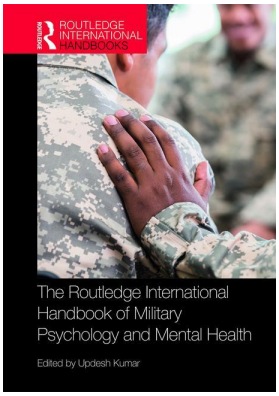

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MILITARY BURNOUT AND WORK ENGAGEMENT

A qualitative systematic literature review

Maria José Chambel, Sílvia Lopes, Filipa Castanheira, and Carolina Rodrigues-Silveira

The military context has been acknowledged as a setting with different types of working conditions that influence military well-being. However, what do we actually know about military well-being and its development over time? Previous reviews on the topic have tended to be limited and geared towards analyzing specific situations or/and samples. For example, Buckman et al. (2011) conducted a systematic review of studies examining the effects of deployment length and a 'mismatch' between the expected and actual length of deployments on the health and well-being of military personnel. Bauer, Newbury-Birch, Robalino, Ferguson, and Wigham (2018) conducted a systematic review of the effectiveness of well-being interventions for military personnel adjusting to civilian life. Smith-MacDonald, Norris, Raffin-Bouchal and Sinclair (2017) conducted a systematic review to analyze the relationship between spirituality and mental well-being in combat veterans. No systematic review has been conducted on the burnout and work engagement of military personnel. Given that burnout and work engagement are probably the most disseminated indicators of work well-being, to which much of occupational health research is dedicated (Marques-Pinto & Chambel, 2008), an integration of the research on this topic will contribute to further data-based knowledge and will facilitate future research by shedding light upon current gaps in the literature.

Burnout, which has a longer history, was identified in the 1970s by Freudenberger and Maslach as a state of emotional exhaustion and loss of motivation and commitment, affecting aid-providing professionals as a response to limitations (overly high expectations, bureaucracy, absence of financial resources and support, loss of authority) in their work context (Schaufeli & Enzmann, 1998). Later on, Maslach and colleagues redefined the concept of burnout as a crisis in the relationship with work, affecting workers of different professional areas, not only aid-providing professionals, characterized by three dimensions: exhaustion – general reactions to stress, such as emotional and physical fatigue, depression, psychosomatic complaints and anxiety; cynicism (depersonalization) – an attitude of indifference or mental detachment, divestment towards work; the loss of professional efficacy (loss of personal fulfillment) – decreased feelings of self-efficacy at work (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Maslach, Jackson, & Leiter, 1996).

In line with a positive psychology trend, the concept of work engagement emerged more recently, characterized by high levels of energy, involvement and motivation in the fulfillment of one's work (Schaufeli & Buunk, 2003). The concept was introduced by Kahn (1990), as an individual's strong identification with his/her work which, in a dynamic relationship, leads to the individual investing high energy levels in the performance of his/her tasks, consequently giving rise to high involvement in this performance. It should be noted that in its initial formulation, this positive psychological state of engagement was regarded as the opposite pole to burnout, and it was only necessary to invert the level of the latter to identify the level of engagement. In the meantime, Schaufeli and colleagues (Schaufeli & Bakker, 2004; Schaufeli, Salanova, González-Romá & Bakker, 2002) developed a new perspective which considers work engagement as a positive cognitive-affective state, characterized by vigor, dedication and absorption. Vigor is conveyed through high levels of energy and mental resilience and the desire and ability to invest efforts in one's work; dedication is characterized as a feeling of relevance, enthusiasm, inspiration, pride and challenge towards one's work; and absorption is similar to a state of persistent flow (Csikszentmihalyi, 1990), in which the individual is immersed in concentration, losing his/her sense of the passage of time, and happy in his/her work involvement. This psychological state of engagement is a positive indicator of work well-being, which presents a negative and relatively weak relationship with burnout. Thus, having work engagement is more than simply not having burnout, and its evaluation should therefore be specific. In fact, in order to analyze both burnout and engagement, two separate processes need to be examined, since the determinants that trigger well-being in individuals are not necessarily the absence of the determinants that contribute to ill-being and pathology (Seligman & Csikszentmihalyi, 2000).

The conservation of resources (COR) theory has been used to explain the development of burnout and work engagement (Hobfoll, 2002). This theory considers that individuals wish to obtain and retain valued resources, namely objects (e.g. tools), personal characteristics (e.g. emotional stability), conditions (e.g. social support) and energies (e.g. money) that they value as a means to acquire and strengthen other resources. Thus, they will seek to maximize resource gains while minimizing resource losses and avoiding potential threats. The threat of loss, actual loss or lack of a gain of resources after investment is conceptualized as demands. That is, as stress mounts, the individual must increasingly divert psychological resources to combat its negative effects until those resources are exhausted and the individual feels overwhelmed and no longer able to cope with work. Thus, the prolonged experience of low resources and high demands leads to an erosion of other resources such as energy, identification and perceived efficacy, which is the burnout process (Hobfoll, Freedy, Lane, & Geller, 1990). In fact, in the work context, burnout may be frequent, particularly because work demands typically enclose a higher rate of resources used by employees, in comparison with the rate of resources the employees are able to replenish (Freedy & Hobfoll, 1994). However, high resources in a high-demand environment should lead to optimal functioning, leading to a reinvestment of resources such as time and energy into the work environment. Thus, engagement can be conceptualized as a result of continuous resource gain, since initial gain begets further gain. Individuals who possess strong resource pools experience spirals of resource gain, and that resource surplus promotes engagement. In accordance with the COR, the relationship between job demands and strain (burnout) depends on the investment of resources, and the relationship between job resources and well-being (engagement) is reliant upon the accumulation of more resources. In fact, this theory assumes that employees' burnout and engagement will increase or decrease over time in response to changes in resources, while engagement occurs either as a "gain/loss cycle" and burnout either as a "downward/upward spiral."

Method

Procedure

To provide an indication of the potential size and nature of the available literature examining the work engagement and burnout of military personnel, a qualitative systematic review was conducted (Paré, Trudel, Jaana, & Kitsiou, 2015). We followed the recommendations of Daudt, van Mossel, and Scott (2013) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Liberati et al., 2009).

The first step of the systematic review consisted of using two databases, namely ISI Web of Science and MEDLINE. Titles and abstracts were identified using two queries. The first query used the combination ["work engagement" AND "military"]. The second query used the combination ["burnout" AND "military"]. A total of 374 papers were found. An initial screening was then conducted in order to remove duplicates and non-English language papers, and a total of 315 papers remained for the next step of the systematic review.

In order to eliminate papers that did not address the scope of the present review, inclusion and exclusion criteria were established (Daudt et al., 2013). The inclusion criteria were: (1) studies conducted with military personnel sample, (2) empirical qualitative and quantitative studies, (3) evaluating work engagement or/and burnout and (4) being published in a scientific journal. As exclusion criteria, the following were not included: (1) literature reviews and meta-analyses, including an indirect analysis of work engagement and burnout; (2) studies with a mixed sample composed not only of military personnel but also civilians and (3) studies published in Congress proceedings.

On the basis of the inclusion and exclusion criteria, two reviewers critically and independently appraised the quality of 315 papers by assessing each paper's title and correspondent abstract. As a result of the titles and abstracts' appraisal, a total of 62 papers were considered to meet the inclusion criteria. A third reviewer then checked the remaining papers and analyzed all 62 full-text articles. Following the full-text articles' analysis, 11 papers were excluded, due to the fact that they did not evaluate work engagement and/or burnout, and 2 had been published in Congress proceedings. Hence, 49 papers met the inclusion criteria and were used to perform the qualitative systematic review. In Figure 20.1, it is possible to observe the flow diagram of the systematic selection of studies undertaken in the present study.

Analysis

Table 9.1 summarizes the reviewed studies, providing information on (a) area of publication (i.e. *Psychology, Social Sciences* vs. *Medicine, Health, Mental Health, Nursing*), (b) country, (c) participants (i.e. sample size), (d) study design (i.e. cross-sectional, longitudinal, intervention), (e) indicator studied (i.e. burnout, engagement, both), (f) levels of burnout/work engagement, (g) antecedents/consequences of the studied military burnout and engagement (i.e. individual vs. contextual).

Results

When, where and what is investigated?

The review of the articles (see Table 20.1) revealed that publications began in 1986 but were scarce (i.e. zero, one or two studies per year) up to 2009, while in 2015 and 2016, more published studies were observed, eight and seven, respectively. Regarding the choice of journal publications, this review pointed to a high diversity, and the majority of journals had published only one or

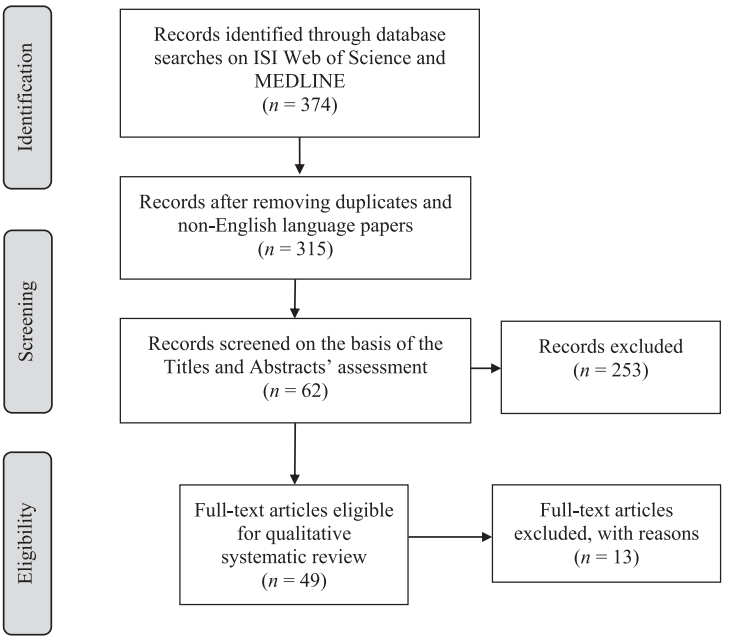

Figure 20.1 Flow diagram of the systematic selection of studies.

Source: Adapted from Liberati et al. 2009.

two studies, with the exception of *Military Psychology* (n = 8) and *Military Medicine* (n = 11). As for the scientific area of these publications, the review revealed that around half (n = 26) had been published in *Psychology* and *Social Sciences* and the other (n = 23) in *Medicine, Health, Mental Health and Nursing*. The majority of the studies had been conducted in the United States (n = 30) and Europe (n = 12), and most had focused on the negative side of military well-being: over half of the analyzed articles (n = 34) concentrated on burnout, work engagement was investigated in 11, and both burnout and work engagement in 4 studies.

Who was investigated, how and for what purpose?

The sample size used varied from 32 to 320,503, although the typical sample size varied mostly due to the nature of the studies. Indeed, it was common to find samples with hundreds of military personnel in specific studies of militaries that had been deployed in peacekeeping missions (Boermans, Kamphuis, Delahaij, van den Berg, & Euwema, 2014; Chambel & Oliveira-Cruz, 2010), whereas other studies presented smaller samples only with dozens of participants focusing on trainees from specific courses (Morgan et al., 2011) or occupations (mostly health care providers such as nurses: Bartz & Maloney, 1986; van Wijk, 1997; physicians: Simons et al., 2016; or dentists: Shelley & Wong, 1991), while others focused on more general larger samples with thousands of participants, for example the population of active workers for the National Army (Bryan, Goodman, Chappelle, Prince & Thompson, 2018; Ivey, Blanc, & Mantler, 2015; Jiang et al., 2015; Vie, Scheier, Lester, & Seligman, 2016). Of the analyzed articles, 19 used occupational/organizational specific samples, whereas heterogeneous samples, that is, samples comprising participants with various occupations, were used in 30 of the studies. Health services (i.e. nurses, psychiatrists) were the most frequently investigated.

Table 20.1 Study characteristics

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being [rating scale/range score]*	*Aim of study*
Adler et al. (2017)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, correlation and regression analysis.	344 U.S. military medical staff members.	(MBI-HSS) Emotional Exhaustion = 13.4 [0–18 points]; Depersonalization = 11.7 [0–18 points]	Antecedents of burnout: self-care, team care and health-promotion leadership as independent variables.
Afonso & Gomes (2009)	Psychology/Psicologia Reflexão e Crítica (Psychology, Social Sciences)	Portugal	Quantitative, cross-sectional, descriptive statistics and regression models.	95 Portuguese military agents of the Republican National Guard.	(MBI-GS) emotional exhaustion = 1.68 [0–6 points]; cynicism = 1.82 [0–6 points]; personal accomplishment = 4.69 [0–6 points]	Antecedents of burnout: global stress, proactive coping, desire to leave the job/profession, organizational commitment and satisfaction with life.
Alessandri et al. (2018)	Journal of Occupational and Organizational Psychology (Psychology, Social Sciences)	Italy	Quantitative, longitudinal, two-wave study, 1 year time-lag.	416 new military cadets of an Italian military academy.	(MBI-GS) Mean values for burnout were not provided	Antecedents of burnout: Emotional stability as an independent variable and self-efficacy beliefs in managing negative emotions at work as a mediator variable.
Alves, Bendassolli, & Gondim (2017)	Avances en Psicología Latinoamericana (Psychology, Social Sciences)	Brazil	Quantitative, cross-sectional, validity study.	525 Brazilian police officers.	(MBI-HSS) Emotional Exhaustion = 31.3 [0–54 points]	Antecedents of burnout: emotional labor as an independent variable.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Bakir, Ozer, Ozcan, Cetin, & Fedai (2010)	Bulletin of Clinical Psychopharmacology (Medicine, Health, Mental Health, Nurse)	Turkey	Quantitative, cross-sectional, descriptive statistics.	377 Turkish military nurses in Ankara.	(MBI – Turkish version) emotional exhaustion = 24.8 for <29 years, and 25.3 for >30 years [0–36 points]; depersonalization = 10.7 for <29 years, and 10.6 for > 30 years [0–20 points]; personal accomplishment = 20.8 for < 29 years, and 20.7 for > 30 years [0–40 points]	Antecedents of burnout: Depressive symptoms as the independent variable.
Ballenger-Browning et al. (2011)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics and regression models.	97 mental health providers at military facilities.	(MBI-HSS) emotional exhaustion = 16.6 [0–54 points]; depersonalization = 4.3 [0–30 points]; personal accomplishment = 39.7 [0–54 points]	Antecedents of burnout: provider demographics, social support, institutional factors and beliefs about psychotherapy and medication used as independent variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Bartz & Maloney (1986)	Research in Nursing & Health (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive analysis and regression models.	89 full-time registered intensive care nurses.	(MBI-HSS) emotional exhaustion = 21.49 [0–54 points]; depersonalization = 6.60 [0–30 points]; personal accomplishment = 37.11 [0–48 points]	Antecedents of burnout: demographic variables as independent variables.
Boermans, Kamphuis, Delahaij, van den Berg, & Euwema (2014)	Stress and Health (Psychology, Social Sciences)	Netherlands	Quantitative, longitudinal, two-wave study, 6 month time-lag.	971 Dutch Armed Forces peacekeepers.	(UWES) Teamwork Engagement = 4.28 [0–6 points]	Antecedents and consequents of teamwork engagement: Organizational constraints during a military operation as an independent variable and fatigue symptoms as the dependent variable.
Britt & Bliese (2003)	Journal of Personality (Psychology, Social Sciences)	USA	Quantitative, cross-sectional, multilevel analysis.	1,181 U.S. soldiers deployed on a peacekeeping mission.	(a) Self-engagement = 4.20 [1–5 points]	Antecedents and consequents of self-engagement: stressors (lower amounts of sleep, work stress, family stress) as independent variables and psychological distress as dependent variable.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Britt, Adler, & Bartone (2001)	Journal of Occupational Health Psychology (Psychology, Social Sciences)	USA	Quantitative, longitudinal, two-wave study, 4–5 month time-lag.	161 soldiers.	(b) Engagement = 3.93 [1–5 points]	Antecedents and consequents of work engagement: personality hardiness as the independent variable and deriving benefits from the deployment as the dependent variable.
Britt, Castro, & Adler (2005)	Personality and Social Psychology Bulletin (Psychology, Social Sciences)	USA	Quantitative, longitudinal, two-wave study, 3–4 month time-lag.	176 soldiers currently working at their home station.	(a) Self-engagement = 3.72 [1–5 points]	Antecedents and consequents of work engagement: work demands (days training, work hours and subjective work overload) as independent variables and physical symptoms as the dependent variable.
Britt, Dickinson, Moore, Castro, & Adler (2007)	Journal of Occupational Health Psychology (Psychology, Social Sciences)	USA	Quantitative, longitudinal, two-wave study, 6 month time-lag.	1,685 U.S. soldiers on a peacekeeping mission to Kosovo.	(a) Mean value for job engagement was not provided [1–5 points]	Consequents of work engagement: morale and benefits of deploying as dependent variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Bryan, Goodman, Chappelle, Prince & Thompson (2018)	Military Psychology (Psychology, Social Sciences)	USA	Quantitative, cross-sectional, latent profile analysis.	7,550 U.S. Air Force remote warriors.	(MBI-GS) Exhaustion = 13.4 [0–30 points]; Cynicism = 11.7 [0–30 points]; Professional Efficacy = 24.4 [0–36 points].	Antecedents of burnout: demographics and Air Force remote warriors' career as independent variables.
Carvalho & Chambel (2017)	Armed Forces & Society (Psychology, Social Sciences)	Portugal	Quantitative, cross-sectional, structural equation modeling.	175 military employees working in three units of the Portuguese Marine Corps: Naval School, Marine Rifle School and Marine Technology School.	(MBI-GS &UWES) Exhaustion = 2.53 [1–7 points]; Cynicism = 1.92 [1–7 points]; Vigor = 4.53 [1–7 points]; Dedication = 4.61 [1–7 points]	Antecedents of burnout and work engagement: job demands–control–support (JDCS) as an independent variable and work-family conflict (WFC) and family-work conflict (FWC) as mediator variables.
Castanheira, Chambel, Lopes & Oliveira- Cruz (2016)	Military Psychology (Psychology, Social Sciences)	Portugal	Quantitative, cross-sectional, structural equation modeling.	322 officers and sergeants and 1,045 soldiers of the Portuguese Army.	(UWES) Officers and Sergeants' Work Engagement = 5.43 [0–6 points]; Soldiers' Work Engagement = 4.37 [0–6 points]	Antecedents of work engagement: perceived social impact and social worth as independent variable and prosocial motivation as mediator variable.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Chambel & Oliveira-Cruz (2010)	Military Psychology (Psychology, Social Sciences)	Portugal	Quantitative, longitudinal, three-wave study, 6 month time-lag.	387 soldiers on a peacekeeping mission.	(MBI-GS & UWES) emotional exhaustion = 1.57 (T1), 1.62 (T2), and 1.68 (T3) [0–6 points]; cynicism = 1.57 (T1), 1.69 (T2), and 1.85 (T3) [0–6 points];Vigor = 5.14 (T1), 5.00 (T2), and 4.78 (T3) [0–6 points]; Dedication = 5.40 (T1), 5.17 (T2), and 4.85 (T3) [0–6 points]	Antecedents of burnout and work engagement: psychological contract breach as the independent variable.
Chambel, Castanheira, Oliveira-Cruz & Lopes (2015)	Military Psychology (Psychology, Social Sciences)	Portugal	Quantitative, cross-sectional, structural equation modeling.	1,045 Portuguese soldiers.	(MBI-GS & UWES) emotional exhaustion = 4.06 [1–7 points]; cynicism = 3.81 [1–7 points];Work engagement = 4.35 [1–7 points]	Antecedents of burnout and work engagement: perceived organizational support and leader-member exchange as independent variables, and autonomous motivation and controlled motivation as mediator variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Chappelle et al. (2014)	Military Psychology (Psychology, Social Sciences)	USA	Quantitative, cross-sectional, descriptive statistics.	1,094 U.S. Air Force drone operators.	(MBI-GS) emotional exhaustion = 11.99 [0–30 points]; cynicism = 9.08 [0–30 points]; personal accomplishment = 26.12 [0–36 points]	Antecedents of burnout: demographics and career as independent variables.
Cragun, April, & Thaxton (2016)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, t-tests and multiple regression models.	105 respondents (nurses, technicians and physicians) from a Military Emergency Department in USA.	(ProQOLV) Never Deployed providers' Burnout = 21.8 [0–50 points]; Previously Deployed providers' Burnout = 22.3 [0–50 points]	Antecedents of burnout: population professions and deployment status as independent variables.
Delahaij, Kamphuis, & van den Berg (2016)	Military Psychology (Psychology, Social Sciences)	Netherlands	Quantitative, longitudinal, two-wave study, 6 month time-lag.	123 service members from the Police Training Group and 41 from the Air Task Force of the Dutch Armed Forces deployed in NATO mission ISAF.	(MBI-GS & UWES) Exhaustion = 1.00 [1–5 points]; Work Engagement = 4.11 [1–5 points]	Antecedents of burnout and work engagement: self-efficacy as an independent variable and threat situations and family support as moderator variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Demerouti, Geurts, Bakker, & Euwema (2004)	Ergonomics (Medicine, Health, Mental Health, Nurse)	Netherlands	Quantitative, cross-sectional, descriptive statistics.	3,122 Dutch Military Police.	(MBI-GS) Fixed shifts: emotional exhaustion = 1.71 and 1.75 [0–6 points]; cynicism = 1.62 and 1.50 [0–6 points]; personal accomplishment = 4.35 and 4.47 [0–6 points]; Rotating shifts: emotional exhaustion = 1.51 and 1.43 [0–6 points]; cynicism = 2.03 and 2.10 [0–6 points]; personal accomplishment = 4.20 and 4.11 [0–6 points]	Antecedents of burnout: shiftwork as the independent variable and work-home conflict as the mediator variable.
Espinoza-Parra, Molero, & Fuster-Ruizdeapodaca (2015)	Revista de Psicología Social (Psychology, Social Sciences)	Chile	Quantitative, cross-sectional, structural equation modeling.	985 Chilean military police officer candidates.	(UWES) Work Engagement = 4.18 [Information about the range of the rating scale was not provided]	Antecedents and consequents of work engagement: Transformational leadership as an independent variable and job satisfaction as the dependent variable.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Harrington, Bean, Pintello, & Mathews (2001)	Administration in Social Work (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics and regression models.	139 respondents of the Air Force Family Advocacy Program.	(MBI-GS) Several occupations compared: emotional exhaustion = 25.6, 19.8, 18.4, 20.6, and 15.5 [0–54 points]; cynicism = 7.2, 4, 3.5, 2.1, and 2.4 [0–30 points]; personal accomplishment = 39.3, 41.3, 39, 40.8, and 36.3 [0–48 points]	Consequents of burnout: intention to leave as the dependent variable.
Ivey, Blanc, & Mantler (2015)	Journal of Occupational Health Psychology (Psychology, Social Sciences)	Canada	Quantitative, cross-sectional, structural equation modeling.	1,224 Canadian Armed Forces personnel.	(UWES) Work Engagement = 4.56 [Information about the range of the rating scale was not provided]	Antecedents of work engagement: trust in team work and job significance as independent variables, and willingness to deploy on operations, turnover intentions and psychological distress as mediator variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Jiang et al. (2015)	Human Resource Management (Psychology, Social Sciences)	USA	Quantitative, cross-sectional, structural equation modeling.	13,182 U.S. Armed Forces personnel from the Army, Navy, Marines, Air Force, and the Coast Guard.	(Gallup Organization Q-12 scale) Work Engagement = 3.56 [1–5 points]	Antecedents and consequents of work engagement: anti-sexual harassment practices and sexual harassment incidents as independent variables and affective commitment and intentions to stay as dependent variables.
Kok, Herrell, Grossman, West, & Wilk (2016)	Psychiatric Services (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics and regression models.	488 Military Mental Health Service providers	(c) 21% (N = 103) of respondents reported elevated levels of job-related burnout	Descriptive study: determine the burnout level of Military Mental Health Service providers.
Lang, Patrician, & Steele (2012)	Journal of Nursing Scholarship (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics and regression models.	257 Army nursing personnel.	(MBI-HSS) emotional exhaustion = 23 [0–48 points]; depersonalization = 8 [0–30 points]; personal accomplishment = 38 [0–54 points]	Antecedents of burnout: deployment and perceptions of the practice environment as independent variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Lang, Pfister, & Siemens (2010)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics.	187 U.S. army nurses assigned to a large military treatment facility.	(MBI-HSS) emotional exhaustion = 25 [0–54 points]; depersonalization = 8 [0–30 points]; personal accomplishment = 39 [0–48 points]	Descriptive study: determine the burnout level of nurses and comparing civilian career nurses versus military career nurses.
Matthew et al. (2015)	Military Medicine (Medicine, Health, Mental Health, Nurse)	United Kingdom	Quantitative, intervention study, descriptive statistics.	40 Resistance Instructors from the British Military personnel (n = 17 permanent and 23 external).	(MBI-GS) Permanent Resistance Instructors: emotional exhaustion = 5.71 [0–30 points]; cynicism = 5.24 [0–30 points]; personal accomplishment = 29.82 [0–36 points]; External Resistance Instructors: emotional exhaustion = 9.17 [0–30 points]; cynicism = 8.61 [0–30 points]; personal accomplishment = 28.04 [0–36 points]	Antecedents of burnout: analyze the level of burnout of military instructors in a training program.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Moran et al. (2008)	Medicine & Science in Sports & Exercise (Medicine, Health, Mental Health, Nurse)	Israel	Quantitative, cross-sectional, physiological measures.	227 female soldiers.	(d) Burnout feeling = 3.87 for the stress fracture group and 3.39 for the non-stress factor group [1–7 points]; Strain feeling = 4.24 for the stress fracture group and 4.23 for the non-stress factor group.	Consequents of burnout: stress fracture during basic training as the dependent variable.
Morgan et al. (2011)	Journal of the International Neuropsychological Society (Psychology, Social Sciences)	USA	Quantitative, intervention study, descriptive statistics.	32 U.S. Military Special Operations personnel.	(MBI-GS) emotional exhaustion = 6.8 [0–54 points]; cynicism = 4.2 [0–30 points]; personal accomplishment = 31.15 [0–54 points]	Consequents of burnout: visuospatial executive function as the dependent variable.
Morgan, Cho, Hazlett, Coric, & Morgan (2002)	The Yale Journal of Biology and Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, physiological measures.	41 soldiers.	(MBI-HSS) emotional exhaustion = 14 [0–54 points]; depersonalization = 7 [0–30 points]; personal accomplishment = 37 [0–48 points]	Consequents of burnout: physiological changes as the dependent variable.
Patrician, Shang, & Lake (2010)	Research in Nursing & Health (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics and regression models.	357 Army Medical Department Registered Nurses.	(MBI-HSS) 40% of the total sample had a score of 27 or above indicating high emotional exhaustion [0–54 points]	Antecedents of burnout: demographics and organizational characteristics as independent variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Quick, Joplin, Nelson, Mangelsdorff, & Fiedler (1996)	Military Psychology (Psychology, Social Sciences)	USA	Quantitative, cross-sectional, descriptive statistics and regression models.	1,497 basic military trainees.	(e) Four sub-groups compared: burnout = 33.54, 37.97, 33.31, 37.97 [5–50 points]	Antecedents of burnout: self-reliant as the independent variable.
Sargent et al. (2016)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics and regression models.	523 health care providers in a United States Military Medical Center.	(MBI-HSS) emotional exhaustion = 19.99 [0–52 points]; depersonalization = 4.84 [0–26 points]; personal accomplishment = 40.56 [0–48 points]	Antecedents of burnout: demographics and areas of greatest frustration with work (seven options: computers, parking, administrative support, collateral duties, inadequate staffing, supplies and life/work balance).
Serec, Bajec, Petek, Švab, & Selič (2012)	ZdravniskiVestnik - Slovenian Medical Journal (Medicine, Health, Mental Health, Nurse)	Slovenia	Quantitative, cross-sectional, structural equation modeling.	390 soldiers from the Slovenian Armed Forces.	(MBI-HSS) emotional exhaustion = 14.46 [0–54 points]; depersonalization = 8.71 [0–30 points]; personal accomplishment = 30.37 [0–54 points]	Antecedents of burnout: personality traits and coping as independent variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Shelley & Wong (1991)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive analysis.	77 Military Dentists.	(MBI-HSS) emotional exhaustion = 20.35 [0–54 points]; depersonalization = 9.58 [0–30 points]; personal accomplishment = 40.15 [0–48 points]	Antecedents of burnout: demographic variables as independent variables.
Simons et al. (2016)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics.	27 military orthopaedic residents and 12 military staff surgeons.	(MBI-HSS) military orthopaedic residents: emotional exhaustion = 23.37 [0–54 points]; depersonalization = 8.41 [0–30 points]; personal accomplishment = 37.56 [0–48 points]; military staff surgeons: emotional exhaustion = 19.75 [0–54 points]; depersonalization = 7.08 [0–30 points]; personal accomplishment = 37.75 [0–48 points]	Descriptive study: determine the prevalence rate of burnout among orthopaedic surgery residents and staff surgeons in a military orthopaedic residency.

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Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Souza, Torres, Barbosa, Lima, & Souza (2015)	Psychology/Psicologia Reflexão e Crítica (Psychology, Social Sciences)	Brazil	Quantitative, cross-sectional, multiple regression models.	228 cadets at a military academy in Brazil.	(MBI for students) emotional exhaustion = 3.34 [1–5 points]; depersonalization = 2.41 [1–5 points]; personal accomplishment = 2.86 [1–5 points]	Antecedents of burnout: subjective well-being as an independent variable and self-efficacy as a mediator variable.
Taghva, Imani, Kazemi, & Shiralinia (2015)	Archives of Psychiatry and Psychotherapy (Medicine, Health, Mental Health, Nurse)	Iran	Quantitative, cross-sectional, structural equation modeling.	215 active duty personnel of the Islamic Republic of Iran Army.	(MBI-HSS) Mean values for emotional exhaustion and depersonalization were not provided.	Consequents of burnout: depression as a mediator variable and self-destructive behaviors as a dependent variable.
van Wijk (1997)	Military Medicine (Medicine, Health, Mental Health, Nurse)	South Africa	Quantitative, cross-sectional, descriptive analysis.	46 Military nurses.	(f) Mean values for burnout were not provided.	Antecedents of burnout: demographic and contextual variables as independent variables.
Varner & Foutch (2014)	Journal of the American Academy of Physician Assistants (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics.	150 family medicine providers on active duty in the U.S. Air Force.	(MBI-HSS) emotional exhaustion = 16.04 [0–52 points]; depersonalization = 12.67 [0–26 points]; personal accomplishment = 26.85 [0–48 points]	Descriptive study: determine the level of burnout of air force family medicine providers.

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Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Vie, Scheier, Lester, & Seligman (2016)	Military Psychology (Psychology, Social Sciences)	USA	Quantitative, cross-sectional, factorial validity and reliability analysis.	320,503 U.S. Active Duty soldiers.	(g) Mean values for work engagement were not provided.	Validation of the U.S. Army Global Assessment Tool, which includes the assessment of work engagement.
Vinokur, Pierce, & Lewandowski-Romps (2009)	Stress and Health (Psychology, Social Sciences)	USA	Quantitative, longitudinal, two-wave study, 1 year time-lag.	1,009 Air Force personnel	(SMBM) emotional exhaustion = 2.85 (T1) and 2.88 (T2) [1–7 point]; physical fatigue = 3.73 (T1) and 3.68 (T2) [1–7 point]; cognitive weariness = 2.44 (T1) and 2.46 (T2) [1–7 point]; job burnout = 2.94 (T1) and 2.95 (T2) [1–7 point].	Consequents of burnout: perceived health as the dependent variable.
Vinokur, Pierce, Lewandowski-Romps, Hobfoll, & Galea (2011)	Journal of Occupational Health Psychology (Psychology, Social Sciences)	USA	Quantitative, longitudinal, two-wave study, 1 year time-lag.	1,009 U.S. Air Force personnel deployed to wars.	(SMBM) Job Burnout = 2.88 (T1) and 2.82 (T2) [1–7 points]	Antecedents of burnout: effects of war exposure, post-traumatic stress (PTS) symptoms and resource losses as independent variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Vogelgesang, Leroy, & Avolio (2013)	The Leadership Quarterly (Psychology, Social Sciences)	USA	Quantitative, longitudinal, three-wave study, 3 weeks time-lag from Time 1 to Time 2, and 6 weeks time-lag from T2 and T3.	451 cadets from a United States military academy.	(h) Work Engagement = 3.45 [1–5 points]	Antecedents and consequents of work engagement: leaders' transparent communication as an independent variable and performance as a dependent variable.
Walters, Matthews, & Dailey (2014)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive statistics.	53 active duty Army health care providers, including combat medics, physician assistants, and physicians.	(MBI-HSS) emotional exhaustion = 30.17 [0–54 points]; depersonalization = 15.92 [0–30 points]; personal accomplishment = 34.34 [0–48 points]	Antecedents of burnout: deployment analyzed and number of leave days accrued as independent variables.

(Continued)

Table 20.1 (Continued)

Authors (year)	*Journal (area)*	*Country*	*Study design*	*Participants*	*(Scale) level(s) of well-being[rating scale/range score]*	*Aim of study*
Whealin et al. (2007)	Military Medicine (Medicine, Health, Mental Health, Nurse)	USA	Quantitative, cross-sectional, descriptive and regression analysis.	253 U.S. Army, Army Reserve Units, U.S. Air Force, and U.S. Navy personnel.	(MBI-HSS) Enlisted: emotional exhaustion = 17.87 [0–54 points]; depersonalization = 19.46 [0–30 points]; personal accomplishment = 34.75 [0–48 points]; Officers: emotional exhaustion = 16.6 [0–54 points]; depersonalization = 18.3 [0–30 points]; personal accomplishment = 36.18 [0–48 points];	Antecedents of burnout: exposure to traumatic events as the independent variable.
Zheng et al. (2015)	The Leadership Quarterly (Psychology, Social Sciences)	USA	Quantitative, cross-sectional, structural equation modeling.	338 military personnel deployed in combat zones overseas.	(MBI-GS) Exhaustion = 3.01 [0–6 points]	Antecedents of burnout: ethical leadership as an independent variable, team cohesion as a mediator variable and conscientiousness as a moderator variable.

Note: MBI-HSS = Maslach Burnout Inventory – Human Services Survey; MBI-GS = Maslach Burnout Inventory – General Survey; SMBM = Shirom–Melamed Burnout Measure; UWES = Utrecht Work Engagement Scale; (a) Self- Engagement: four-item scale that was a modified version of a measure used in past research (Britt & Bliese, 2003; Britt et al., 2001; Britt, Castro, & Adler, 2005); (b) Engagement in Meaningful Work; (c) Participants rated their level of professional burnout. Response options were very low, low, medium, high, and very high. Burnout status was categorized into elevated levels (responses of high and very high) and non-elevated levels (responses of very low, low and medium); (d) At the method section, the authors mentioned the assessment of burnout and exhaustion; however, the scale used was not identified by the authors; (e) Bodensteiner, Gerloff, and Quick (1989) 10-item burnout scale; (f) At the method section, the author mentioned the assessment of burnout and exhaustion; however, the scale used was not identified by the author; (g) Four items adapted from Wrzesniewski, McCauley, Rozin and Schwartz (1997); (h) May, Gilson and Harter (2004) scale of engagement; ProQOL V = Professional Quality of Life V survey instrument.

The vast majority (n = 38) of studies were cross-sectional, only nine had a longitudinal design (7 with two waves and 2 with three waves), and two studies reported interventions.

Concerning the aim of the studies reviewed, we observed that more than half analyzed well-being (i.e. burnout or engagement) predictors (n = 28); seven analyzed these well-being indicators as mediators or moderators; seven analyzed the consequences of engagement/burnout; six described the prevalence of well-being (i.e. burnout) among military groups; one reported the validation of a well-being measure that included a work engagement dimension. Of the studies that researched antecedents, the majority (n = 17 out of 28) analyzed situational variables, 8 analyzed individual variables and 3 a mixture of situational and individual variables.

What are the burnout and engagement levels among military personnel?

The majority of studies adopted the Maslach Burnout Inventory (MBI; n = 31 out of 38 studies) to measure burnout and the Utrecht Work Engagement Scale (UWES) to measure engagement (n = 8 out of 15 studies).

Although the most widely used instrument to measure burnout is the Maslach Burnout Inventory (MBI), 13 studies adopted the MBI – General Survey (MBI GS), whereas 16 used the MBI Health Services Survey (MBI HSS), and 2 used specific versions (e.g., MBI student version and MBI Turkish version). Furthermore, some studies only focused on the measurement of exhaustion (n = 4), a few assumed exhaustion and cynicism/depersonalization as the core dimensions (n = 6), and the vast majority treated the burnout syndrome as being composed of three dimensions (n = 21). In addition, the scales' range changed across the studies, using the same version of the same instrument. Indeed, some studies assumed that scores were calculated by the sum of the items' scores, whereas others assumed the average score across items' scores. Therefore, scores that vary within a 7-point scale (0–6 or 1–7) may be found for the same scale, whereas others assume much broader scales (0–54, for example). The possibility of comparing the scores was further jeopardized, as several studies were also found to use the short versions of the original scale (probably to improve the scale's reliability, items had sometimes been eliminated), and this is also reflected in a stronger variation of the limits of the scale.

As for Engagement, 8 out of the 15 studies used the Utrecht Work Engagement Scale (UWES); however, some adopted a "single" dimension approach (n = 5) and some used vigor and dedication as core dimensions (n = 2). One study (Boermans et al., 2014) aggregated the engagement scores at the team level, referring to team work engagement. Despite this variability, all the studies calculated the average score on a 7-point Likert scale (ranging from 0 to 6 or from 1 to 7). The remaining 7 studies adopted other measures of engagement. Out of these 7, 4 studies measured the concept of "self-engagement" or "job engagement," which is a different concept and refers to how responsible an individual feels for his/her job performance and how much job performance matters to the individual.

Discussion

The aim of this chapter was to review, summarize and evaluate the research on military burnout and engagement. These psychological states were conceptualized by the conservation resource theory model (Hobfoll, 2002) as negative and positive indicators of workplace well-being. Along with several inclusion criteria, our review focused on 49 studies. Our qualitative systematic literature review revealed that military burnout and engagement had been researched by *two different lenses*: psychology and medicine. This emerged as a factor influencing the studies' theoretical framework

and aim: for psychology, it has been crucial to understand what explains burnout and engagement or its consequences, whereas for medicine, pinpointing the level of well-being, particularly the level of burnout, has taken priority. The review further indicated that the majority of studies were cross-sectional, and military burnout levels were found to be relatively high to moderate in the vast majority of the reviewed studies. Work engagement did not fall below average levels.

Burnout more frequently studied than work engagement

A major trend that is salient when revisiting the literature on military burnout and engagement is a prevailing negative bias of studies addressing mental illness rather than mental "wellness." This is illustrated by the fact that the number of publications on burnout exceeds that of engagement by a ratio of 2, 6:1.

This is not exclusive to the studies on military personnel. Indeed, Schaufeli and Salanova (2007) listed the papers published on workplace well-being in the *Journal of Occupational Health Psychology* between 1996 and 2005 and found that out of 233 manuscripts, only 14 referred exclusively to positive indicators. The authors found a ratio of 14:1 in favor of papers focusing on mental illness. In the same vein, Macik-Frey, Quick and Nelson (2007) analyzed the literature on occupational health in from 1990 to 2005 and confirmed that stress and burnout were the predominant trends.

It is important to create a shift in this tendency towards illness, as failing to capture the positive aspects of work and the inherent resources are inappropriate and incomplete. As argued by Turner, Barling, and Zacharatos (2002, p. 715), "… it is time to extend our research focus and explore more fully the positive sides, so as to gain full understanding of the meaning and effects of working." Indeed, most organizations expect their workers to take responsibility and initiative, to be committed to the organization and the team, to be involved with the job and feel accountable for high quality performance. Thus, they need employees who feel engaged, i.e. people who feel energetic and dedicated, and who are absorbed by their work (Bakker & Schaufeli, 2008).

Hence, we need studies that address the positive sides of work and the effective functioning of individuals. The literature on burnout and engagement has demonstrated that these indicators can be explained by different variables (threat of loss or availability of resources; Hobfoll, 2002), and we now have extensive evidence showing how the loss of resources is associated with feelings of burnout. However, we know much less about the resources that are fundamental to promote engagement. Carvalho and Chambel (2017) sampled 175 military employees from three units of the Portuguese Marine Corps and found that autonomy and the supervisory support were related to engagement, and that this relationship was mediated by work–family enrichment. Delahaij, Kamphuis, and van den Berg (2016) found that strong self-efficacy helped service members deal with exposure to threatening situations during deployment, leading to more work engagement. These authors further demonstrated that service members with low self-efficacy benefited from family support when threat exposure was high, whereas service members with high self-efficacy benefited from family support when threat exposure was low. Espinoza-Parra, Molero, and Fuster-Ruizdeapodaca (2015) studied a sample of Chilean military police officer candidates and found a positive association between transformational leadership and the recruits' level of engagement. Ivey et al. (2015) sampled Canada Armed Forces personnel and found that trust in team work and job significance were predictors of engagement.

Furthermore, there is evidence demonstrating that engaged workers perform better than non-engaged workers (Motyka, 2018). Studies among military personnel have supported this relationship. Indeed, studies have found that engaged military personnel report more affective commitment to their individual branch of the service – Army, Navy, Marines, Air Force and

Coast Guard (Jiang et al., 2015), have better performance (third-party ratings;Vogelgesang, Leroy & Avolio, 2013) and have fewer turnover intentions (Ivey et al., 2015; Jiang et al., 2015).

As explained by Bakker, Schaufeli, Leiter and Taris (2008), engaged employees perform better since they often experience positive emotions which broaden people's thought-action repertoire (Fredrickson, 2003); experience better psychological and physical health; create their own job and personal resources (e.g., support from others), increasing their ability to deal with job demands; and transfer their engagement to others, which is particularly important when performance is the result of the combined effort of individual employees. Boermans et al. (2014) sampled 971 Dutch peacekeepers within 93 teams who were deployed and found that within teams there was an adequate level of agreement to justify aggregation of engagement at the collective level. These authors found that team members reported fewer fatigue symptoms after deployment if they were part of highly engaged teams during deployment, demonstrating that investing in team work engagement is important for those working in highly demanding jobs.

Having argued the need to increase the focus on well-being and good functioning, we also believe it is important to continue to study burnout, as it has implications for workers' health, also in the military context. For example, Taghva, Imani, Kazemi, & Shiralinia (2015) studied 215 active duty personnel of the Islamic Republic of Iran Army and found that burnout influenced depression and had an effect on self-destructive behavior. Morgan et al. (2011) sampled 32 U.S. Military Special Operations personnel and concluded that the assessment of burnout symptoms may help identify military personnel at risk for stress-related executive dysfunction.

Hence, research on military personnel's well-being would benefit from more studies simultaneously accounting for burnout and engagement levels. Indeed, some studies have highlighted that engagement can serve as a protector from highly demanding situations (Britt, Castro & Adler, 2005; Delahaij, et al., 2016). Unfortunately, the very few studies examining burnout and engagement together (Carvalho & Chambel, 2017; Chambel, Castanheira, Oliveira-Cruz, & Lopes, 2015; Chambel & Oliveira-Cruz, 2010; Delahaij, Kamphuis & van den Berg, 2016) focused on the antecedents of burnout and engagement and treated them as two independent parallel indicators. Therefore, there is still much to explore on the potential interaction effects between these two workplace well-being indicators.

The measure of burnout and engagement

The majority of studies adopt the same instrument to measure burnout and engagement. Although there is an apparent consensus on how to measure these well-being indicators, closer examination points to a considerable variability of versions, structure and range of the scale, even within the same instrument. This heterogeneity compromises the ability to make comparisons across studies and to reach a conclusion on the burnout or engagement levels of military personnel.

Indeed, the MBI GS and MBI HSS versions have important differences that should be taken into account. On the one hand, the scales' content changes significantly across the versions. For example, the MBI GS measures cynicism, which reflects a detached attitude towards work, whereas the MBI HSS measures depersonalization, which reflects a detached attitude towards people; another example is that the MBI GS measures exhaustion, whereas the MBI HSS measures emotional exhaustion. Although these changes reflect the authors' attempt to better adapt the instrument to the different contexts, when making comparisons across studies, one must take into account that these are not the same concepts. Furthermore, the scales' structure is different across versions (for example, exhaustion is measured with 5 items in the MBI GS, and emotional exhaustion has 9 items in the MBI HSS), and even adjustments within the same version were found in some studies with the same version of the MBI. Depending on how the

scale's score is calculated, this can have a strong impact on the scale's limit, the consequence being that it is possible to find the "same" dimension (e.g. exhaustion) being scored within different ranges within and across MBI versions.

On a final note, some studies translated burnout scale scores into low, medium and high burnout, using an established normative range for health care workers (Maslach, Jackson & Leiter, 1996). Although the reference to a threshold to interpret the meaning of MBI scores as low/moderate/high may be appealing, the fact that the scale's range frequently changes across studies to assume a threshold may be misleading. Furthermore, to our knowledge, there are no normalization studies of MBI among military personnel. Therefore, given the specific characteristics of this population, any attempt to use cutoff points identified in other contexts may result in serious misinterpretations.

The studies' design

Our systematic review reveals that research on military burnout and engagement has been dominated by cross-sectional studies, with a minority representing longitudinal studies. Moreover, if we use the Kelloway and Francis (2013) criteria that consider a longitudinal study to be one that employs three or more measures, this review only identifies two studies. Vogelgesang, Leroy and Avolio (2013) used a military cadet sample and researched how leader behavioral integrity relates to individual follower work engagement and how that relationship, in turn, connects to performance. Chambel and Oliveira-Cruz (2010) investigated peacekeeping militaries and analyzed the impact of the noncompliance with Army obligations (psychological contract breach) in this mission on the burnout and engagement of military personnel during and at the end of the mission. Although this predominance of cross-sectional studies has been identified as a characteristic in occupational health literature (e.g. Häusser, Mojzisch, Niesel & Schulz-Hardt, 2010; Luchman & Gonzalez-Morales, 2013; Taris & Schaufeli, 2016), it is a significant limitation. Cross-sectional studies only enable an understanding of whether the relationship between variables is significant but do not permit the establishment of unidirectional causation (e.g. De Lange, Taris, Kompier, Houtman, & Bongers, 2003; Zapf, Dormann, & Frese, 1996). Thus, a cross-sectional approach is inappropriate to show, for example, that some personal, job or organizational characteristics lead military personnel to lose or gain resources and develop burnout or engagement. With this design, it is also possible that a reverse causation may exist and military burnout and engagement influence their occupational situation perceptions as a loss or gain of resources. Future research with longitudinal designs that can address such patterns of causation (e.g., cross-lagged panel designs) would be valuable in underlying processes associated with employee attempts to garner, conserve and utilize resources in the context of military burnout and engagement development. In these longitudinal studies, it is important to consider the change in military well-being. Mäkikangas, Kinnunen, Feldt and Schaufeli's (2016) systematic review showed that a change of well-being, namely of burnout and work engagement, is more frequent than stability. We need more evidence on the specific features of the military context (i.e. training, war deployment, peacekeeping deployment) that may influence a change in military burnout and work engagement.

This systemic review also shows that intervention studies are rare in the literature on military burnout and engagement (Matthew et al., 2015; Morgan et al., 2011). The intervention studies not only provide valuable information on the causal relationships but also enable a systematic examination of the organizational actions (e.g. training, simulations, recruitment) and their efficacy to promote military well-being. Thus, researchers should be encouraged to employ

more intervention studies in order to increase the ecological validity of military actions and consequently increase their evidence-based nature.

Antecedents of military burnout and work engagement

The causes of burnout and engagement are generally divided into situational and individual causes (Aronsson et al., 2017). Our systematic review also reveals that the individual and situational antecedents have been considered in military research. As far as individual antecedents are concerned, we observed that personality factors (i.e., self-efficacy) are important in explaining military burnout. This is exemplified by Alessandri et al. (2018), who showed in their longitudinal study with cadets that emotional self-efficacy beliefs in managing negative emotions at work are a key mechanism that contributes to mediating the negative relationship between emotional stability and job burnout. In line with the COR theory (Hobfoll, 1989), some personal characteristics (i.e. personality) should be considered resources that the individual should use in order to deal with threatening conditions and prevent negative outcomes, namely burnout. This assumption has been empirically supported in prior meta-analysis studies (Alarcon, Eschleman, & Bowling, 2009; Swider & Zimmerman, 2010), which found that the Big Five factors are consistently related to each of the three dimensions of burnout. Furthermore, Alarcon et al. (2009) also found that lower-order personality factors (e.g., self-esteem, self-efficacy, locus of control, positive affectivity, negative affectivity, optimism, proactive personality and hardiness) had a significant negative relationship with burnout. Thus, it would be interesting in future research with militaries to include the Big Five and other lower-order personality factors as predictors of burnout development, particularly in high-demand situations.

Moreover, in line with the COR theory (Hobfoll, 2002), as individuals not only strive to protect their resources, but also to accumulate them, some personality factors should be considered personal resources that tend to generate other resources, which may result in positive outcomes like work engagement. In fact, the review of literature conducted by Mäkikangas et al. (2013) showed that Big Five factors (e.g., extraversion and neuroticism) and lower-order individual factors (e.g., self-efficacy) were consistently related to higher work engagement. For instance, employees with high extraversion and low neuroticism showed higher work engagement. In addition, self-efficacy was found to be related to higher absorption levels of employees (i.e., one dimension of work engagement). This systematic review reveals that the relationship between personality and military engagement has not yet been investigated; thus, we suggest that future studies analyze not only the effect of military personality on burnout but also on engagement.

Concerning the situational factors, this systematic review reveals that different job and organizational characteristics contribute to explaining military well-being. However, related to the explanation of military burnout, this review makes it possible to distinguish different study groups. The first group includes studies published on the scientific areas of medicine, health, mental health and nursing which seek to describe the participants' burnout level. The assumption is that military personnel confront high job demands and consequently have high levels of stress, namely high levels of burnout. The study of Simons et al. (2016), describing the levels of orthopedic residents and staff surgeons' burnout in an army medical center, and the study of Varner and Foutch (2014) that describes the burnout of Air Force family medicine providers are examples of this. These studies supported the idea that these military personnel are vulnerable to burnout but did not contribute to explaining why and how the development of this chronic stress indicator occurs. In fact, these studies did not analyze the professional experiences of these military personnel and, as such, did not bring to light the levels of demands they encounter

or whether the demands they may encounter are solely related to the fact that they are health professionals or are also due to the military context.

The second group that this systematic review identifies includes studies that were also published in medicine, health, mental health and nursing and compared the burnout of military personnel with a deployment experience with those who had not had this experience. The assumption is that a deployment implies high demands that contribute to the emergence of burnout. However, the results of these studies were not conclusive, and some of the studies did not observe significant differences (i.e., Cragun, April & Thaxton [2016], which included health care providers in a military emergency department) or observed better results in some burnout dimensions in militaries with experiences of deployment (e.g., Lang, Patrician & Steele [2012] observed that nurses who had participated in a deployment in Iraq had lower exhaustion than nurses of a large army teaching hospital in the United States). We believe that these inconclusive results may arise due to the fact that both the personnel who had been deployed and those that had not may have had enough resources to meet the demands they encountered; those without a deployment experience may encounter higher demands and lower resources than personnel with such experience. In fact, the studies included in this second group did not analyze whether the deployment experiences involved threat or loss of resources and were not conclusive as to the influence of deployment on burnout.

In addition to the limitations of studies in the two aforementioned groups, our systematic review encountered a third group of studies that analyzed the specific demands of a deployment and its influence on the development of burnout. This is exemplified by Vinokur, Pierce, Lewandowski-Romps, Hobfol and Galea (2011), who showed in their longitudinal study with a large sample of U.S. Air Force personnel deployed to the war that exposure to traumatic experiences during deployment predicted a loss of resources, which in turn promoted the burnout of returning veterans.

Finally, the fourth group of studies that the systematic review identified includes studies pointing to the fact that some job demands and/or job resources that were salient to explain the burnout of civil professionals were also valuable to explain military burnout. For example, Demerouti, Geurts, Bakker and Euwema (2004) showed that shift rotations in military jobs were related to cynicism and professional efficacy (both burnout dimensions). Carvalho and Chambel (2017) observed that high job demands (i.e., workload) and low supervisory support were related to work-family conflict, which in turn was related to military burnout.

The studies identified in these third and fourth groups of this systematic review show that the military personnel who perceived high demands and low resources displayed higher levels of burnout. This observation is in line with the COR assumption that burnout occurs when a person perceives high demands that threaten something of value to him/her. The threats or losses will tax or exhaust the resources the personnel have available to confront the situation (Hobfoll, 1989). Furthermore, these results are also in line with the meta-analysis of Lee and Ashforth (1996), showing that job demands were important predictors of burnout; the meta-analysis conducted by Alarcon (2011), which observed that higher demands and lower resources were associated with burnout and the systematic review of Seidler et al. (2014), pointing to high job demands, low possibility to exert control and non-supportive workplaces being important to explain the development of burnout. Thus, we suggest that future studies continue to analyze different situations with high demands and low resources that explain the development of burnout in the military.

Related to the explanation of military engagement, this systematic review enables us to conclude that this positive psychological state has been exclusively researched by studies on psychology and reveals that some job and organizational characteristics are important resources

that predict it. For example, the study by Ivey et al. (2015) with a large sample of Canadian Armed Forces showed that trust in team and job significance predicted work engagement which, in turn, predicted military personnel's willingness to deploy an operation, their psychological distress and their turnover intention. In the same vein, the longitudinal study of Vogelgesang et al. (2013) with military cadets showed that leader behavior integrity mediated the positive influence of leader transparent communication on military personnel engagement, which in turn influenced their performance.

These systematic review results are in line with the COR theory (Hobfoll, 2002), as previously mentioned, and presuppose that engagement occurs as a "gain/loss cycle" since resources tend to generate other resources, which may result in positive outcomes like the positive psychological state. The meta-analyses by Halbesleben (2010) and by Christian et al. (2011) confirmed this assumption that job resources are the most important predictors of employee engagement. Furthermore, in an attempt to more clearly delineate the nature of resources, Hobfoll (1988) underlined social support and argued that it can both widen one's pool of available resources and replace or reinforce other resources that have been lacking. In fact, this systematic review reveals that social support, particularly leader support, is an important resource to explain military engagement. Not only does the previously referred to study of Vogelgesang, et al. (2013) underline the role of the leader to explain cadets' engagement, but, for example, Espinoza-Parra et al. (2015) also observed that leadership (i.e. transformational style) was related to military engagement which, in turn, was related to work satisfaction. Reinforcing the salient leader role in the military context (Hannah & Sowde, 2012), this systematic review reveals the promotion of military engagement through the leader. Moreover, as leaders can make followers more certain of the social and material resources available to them and have an important role in the supply of resources that aid subordinates to cope with job demands and allow them to deploy their resources more effectively, their relationship with subordinates should be an important situational characteristic to explain not only military engagement but also burnout. In the same vein, the meta-analysis by Harms, Bai, and Han (2016) showed that transformational leadership and the leader-member exchange (LMX) were negatively related to subordinates' burnout. This systematic review only identified one study (Zheng et al., 2015) that associated leadership with subordinate emotional exhaustion (i.e. a burnout dimension). The authors researched a sample of military personnel deployed in combat zones and observed that team cohesion partially mediated the relationship between ethical leadership and emotional exhaustion, particularly when personnel had high conscientiousness. Thus, we recommend that future studies analyze the effects of leadership on the development of military burnout and engagement.

In addition, this systematic review also reveals that military engagement has a role in buffering the relationship between demands and strain, namely burnout. For example, in a longitudinal multilevel study, Britt and Bliese (2003), with a sample of personnel deployed on a peacekeeping mission to Bosnia, verified that in situations with high stressors, the engaged personnel reported lower psychological distress than the disengaged personnel. This role of engagement is not presupposed in the COR theory. However, in line with Schaufeli and Taris (2014), the development process of engagement and that of burnout should not be independent. Thus, future research should deepen this line of research and analyze both processes jointly, namely the role of engagement in burnout development and vice versa.

Consequences of burnout and work engagement

Compared to the analysis of antecedents, this systematic review shows that military well-being (i.e. burnout and work engagement) consequences have received less interest from researchers.

Moreover, this review also reveals that studies only analyze individual consequences of military well-being, and the majority analyze attitudinal consequences such as work satisfaction, organizational affective commitment and turnover intentions. However, this review shows that studies on burnout preferred to analyze the direct consequences of this stress syndrome, and the majority of studies that analyzed engagement consequences chose mediation models, and this positive psychological state played the role of mediator. For example, Vinokur, Pierce and Lewandowski-Romps (2009) verified in a longitudinal study with a large sample of Air Force personnel deployed to the wars in Iraq, Afghanistan and supporting locations that burnout and health perceptions had reciprocal effects. Jiang et al. (2015), with large samples of U.S. Armed Forces from the Army, Navy, Marines, Air Force, and Coast Guard, observed that engagement and psychological distress mediated the relationship between anti–sexual harassment practices/sexual harassment incidents and affective commitment and intention to stay. These observations are in line with previous studies that demonstrated that burnout and engagement have consequences for health and job attitudes (e.g., job satisfaction and organizational commitment) (Maslach, Schaufeli, & Leiter, 2001; Taris, 2006; Taris & Schaufeli, 2016). However, previous meta-analytical studies have also demonstrated that these indicators of workers' well-being are important performance predictors underlining the practical relevance of burnout and engagement research for organizational results. Taris's (2006) meta-analysis confirmed the relationship between burnout, namely exhaustion, and in-role behavior, organizational citizenship behavior and customer satisfaction, and Swider and Zimmerman's (2010) meta-analysis also confirmed that job burnout had a significant relationship with job performance. As for engagement, Harter, Schmidt, and Hayes (2002) showed that work engagement was related to higher profitability and customer satisfaction/loyalty, and Christian et al.'s (2011) meta-analysis found that work engagement predicted both the task (in-role) and the contextual (extra-role) performance. Unfortunately, this systematic review only includes one study (Vogelgesang et al., 2013) that analyzed the relationship between burnout and performance and confirmed the negative consequence of this indicator of military chronic stress. Future studies should analyze the effects of burnout and engagement on military performance and consequently help military institutions to better understand personnel behaviors, namely those that contribute to the efficiency and effectiveness of these institutions.

Conclusions

By means of the present systematic review, it was possible to elaborate on several theoretical, practical considerations. From the theoretical point of view, we noted that to date, both burnout and work engagement are being researched through two different lenses: psychology and medicine that resulted in a difference in the approach and objectives, such as the theoretical framework and the aim of the study. However, regardless of the lens used (i.e., psychological or medical), the prevalence of studies focusing on mental illness, or rather mental "wellness," is remarkable, and, as previously noted, relying on the conceptualization of the conservation of resources theory, studies analyzing the resources promoting military engagement are needed.

From the practical point of view, we are also able to elaborate on some final concluding remarks. For instance, in a methodological scope, this systematic literature review clearly showed some limitations of previous studies that should be overcome in future research. Firstly, the cross-sectional predominant design of previous studies, which does not allow inferences about the causal relationships among the variables and does not allow one to get a "picture" of the burnout and work engagement evolution levels across time. Secondly, although the majority of studies adopt the same instrument to measure burnout and work engagement, the systematic review revealed a considerable variability of versions, structure, and range of the scale used, even when

the same instrument was used. In such a fashion, this limitation compromised the ability to make comparisons across studies and to make inferences about military burnout and work engagement levels. Finally, still from a practical point of view, the present review unveiled some antecedents of military burnout and work engagement, which can be classified into individual (e.g., personality) or situational antecedents (e.g., job demands), and some future pathways were pointed out. To mention a few, more research is needed in order to inspect: (1) the nature of the relationship between personality and military engagement, (2) how different situations with high demands and low resources contributes to explain the development of burnout in military personnel, (3) the effects of leadership on the development of military burnout and engagement and (4) the buffering role of work engagement on the relationship between job demands and burnout. Regarding the consequences of burnout and work engagement, compared to the analysis of antecedents, this systematic review allowed verifying that military burnout and work engagement consequences have been receiving less interest from researchers. In addition, when consequences are studied, the majority of studies focused only on observing the relationship between individual attitudinal characteristics (e.g., work satisfaction) and military well-being. As such, we suggested that future studies should observe the effects of burnout and work engagement on military members' behavior, such as their performance.

To summarize, the current work contributed to sum up all the empirical evidence obtained up to date on military burnout and work engagement, and by doing so, it highlighted future pathways for the research of work well-being in a military setting.

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