on the findings, a basic model of a formal mentoring programme for the PoAF's military physicians was prepared, as shown in Figure 3.

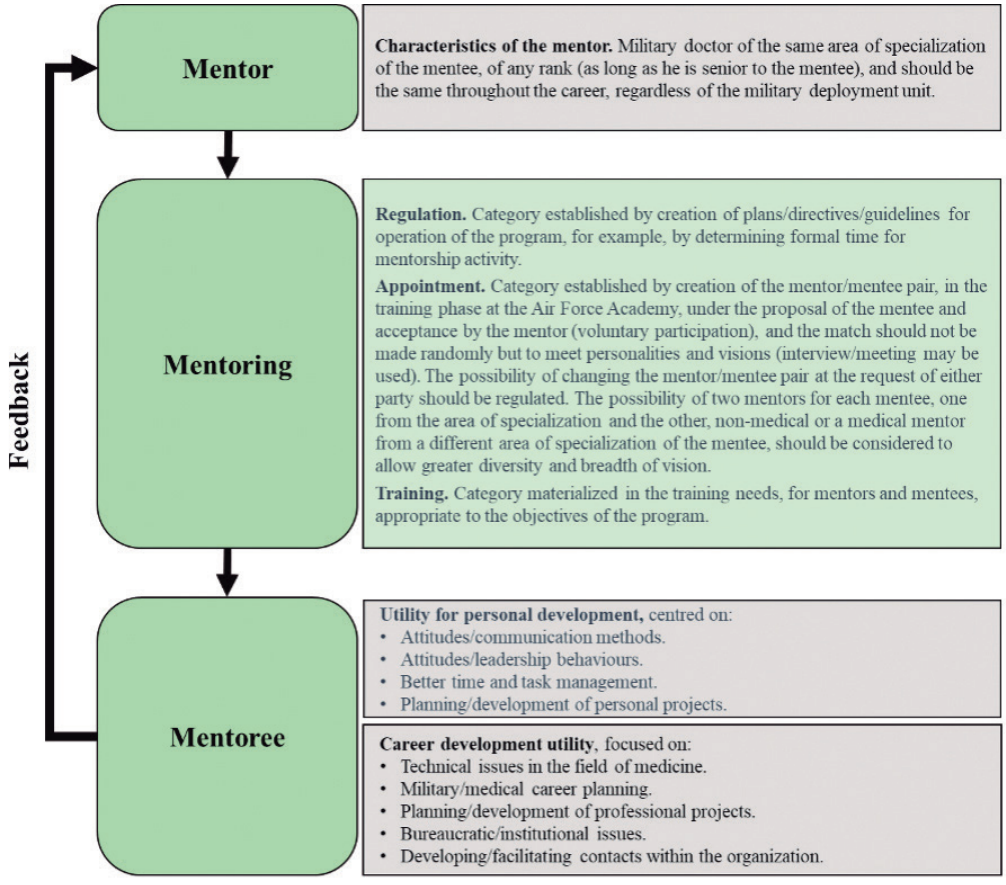

Figure 3 – Proposed model of a formal mentoring programme for the PoAF's military physicians

4.7 Association between *mentor's relevance*, perceived organizational support, organizational commitment, and turnover among military physicians in the PoAF

The analysis of H3:

– Validated H1a and H1b – there is a (direct and proportional) relationship between OC (especially in the affective dimension, but also in the normative dimension) and POS, that is, when the former is higher, the latter also increases (Rhoades et al, 2001) – and H2, as the findings suggest that the existence of a formal mentor influences POS and OC (Allen et al., 2008; Hegstad, 1999; Park et al., 2016) and mediates their relationship;

– Confirmed that higher levels of affective OC are directly and negatively related to turnover rates (Eisenberger et al., 1986; Eisenberger et al., 1990; Foong-Ming, 2008; Rhoades et al., 2001; Rhoades & Eisenberger, 2002), that there is a negative correlation between POS and turnover, and that this relationship is mediated by AOC (Eisenberger et al., 2002; Park et al., 2016);

– Revealed that mentoring is a people management practice that has a positive effect on POS (Allen et al., 2008; Park et al., 2016) and OC (Hegstad, 1999), and that mentoring is relevant for reducing turnover, according to other studies that surveyed a military population (Combs et al., 2002; Prevosto, 2001);

Therefore:

– H3 is validated – Mentoring, as a people management practice that increases POS and OC, is associated with lower military physician turnover in the PoAF.

These findings provide an answer to Research Question 3 – *What is the role of mentoring, as a people management practice that increases POS and OC, on physician turnover in the PoAF?* This accomplishes Objective 3. In other words, the study confirmed that mentoring is a people management practice that increases POS and OC, which, in turn, decrease turnover among military physicians in the PoAF.

5. Conclusions

The new millennium brought with it political, economic, demographic and social changes that reduced the recruitment pool of the Portuguese AAFF (Rijo et al., 2018; Magalhaes & Vaz-Pinto, 2020), a problem that several other NATO countries are also facing (NATO, 2007). As in other NATO countries (NATO, 2012), this drop in recruitment has been compounded by an increase in turnover, and the Portuguese AAFF have reported difficulties retaining military physicians (Braga & Fachada, 2018; Branco, 2018). To a certain degree, turnover is desirable as a way of renewing staff. However, it always involves losses for the organization (Holtom et al., 2005; Oliveira, 2009), especially in highly specialised and trained careers that require a high level of readiness, as is the case of military physicians (Dupré & Day, 2007).

The USAF has had a mentoring programme for over 20 years (Gleiman & Gleiman, 2020; Lancaster, 2003). One of the goals of this programme is to ensure that the organization is able to maintain the number and level of difficulty of its operations by increasing retention and reducing turnover (Budd, 2007). Only a few studies have analysed a military population to confirm the existence of a relationship between mentoring and turnover in this highly specific universe. However, according to Combs et al. (2002) and Prevosto (2001), there is a correlation, in which the first decreases the latter.

This study analysed the relationship between OC and the POS among military physicians in the PoAF and assessed the role of mentors in this relationship and its effect on the turnover of these high value assets.

The analyses performed on the collected data and the findings described in the discussion section showed that the survey sample has high levels of affective OC (*"want to stay"*), which confirms the results obtained in other surveys of PoAF personnel – Braga and Fachada (2018), Casimiro et al. (2017) and Fachada (2015) –, and in studies that surveyed a Portuguese military population – Afonso (2010), Duque (2000) and Silva (2013). Therefore, the fact that OC, especially affective OC, is directly and negatively related to turnover rates (Eisenberger et al., 1986; Eisenberger et al., 1990; Foong-Ming, 2008; Rhoades & Eisenberger, 2002) suggests that PoAF military physicians usually decide to leave the organization due to factors related

to "psychological (lack of) commitment to the organization", as confirmed by Braga and Fachada (2018). Furthermore, COC ("*need to stay*") is higher in the group of junior military physicians (Captain, Lieutenant and Second Lieutenant) and in the group of physicians still working in civilian hospitals, i.e., Residents, which represents half of the respondents in the junior officers group. This could be due to the fact that these officers have not yet completed their speciality, and therefore have the most to lose by leaving the organization.

The analysis also showed that this sample has low levels of POS (with overall values below the midpoint) and that the mean differences in POS between the different groups in the sample are only statistically significant between the group of physicians over 51 years of age and the other groups (it was the only group that had POS mean values above the midpoint). This could be explained by the fact that the respondents in this group are the ones who choose to remain because they have felt and continue to feel supported by the organization.

A significant correlation was found between POS and OC for the surveyed sample, which is generally consistent with the results of other studies, suggesting that there is a strong positive relationship between POS and OC, and especially affective commitment (Eisenberger et al., 1986; Eisenberger et al., 1990; Rhoades et al., 2001; Rhoades & Eisenberger, 2002) and, to a lesser degree, normative commitment (Chew & Wong, 2008; Honório, 2009).

According to Eisenberger et al. (2004) and Rhoades and Eisenberger (2002), certain people management practices have been shown to increase POS. This is the case of mentoring (Allenet al., 2008; Park et al., 2016), which is also linked to higher levels of OC (Hegstad, 1999). Therefore, the answers about the *mentor's relevance* showed that the most relevant benefits are: facilitating communication, improving the relationship with the organization and a sense of integration, facilitating the assimilation of the organizational culture, POS, career development, motivation and productivity, as well as helping mentees meet the organization's expectations, i.e. the benefits of formal mentoring programmes mentioned in several studies (Hattingh et al., 2005; Hegstad, 1999).

After treating the data obtained from the *POS*, *OC* and *mentor's relevance* scales, positive and significant correlations were identified between these three variables, especially in the affective and normative dimensions of commitment. This is also generally consistent with other studies (Allen et al., 2008; Hegstad, 1999; Park et al., 2016). Furthermore, in this sample, the correlation was stronger in the mentoring / OC and mentoring / AOC relationships than in the mentoring / POS correlation, even though the relationship with POS is more frequently described in the literature. Additionally, mentoring was found to have a mediating effect on the relationship between POS and OC.

Considering that military physicians in the PoAF agree that formal mentoring is important, and that there is a positive correlation between mentoring and OC, (especially affective OC) and between mentoring and POS (and that mentoring has a mediating effect on the POS/ OC relationship), it is likely that the implementation of a mentoring programme would be well accepted because it is considered relevant by the sample. Furthermore, it could also increase POS and OC (global and affective) and, possibly, reduce turnover (Allen et al, 2008; Eisenberger et al. 2022; Park et al, 2016).

This study **contributes to knowledge** because it ascertains the main type of OC for this sample of PoAF military physicians and confirms the correlation between POS and the affective and normative dimensions of OC, and because a new scale was developed and validated – the *mentor's relevance* scale. As this scale is unidimensional and has only 12 items, it can be used in future studies to assess the relevance of creating formal mentoring programmes, both in military and civilian organizations. The study also found a correlation between *mentor's relevance* and POS, and between *mentor's relevance* and OC, and a mediating effect of mentoring, as a variable of the *mentor's relevance* scale, on the POS / OC relationship. As for practical contributions, this study provides a better understanding of how mentoring influences the OC / POS relationship, which, in turn, decreases military physician turnover in the PoAF, and proposes a model for a formal mentoring program adapted to the specific needs of these medical professionals, which would help prevent the voluntary exit of these high value assets from the organization.

The study has some **limitations**, which are not related to the study design and do not affect the relevance of the findings. The most important limitation is the relatively small size of universe and related sample analysed in the survey. While this meant that the initial factor models obtained for the POS and OC scales could not be considered (one of the reasons for the decision to use the original models), it also implicated a significant and beneficial advantage for the study as the data and findings were obtained from 88.3% of the PoAF's military physicians. The second limitation refers to the use of self reporting questionnaires, as the answers can be biased due to the social desirability effect. However, this effect was not significant because, overall, the data / findings of this study were consistent with previous studies.

If a formal mentoring programme for PoAF military physicians like the one proposed here is implemented, **future studies** will be needed to define indicators and use them to assess its effectiveness / efficiency. These studies should be carried out 2/3 years after the programme's implementation. It would also be important to replicate this study with a larger universe of Portuguese military physicians, in order to further validate the factor models for the concepts studied here.

Finally, the findings of this study can help the decision makers responsible for managing the PoAF staff define measures to retain the organization's military physicians.

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