

THE FACTORS ASSOCIATED WITH ANXIETY AND DEPRESSION IN SLOVENIAN ARMED FORCES MEMBERS ON A PEACEKEEPING MISSION IN THE WESTERN BALKANS

DEJAVNIKI, POVEZANI Z DEPRESIJO IN TESNOBNOSTJO PRI SLOVENSКИH VOJAKIH NA MIROVNI MISIJI NA ZAHODNEM BALKANU

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Abstract

Objective: To identify the factors associated with the onset of depression and anxiety in professional soldiers on a peacekeeping mission in Kosovo in 2009.

Methods: A cross-sectional study of 244 members of the Slovenian Armed Forces on a peace-keeping mission, using the Depression Self Rating Scale, the Self-Rating Anxiety Scale and a background questionnaire, was performed.

Results: A 6.9% prevalence of depression and a 7.9% prevalence of anxiety were identified. The presence of a chronic pain condition and the recent termination of an intimate relationship were independently associated with the onset of either anxiety or depression or with a co-morbidity of anxiety and depression.

Conclusions: In spite of medical and psychological examinations prior to peacekeeping operations, the onset of anxiety and depression calls for special attention and empowerment by teaching peacekeepers how to use their social support and personal mastery resources.

Key words: depression, anxiety, pain, military personnel, operations other than war

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Izvleček

Namen: Določiti dejavnike, povezane z nastopom depresije in tesnobe pri poklicnih vojaki na mirovni misiji na Kosovu.

Metode: Presečna študija, v katero je bilo vključenih 244 pripadnikov Slovenske vojske na mirovni misiji, je bila izvedena leta 2009. Uporabljeni so bili Zungov vprašalnik za samooceno depresije in anksioznosti, lestvica za samooceno kronične bolečine ter vprašanja o demografskih značilnostih.

Rezultati: Pojavnost depresije je bila 6,9 %, anksioznosti pa 7,9 %. Prisotnost kronične bolečine in nedavna prekinitev intimnega razmerja sta bili neodvisno povezani s pojavom anksioznosti ali depresije oziroma s sopojavljanjem obeh.

Zaključek: Glede na to, da so bili pred odhodom na mirovno misijo vojaki celovito zdravstveno pregledani in psihološko ocenjeni, terja pojav anksioznosti in/ali depresije na mirovni misiji posebno pozornost. Predlagamo poučevanje mirovnikov o uporabi in krepitvi socialne podpore ter osebnih virov odpornosti.

Ključne besede: depresija, tesnoba, bolečina, vojaki, mirovne operacije

1 INTRODUCTION

The prevalence of mental disorders in various countries ranges from 4.7% in Nigeria up to 26.4% in the USA (1). In primary care settings, the reported prevalence from studies that provided data from both a standardised interview and self-rating is between 6% and 17% (2). The World Health Organisation's study of mental disorders in general health care screened over 25,000 people in 14 countries worldwide and assessed 5,500 in detail. A quarter had well-defined disorders, and a further 9% had sub-threshold conditions. The most common disorders were depression (10%), generalised anxiety disorder (8%) and harmful use of alcohol (3%) (3). Major depressive disorder (MDD) is a common condition, widely distributed in the population, and usually associated with moderate to severe symptoms and role impairment. The prevalence of MDD over a lifetime in the USA was 16.2%, while for 12 months it was 6.6%, the 12 month cases being categorised as 10.4% mild, 38.6% moderate, 38.0% severe and 12.9% very severe (4). The first large pan-European survey of depression in the community, DEPRESS, showed a 6 month prevalence of 17% (5). Major depression accounted for 6.9% of the cases and minor depression for 1.8%. Depressed subjects in both these categories perceived that their working or social lives were substantially impaired by their depressive symptoms. The remaining 8.3% of depressed subjects considered that their functional impairment was not substantial. A significant proportion of sufferers from depression (43%) failed to seek treatment for their depressive symptoms (5).

Apart from genetic predisposition and stressful life events, the known risk factors for depression are female gender, age 20-40 years, separated or single marital status in middle aged females, lower socioeconomic status (unemployment rate, lower education, poverty) and the presence of chronic pain and chronic illness (6, 7). The risk factors for the persistence of depression identified in the review presented by Gilchrist and Gunn (7) were how severe and chronic the depressive episode was, the presence of suicidal thoughts, antidepressant use, poorer self-reported quality of life, lower self-reported social support, experience of key life events at the time, lower education level and unemployment. Clinically significant depressive symptoms are highly prevalent in primary care patients; however, depression is an infrequent patient complaint. Therefore, depression often goes unrecognised; only half of the patients with depression are identified and even fewer are treated (8, 9).

The literature reviewed by Kessler et al. is consistent in showing that generalised anxiety disorder (GAD) is a common mental disorder that typically has an early age of onset, a chronic course and a high degree of co-morbidity with other anxiety and mood disorders. However, the clinical course of GAD is less consistently associated with other diseases than that of other anxiety and mood disorders. There is a strong co-morbidity between GAD and major depression; most people with this type of co-morbidity report that the onset of GAD occurred before the onset of depression (10). Compared to depressed patients without GAD, patients with both depression and modified generalised anxiety disorder have higher levels of suicidal thoughts, poorer social functioning, a greater frequency of other anxiety disorders, eating disorders and somatoform disorders, a greater level of pathological worry and a higher risk for generalised anxiety disorder in first-degree family members (11).

Overall, the prevalence of pain is greater among females and among older people. Although most people reporting chronic pain do not meet the criteria of a depressive or anxiety disorder, depression/anxiety spectrum disorders are often associated with experience of some degree of chronic pain. Studies show that the age-standardised prevalence of chronic pain conditions for the previous 12 months was 37.3% in developed countries and 41.1% in developing countries, with back pain and headache being somewhat more common in developing than developed countries (12). Over 75% of depressed patients in primary care complain of painful physical symptoms such as headache, stomach pain and neck and back pain as well as non-specific generalised pain. The presence of such symptoms predicts a greater severity and a less favourable outcome of depression, together with a poorer health-related quality of life. World Health Organisation data obtained in primary care centres worldwide show that 22% of all primary care patients suffer from persistent debilitating pain, and that these patients are four times more likely to have co-morbid anxiety or depressive disorder than pain-free primary care patients. Increasingly, major depression is seen as being composed of psychological, somatic and painful physical symptoms (13). Co-morbid depression and chronic pain represent a significant source of disability in the workforce. Other risk factors for absenteeism include a younger age, greater income and higher level of education (14).

The association between psychosocial work-stress variables and major depressive episodes was examined by Blackmore et al. in a population study in Canada

(15). High job strain was significantly associated with depression among men, and lack of social support at work was significantly associated with depression in both genders. A significant proportion of the workforce experienced major depressive episodes in the year preceding the study. Gender differences appear to affect work stress factors that increase the risk of depression (15). The impact of work on the risk of future psychiatric disorder has been examined in several longitudinal studies. A large epidemiological study of civil servants showed that social support and control at work protect mental health, while high job demands and effort-reward imbalance are risk factors for future psychiatric disorder (16).

Military jobs are known to be especially stressful due to the constant need to deal with critical and acutely stressful situations; however, significant stress has also been recognised in the routine, peacetime military work environment (17, 18). The term "operational stress" describes soldiers' stress in the context of operations other than war (OOTW) (19), suggesting that both combat stressors (e.g. witnessing death of others, taking hostages) as well as contextual stressors (e.g. increased levels of marital, family and financial stress) play an important role in the development of 'peacekeeping stress'. In addition to the exposure to potential danger, peacekeeping stress in some cases is potentially even more frustrating than combat stress (20). In the last decades, Western armies have been involved in operations other than war (OOTW), such as humanitarian aid, peacekeeping operations and peace-enforcing operations. Since 2004, when Slovenia joined the North Atlantic Territorial Organisation (NATO), the Slovenian Armed Forces have taken an active part in supporting international peace. The tasks of Slovenian troops in Kosovo include the maintenance of a secure and stable environment, ensuring favourable conditions for the transfer of political power to civilian authorities, communication and checkpoint control and the protection of highly important facilities (21).

Since there is a lack of appropriate research data on the prevalence of depression and anxiety in those participating in OOTW operations in Slovenia, this study is to be considered as a beneficial contribution to the field.

2 METHODS

The study design addressed the question: Which factors are associated with the onset of depression and anxiety in the participants in an OOTW peacekeeping mission?

2.1 Participants

Of 244 members of the Slovenian Armed Forces on the peacekeeping mission KFOR in Kosovo, located at the military base Villagio Italia (Italian village) near the town of Peć, in February 2010, after five months of service in OOTW, 203 soldiers (83.2% response rate) willingly participated in the data collection. The questionnaires were administered with the help of military nurses. Confidentiality was ensured by the anonymous administration of questionnaires, which were coded and delivered to the home country by military personnel and which are now archived in the Department of Family Medicine at the Faculty of Medicine in the University of Ljubljana.

All the peacekeepers underwent a thorough medical examination and mental health exploration prior to their departure for Kosovo. At the beginning of the OOTW, all participants were assessed and considered to be completely healthy.

The National Ethics Committee approved the protocol of the study on 7 June 2009; reference number 41/04/09.

2.2 Instruments and measures

The instruments relevant to this study are the background questionnaire, the Depression Self Rating Scale (SDS), the Self-Rating Anxiety Scale (SAS) and the Visual Analog Scale for self-assessment of the intensity of pain. All were administered in a Slovenian language translated version. The reliability of the SDS and SAS was tested by Cronbach's alpha coefficients. Based on this, all the instruments reached the recommended threshold of 0.7 (22); the Cronbach alpha for SAS was 0.877 and for SDS was 0.878.

To assess anxiety and depression Zung's Depression Self-Rating Scale (SDS) (23) and the Self-Rating Anxiety Scale (SAS) (24) were administered. They are widely used, comprehensible and easy to administer. Each of the questionnaires contains a set of 20 assertions. The respondents assess each statement on the Likert scale. Some statements are given in a positive form and others in a negative form; the responses are evaluated from 1 to 4. The sum for each of the questionnaires is divided by 80 and multiplied by 100 with the total score varying from 25 to 100 points. Depression is determined by the number of points; i.e. up to 49 points there is no depression, 50-59 points indicates mild depression, 60-69 points moderate, and 70 or more points severe depression (23).

The level of anxiety is evaluated similarly, with the criteria for anxiety being mild between 50 and 59 points, moderate between 60 and 69 points and severe for 70 or more points (24).

In addition to questions concerning the frequency of individual symptoms of both disorders, the respondents marked the presence of chronic somatic diseases and chronic pain, which was later defined as having continued for more than one year.

The intensity of pain was rated on a visual analogue scale (VAS) from 0 to 10: (no pain (0), mild (1-3), medium intensity (4-6), strong (7-9) and unbearable (10)).

The background questionnaire consisted of information about gender, age, marital status and educational level.

2.3 Statistical analysis

Appropriate tests were performed on the data, depending on the nature of the variables. In the univariate analysis the Student t-test (for normally distributed variables), the Mann-Whitney test (for abnormally distributed variables), and the chi-square (χ^2) test (to identify qualitative differences between the groups) were applied. Linear regression modelling was used to identify variables associated with the onset of either depression or anxiety or both. The results were presented by the Beta coefficient, t value and P value. The SPSS 15 software was used for statistical

analysis (SPSS Inc., Chicago, IL). A P value of < 0.05 was considered statistically significant.

3 RESULTS

Of 203 participants, 184 (91.6%) were men and 19 women (9.4%); this is a greater proportion of male soldiers than in the total Slovenian Armed Forces population (86.2% men) at the time of data collection (25).

There was no statistically significant difference in age between men (29.4 ± 6.8) and women (29.7 ± 7.2) in the surveyed group ($p=0.833$); the average age was 29.4 ± 6.9 years. However, there was a significant difference between male and female participants ($p=0.028$), more female soldiers being single.

Regarding rank, there were 123 (60.6%) Privates, 54 (26.6%) Non-Commissioned Officers (NCOs) and 26 (12.8%) Officers. The proportion of Privates in the sample was larger and that of Officers was smaller, compared to the army population in 2010 (Privates: 60.6% vs. 47.2% in the population; NCOs: 26.6% vs. 30.0%; and Officers: 12.80% vs. 22.8%) (26).

Participants by gender, level of education and marital status are presented in Table 1.

Table 1. Participants by gender, level of education and marital status.

Tabela 1. Predstavitev udeležencev po spolu, stanu in ravni izobrazbe.

	Male / moški (n=184)	Female / ženske (n=19)	p	Total / skupaj n=203	%
Level of Education / raven izobrazbe			0.152		
Vocational School / poklicna šola	62 (33.7%)	4 (21.1%)		66	32.5
High School / srednja šola	109 (59.2%)	11 (57.9%)		120	59.1
College / višja in visoka šola	2 (1.1%)	1 (5.3%)		3	1.5
University Degree / univerzitetna izobrazba	11 (6.0%)	3 (15.8%)		14	6.9
Marital Status / stan			0.028		
Single / samski	88 (47.8%)	11 (57.9%)		99	48.8
Intimate Relationship / dejavni partnerski odnos	93 (50.5%)	6 (31.6%)		99	48.8
Intimate Relationship ended / zaključeni partnerski odnos	3 (1.6%)	2 (10.5%)		5	2.5

At least one chronic disease was reported by 9 (4.4%) respondents (chronic heart disease, obstructive pulmonary disease, asthma, diabetes, rheumatic disease, migraine). Continuous or recurrent pain in any body part in the past year was reported by 31 (15.3%) of the respondents. Out of 44 (21.7%) participants who reported pain in any body part at the

time of data collection, 13 (29.6%) reported mild pain, 16 (36.46%) moderate pain and 7 (15.9%) severe pain. The prevalence of anxiety (SAS) was 7.9% and of depression (SDS) 6.9%.

The Self-Rated Depression (SDS), Self-Rated Anxiety (SAS) and Pain Intensity Rates (VAS) are presented in Table 2.

Table 2. Participants by age, Self-Rated Depression (SDS), Self-Rated Anxiety (SAS) and Pain Intensity Rates (VAS).

Tabela 2. Samoocena depresivnosti (SDS), tesnobnosti (SAS) in intenzivnosti bolečine (VAS).

	Male / moški (n=184)	Female / ženske (n=19)	p	Total / skupaj n=203
Age (years) / starost (leta) [21-55]	29.4±6.8	29.7±7.2	0.833	29.4±6.9
Self-Rated Depression / samoocena depresivnosti(SDS) [20-71]	31.7±8.7	34.6±10.0	0.160	31.9±8.9
Self-Rated Anxiety / samoocena tesnobnosti (SAS) [20-75]	30.1±8.2	31.2±9.1	0.587	30.2±8.2
VAS rate / samoocena intenzivnosti bolečine [0-5]	0.4±0.9	0.2±0.5	0.359	0.3±0.9

For SAS, mild anxiety was identified in 10 (4.9%) and severe anxiety in 6 (2.9%) participants (7.9% prevalence). For SDS, mild depression was identified in 12 (5.9%) and severe depression in 2 (1.0%) participants (6.9% prevalence). There was a significant co-morbidity between mild anxiety and mild depression ($p < 0.001$).

A weak negative correlation was found between education level and signs of anxiety ($r = -0.183$, $p = 0.014$) and depressive symptoms ($r = -0.204$, $p = 0.006$); higher educated participants were less likely to be either depressed or self-assessed as anxious. Comparing the level of education and the number of respondents with anxiety or depression, statistically significant associations were no longer present ($p = 0.914$; $p = 0.963$, respectively).

Widowed or separated (Intimate Relationship ended, Table 1) and single subjects were the most likely to

be anxious, while the lowest rates were in participants living in intimate partnerships ($p < 0.001$).

Widowed or separated subjects were more depressed than respondents who lived in intimate relationships ($p < 0.001$).

Anxiety was significantly more frequent in subjects with chronic disease than those without ($p < 0.001$), and the same was shown for depression ($p < 0.001$).

The frequency of depression and anxiety rose sharply with the intensity of pain. Subjects with higher VAS rates were more anxious ($p < 0.001$). Intense pain was significantly associated with the occurrence of anxiety and depression.

3.1 Factors associated with self-rated anxiety (SAS) and self-rated depression (SDS): a linear regression model

Factors Associated with Self-Rated Anxiety (SAS) and Self-Rated Depression (SDS) are presented in Table 3.

Table 3. Factors associated with Self-Rated Anxiety (SAS) and Self-Rated Depression (SDS): a linear regression model.

Tabela 3. Dejavniki, povezani s samooceno tesnobe (SAS) in depresivnosti (SDS): linearna regresija.

Characteristics / dejavniki	Self-Rated Anxiety / samoocena tesnobe (SAS) (F=8.904, df=7, p<0.001)			Self-Rated Depression / samoocena depresivnosti (SDS) (F=7.930, df=7, p<0.001)		
	Beta	t	p	Beta	t	p
Age (years) / starost (leta)	0.02	0.34	0.731	-0.08	-1.11	0.268
Female gender / ženski spol	0.04	0.56	0.577	0.11	1.73	0.085
Level of Education / raven izobrazbe	-0.18	-2.83	0.005	-0.19	-2.99	0.003
Intimate Relationship active / dejavni partnerski odnos	-0.08	-1.24	0.215	0.02	0.25	0.799
Intimate Relationship ended / zaključeni partnerski odnos	0.26	3.68	<0.001	0.24	3.35	0.001
Co-occurring chronic diseases / sopojavljanje kroničnih bolezni	0.10	1.47	0.144	0.06	0.84	0.399
Self-Rated Pain / samoocena intenzivnosti bolečine (VAS)	0.29	4.53	<0.001	0.31	4.79	<0.001

R²=0.242

R²=0.222

In linear regression modelling, 24.2% of the variance was explained by factors associated with the occurrence of mild and severe anxiety, i.e. lower educational level, separation or death of intimate partner (Intimate Relationship ended) and intensity of pain (VAS rate); 22.2% of the variance in the occurrence of mild and severe depression was explained by intensity of pain

(VAS rate), separation or death of intimate partner (Intimate Relationship ended) and lower educational level.

Factors Associated with Co-occurring Self-Rated Anxiety (SAS) and Self-Rated Depression (SDS): A Linear Regression Model (F=9.209, df=7, p<0.001) are presented in Table 4.

Table 4. Factors associated with co-occurring Self-Rated Anxiety (SAS) and Self-Rated Depression (SDS): a linear regression model. ($F=9.209$, $df=7$, $p<0.001$).

Tabela 4. Dejavniki, povezani s sočasno samooceno testnosti (SAS) in depresivnosti (SDS): linearna regresija ($F=9.209$, $df=7$, $p<0.001$).

Characteristics / dejavniki	Beta	t	p
Age (years) / starost (leta)	-0.03	-0.44	0.660
Female gender / ženski spol	0.08	1.24	0.215
Level of Education / raven izobrazbe	-0.20	-3.10	0.002
Intimate Relationship active / dejavni partnerski odnos	-0.03	-0.49	0.624
Intimate Relationship ended / zaključeni partnerski odnos	0.27	3.73	<0.001
Co-occurring chronic diseases / sopoljavljanje kroničnih bolezni	0.08	1.21	0.227
Self-Rated Pain / samoocena intenzivnosti bolečine (VAS)	0.32	4.96	<0.001

$R^2=0.248$

When analysing the factors associated with co-occurrence of depression and anxiety in regression modelling, 24.8% of the variance was explained by the same three factors identified in the previous analysis, i.e. separation or death of intimate partner (Intimate Partnership ended), intensity of pain (VAS rate) and lower level of education.

4 DISCUSSION

The objective of this survey was to assess the prevalence of depression and anxiety in peacekeepers in Kosovo. Comparing the results to epidemiological data and other research, the incidence of depression (6.9%) in our findings was somewhat lower than in other similar studies. In Slovenia, Klemenc Ketis et al. (27) reported a prevalence of 15.2% patients with depression in the adult population aged between 18 and 64 years and at least one chronic disease present in 40.7% of the patients.

With regard to age, soldiers are most similar to the age demographic of students. In 2009, a sample of 1155 students aged 18-52 years was surveyed for the incidence of depression and anxiety (28). Klemenc-Ketis et al. (28) found the prevalence of anxiety in students to be 5.3%; in our analysis, it was

somewhat higher, 7.9%. The prevalence of depression among students was 4.5%, while in soldiers there were more depressive symptoms (6.9%), which is understandable given the living and working conditions of peacekeepers. A survey of the active population of primary care patients aged between 18 and 64 years with at least one co-occurring chronic disease in Slovenia, indentifying the prevalence of anxiety and depression in a randomised sample of 500 subjects, showed a 15.2% prevalence of depression (in soldiers 6.9%) and 8.4% incidence of anxiety (in soldiers 7.9%) (29). At least one chronic disease was present in 40.7% of the general population, which is almost identical to that of the student population, where the proportion was 40.3% (28). The proportion of chronic diseases in soldiers was only 4.43%, which was probably due to the medical and psychological tests administered prior to their departure for the peacekeeping operation. The lower incidence of depression and anxiety in soldiers is partly due to age (i.e. the maximum age of the soldiers in the sample was 55 years), since Copeland et al. (30) reported associations between age and the incidence of depression and anxiety in the general population.

The frequency of depression and anxiety rose sharply with the severity of pain (31). We believe that depression can intensify the feeling of chronic pain, while living with

chronic pain can contribute to depression – knowing that the symptoms of chronic pain, depression and anxiety often overlap in patients (32, 33). The co-occurrence of depression and chronic pain is reported to vary from 30% to 60% (34); in our sample, the VAS rate was associated with SDS and SAS scores (Table 3, Table 4). Patients with chronic pain have symptoms of depression or anxiety more frequently than those without, with depression intensifying other symptoms (35).

Several psychological factors have been associated with pain perception, but what predisposes certain individuals to be more sensitive to pain remains relatively unknown. Consistent with the bio-psycho-social model, the results of Lee et al. (36) suggest that multiple pain-related psychological measures most likely assess a common underlying factor, which is more predictive of the quality of pain than its intensity (36). Since intensity pain ratings were used in our study, we are therefore reluctant to put much weight on them.

Both depression and anxiety are known to be more prevalent in women (37, 38), but in our study female gender was not shown to be significantly associated with either the SDS or SAS score (Table 3) or with the co-occurrence of depression and anxiety (Table 4). In one of our previous studies on Slovenian Armed Forces members, longer sick leave duration was found in female soldiers (26) and a negative association between satisfaction with co-workers and female gender was identified (39). It was suggested that special attention should be given to female soldiers when planning supervision, work procedures, and the gender equality policy of the Armed Forces (39). However, in present study, female gender was not identified to be significantly associated with variables of interest, which is probably due to the low proportion of women in the surveyed group.

Level of education was shown to be a factor associated with either SDS or SAS scores (Table 3) or the co-occurrence of depression and anxiety (Table 4), which is in accordance with the results of other authors (16). The death of a significant other can result in a depressive reaction in any individual, regardless of age, who finds such stressors overwhelming. These stressors are most commonly seen, however, in the elderly. The presence of multiple stressors or the inability to cope can result in an episode of depression (40). We showed that the loss of a loved one may generate a bereavement response that portrays a pathological appearance. The end of an intimate relationship due to the death of the spouse or separation was significantly associated with both SDS and SAS scores (Table 3) and the co-occurrence of depression and anxiety (Table 4). The stress of losing

a spouse outranks all others, although grieving over the loss of any significant person can, in itself, precipitate depression. Depressive symptoms associated with bereavement are too often overlooked by health care personnel as “normal” for a grieving subject (40).

The psychosocial work environment is also important for mental health. The impact of work stressors on common mental disorders has been reported to differ for women and men (41). Stansfeld and Candy (41) found that job strain, low decision latitude, low social support, high psychological demands, effort-reward imbalance and high job insecurity predicted common mental disorders. A study of Slovenian soldiers showed that anxiety correlates negatively with problem-focused and positively with avoidant coping strategies (42). On the other hand, another study showed that coping strategies do not affect self-reported sick leave in Slovenian soldiers (26).

Since job demands, stress and the coping strategies of the soldiers on missions were not controlled in this study, which is an important limitation, we are not able to speculate about the impact of operational stress on the incidence of anxiety and depression. However, the results from Griffin et al. (43) made us aware of the risks associated with low control at work, since the authors noted that men in the middle grade with low work control were at risk of depression, while those in the lowest grade were at risk of anxiety. Moreover, results obtained in a cross-sectional study by Griffin et al. (44) in British civil servants showed that the demand/control/support model explained the most variance in depression and anxiety symptoms.

Since coping strategies have been shown to moderate the effects of stress on physical and psychological health (45), further research focused on coping in association with depression and anxiety is needed in the Slovenian Armed Forces carrying out OOTW. Emotion-focused coping should be analysed thoroughly, as people who predominantly use emotion-focused coping tend to have poorer psychosocial and physical health outcomes than people who rely mostly on problem-focused coping (46). Most studies of the coping strategies of soldiers indicate that the use of emotion-focused coping is associated with more severe post-traumatic stress disorder (PTSD) symptoms, higher family-related stress, lower psychological well-being and more reported physical illness symptoms (47). In our study, personality traits were not analysed, which is another limitation, since the way people perceive and cope with distress is associated with their personality traits (48).

In peacekeepers, intervention at the level of work design, organisation and management might have

positive effects on mental health. Furthermore, measures associated with job resources (e.g., social support and skill utilisation) might have a protective effect on depression and anxiety symptoms, as stated by Griffin et al. (44).

4.1 Limitations

Aside from coping and personality traits, which were not analysed in the study, it should be noted that our results might not be applicable to military settings in other national armies due to cultural differences. This calls for further research to implement a cross-cultural aspect into studies of anxiety and depression in the military. Further research is needed regarding environmental and situational factors in military settings in order to optimise interventions to reduce anxiety and depression in the military population.

The cross-sectional survey design is inherently limited and, together with reliance on self-reported data, raises questions about the potential for method variance (i.e. same-source measurement bias) to account for our findings. Although the phenomenon being studied could have been assessed only by asking respondents to report an internal state or perception, it would be useful for some other measures to be incorporated in further research design (e.g. thorough checking of medical records to obtain exact health sick leave related data etc.) and measured over time (prospective study), to mitigate the potential effects of method variance.

Due to the structure of the sample in comparison with the whole Armed Forces, the conclusions made are more valid for Privates than NCOs and Officers serving OOTW.

5 CONCLUSIONS

Low levels of mental disorders in peacekeeping military personnel support the existing rigorous pre-mission assessment of soldiers sent to OOTW. However, in spite of a lower incidence of depression and anxiety when compared to the general population, a 6.9% prevalence of depression and 7.9% prevalence of anxiety have to be taken seriously by Armed Forces health care personnel and commanding officers, especially when taking into account that these conditions appeared after five months of service in OOTW. The results of our study revealed that special attention, psychological support and early identification of emerging symptoms should be provided for subjects reporting chronic pain and those whose intimate relationship has been terminated in the near past. As widows and widowers are easily

identified in such a group, identification of intimate relationship problems (e.g. separation) might present a bigger problem. The duration of participation in OOTW should also be reconsidered by Armed Forces health care personnel and commanding officers; however, NATO and other standards to be followed might make a shorter period of service in OOTW impossible.

Future studies should explore how peer support can help in the timely identification of emerging mental disorders. Educational material on the correlates of mental issues might help in identification and self-identification, thus recognising a need for professional help.

It seems plausible that teaching peacekeepers themselves how to use their social support and individual mastery resources would be beneficial. Another possibility in the military is peer social support intervention, providing members with information and emotional support and resources that are beyond those possessed directly by an individual.

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