



The Psychological Well-Being of Finnish Peacekeeping Veterans Post-Deployment

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ABSTRACT

International peacekeeping operations often take place in environments in which frequent exposure to high levels of stress is likely. Thus, implications to psychological well-being can be expected. This study examined the psychological well-being of peacekeeping veterans post-deployment and assessed possible contributing factors during deployment. A total of 2,317 Finnish veterans of peacekeeping operations took the survey within 3 months post-deployment on average; the survey covered the following categories: job strain during the operation, potentially traumatic events during deployment, and post-deployment symptoms.

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AN OVERVIEW OF THE FINNISH DEFENCE FORCES

The Finnish military is collectively known as the Finnish Defence Forces, and its primary purpose is as the military defense of Finland. This includes the land, maritime, and airspace territory of the country, as well as the upholding of lawful order in the Finnish society. The Finnish Defence Forces are responsible for all military training in Finland, the most significant of which is the training of approximately 22,000 conscripts each year. The Finnish Defence Forces also support other authorities in maintaining order and security as well as participating in rescue operations. Internationally, the Finnish Defence Forces participate in multinational regional monitoring and crisis management (*Puolustusvoimien henkilöstöstrategia*, 2015).

The Finnish Defence Forces comprised of approximately 12,000 permanent job positions in 2015, of which 8,000 were military positions and 4,000 civilian positions. Wartime units are divided into rapid response units and primary units based on their readiness level, as well as into operative, regional, and local forces based on the requirements placed on the units. In total, the wartime strength of the Finnish military is approximately 280,000 soldiers, most of whom are reservists. Every reservist and currently serving employee of the Finnish Defense Forces has been assigned a wartime unit, and the skills required to maintain readiness for those units are regularly trained, for example, via refresher exercises for reservists (*Puolustusvoimien henkilöstöstrategia*, 2015).

In a military context, “veteran” refers to a person who has participated in a conflict and survived it. “War veteran” is a generally applicable term for these persons. In a colloquial Finnish context, “war veteran” most typically refers to veterans of the Second World War. Crisis management operations refer to activity aimed at maintaining and developing peace. In Finland, any person who has passed military training may apply to crisis management operations. Both reservists and full-time employees of the Finnish Defence Forces participate in crisis management operations globally, organized by NATO, the United Nations, and the European Union. “Crisis management veteran” or “peacekeeping veteran” refers to a person who has participated and survived such an operation (*Puolustusvoimat.fi*). In this study, the terms “peacekeeping veteran” and “peacekeeping operation” are preferred to maintain a distinction between military and civilian crisis management operations, as well as to maintain congruence with other research literature on the subject.

MENTAL HEALTH OF PEACEKEEPING VETERANS

International peacekeeping operations often take place in environments in which frequent exposure to high levels of stress is likely. Most participants of such operations tolerate the demands of such environments well, and experience no more psychological distress post-deployment than the general population does (Sareen et al., 2010). However, an association between peacekeeping operations and higher risk of psychological symptoms has been established in research literature (e.g., Kaikkonen & Laukkala, 2016; Souza et al., 2011). The most common psychological issues peacekeeping veterans face include posttraumatic stress disorder (PTSD), depression, anxiety, insomnia, and substance abuse. In a study by Forbes et al. (2016), over 30% of peacekeeping veterans reported psychological problems, including a higher risk of suicide and a PTSD incidence 3 times higher than in the general population. Research on the incidence of PTSD in peacekeeping veterans provides mixed results, but it has been proposed that 2–8% of peacekeeping veterans suffer from some degree of posttraumatic symptoms within 3 years of the deployment ending (Pearn, 2000). In general, most psychological symptoms tend to present within a year of returning home (Kaikkonen & Laukkala, 2016), but trauma-related symptoms may take significantly longer to present (Bonanno, 2008), with studies indicating onset of PTSD symptoms sometimes presenting after 18 months (Gray et al., 2004), and heightened overall psychological distress years, even decades after the peacekeeping operation (Forbes et al., 2016; Gjerstad et al., 2020; Hoge et al., 2004; O’Toole et al., 1996; Kulka, 1990).

Research on the topic has also identified events during the deployment that predict psychological symptoms developing later (e.g., Sareen et al., 2007). These potentially traumatic events often involve acute, high-strain situations. For example, a direct attack and being in a combat situation have been associated with significantly higher risk of PTSD and other psychological problems later in life (Hoge et al., 2004). Studies have also indicated a link between the number of peacekeeping operations a person participates in and psychological problems (Sareen et al., 2010). For example, the risk for severe depression increased as the number of peacekeeping operations increased, and the risk had doubled after just two deployments (Forbes et al., 2016). Finally, the process of returning home from a peacekeeping deployment as well as life immediately after deployment are highly stressful, often even more stressful than the deployment itself (Anttila, 2019), which highlights the importance of long-term monitoring.

METHODS

DATA COLLECTION

A survey for returning peacekeeping veterans was administered via the online platform Moodle. Respondents took the survey within approximately 1 year of returning, with 90% of the respondents taking the survey within the first 5 months after returning home.

STRUCTURE OF THE SURVEY

Before taking the survey, each respondent was informed of the purposes of the survey and that taking the survey was completely optional. Additionally, the respondents were assured of the anonymity of their answers.

The survey comprised distinct sections: background information, motivational factors, various job strain factors during the peacekeeping operation, various potentially traumatic events during the operation, identified traumatic events during the operation, as well as various post-deployment clinical symptoms. At the end of the survey, the respondents were offered an option to freely comment their thoughts on the peacekeeping operations as well as their thoughts on the survey itself.

Non-Clinical Subsections

In the *background information* section, various background factors of the respondents: age, rank or prior peacekeeping experience were obtained. This section also included the respondents' subjective opinions on whether they received enough training pre-deployment, as well as their primary motivation for participating in the peacekeeping operation (with 9 predefined options as well as an open answer field).

In the *returning home after deployment* section, respondents were asked to describe the environment into which they returned after the peacekeeping operation. The questions concerned, among others, the family status and employment/education status of the respondents.

In the *job strain during deployment* section, various possible sources of work stress in the form of job strain were asked. The possible sources were strain due to work community, strain due to adapting into a new environment, strain due to organization of work, as well as strain due to the content of work (Johansson, 2001; Leskinen & Keskinen, 2014). Each of these aspects were evaluated by the respondents on a 5-point Likert scale, with 1 reflecting a highly resource-increasing factor and 5 reflecting a highly resource-straining factor.

The *potentially traumatic events during deployment* section contained a scale created with the help of interview data and research literature. The respondents were asked on a 5-point Likert scale to evaluate how often they faced

various potentially traumatic events, such as witnessing dead bodies or being under indirect fire (Adler et al., 2003; Leskinen & Keskinen, 2014). On this scale, 1 was equivalent to never facing the event in question, while 5 equated to such events being a daily occurrence. In addition to evaluating the cumulative amount of potentially traumatic events from an individual perspective, this scale allowed the obtaining of data on the general frequency of such events in Finnish peacekeeping units.

Finally, the *deployment-related traumatic events* section asked the respondents directly whether they had been in situations that they considered traumatic. A positive answer was followed by questions further inquiring whether the traumatic event was related to the contents of the operation itself or external factors (e.g. family), and further guided the respondent to take the Trauma Screening Questionnaire (TSQ).

Post-Deployment Clinical Symptoms

These scales were intended to produce reliable and extensive data on the respondents' mental health status.

The Trauma Screening Questionnaire (TSQ) is a questionnaire developed for the identification of posttraumatic stress reactions. The questionnaire presents 10 possible symptoms that the respondent may have exhibited following a traumatic event with a simple "yes" or "no" answer. The TSQ is recommended to be administered no earlier than a month after a traumatic event (Brewin et al., 2002). The cutoff point for heightened risk of posttraumatic stress disorder is 6 or more "yes" answers out of 10.

The Depression Scale (DEPS) is a scale developed for the examining of depression-related symptoms (Salokangas et al., 1994). The scale consists of 10 questions regarding the quality and quantity of various depressive symptoms, such as sleeplessness, irritability, or sadness. The survey in this study utilized a 5-point version of the scale, in which 1 represents a very low and 5 a very high amount of the symptom in question. The cutoff point for heightened depressive symptoms is a sum of 9 points or higher.

The Alcohol Use Disorder Identification Test-Concise (AUDIT-C) is a questionnaire used for assessing possible alcohol-related risk behavior. The questionnaire consists of 3 questions with a 5-point scale for answering. The cutoff point for heightened risk of alcohol use disorder was a sum of 6 or more points.

The stress symptoms questionnaire is a questionnaire used to assess the degree of stress felt by the respondents after returning home from peacekeeping missions. This study utilized an 11-question version of the questionnaire developed by the Department of Behavioral Sciences of the

Finnish National Defense University. It is originally based on a 32-question survey developed by the Institute of Occupational Health (Leskinen, 2011). Each question was answered based on a 5-point scale, in which 1 represented no feelings of the type of stress in question, while 5 represented an extreme amount of such feelings of stress. The cutoff point for heightened stress symptoms was either a single “5” answer or at least two “4” answers.

The Sense of Coherence-13 (SoC-13) is a shortened version of the Antonovsky (1979) scale used to determine the sense of coherence in life. This study used a further shortened, 12-question version of the SoC-13 developed by the Department of Behavioral Sciences for military purposes (Leskinen, 2011). The scale consists of 3 dimensions: meaningfulness, comprehensibility, and manageability (Antonovsky, 1979, 1993). A higher sum of points reflects a higher sense of coherence. In this study, the cutoff point used was a single “1” or “2” answer to any of the 12 questions.

Cutoff Points for Heightened Clinical Risk

Point-based cutoffs for each of the aforementioned clinical scales and questionnaires were identified to reflect a heightened risk for clinically significant symptoms. This allowed the survey to be used as a screening tool to identify the respondents who may need additional support, and guide them to psychosocial resources. The cutoff point for stress symptoms was based on a study by Leskinen and Keskinen (2014). The DEPS cutoff point used in this study was derived from Poutanen et al. (2010), in which a sum of 9 points or more was identified as the ideal cutoff for any level of depression. The AUDIT-C has a cutoff point based on the general Finnish civilian population (Tuunanen et al., 2007). The cutoff point for the shortened, modified-for-military-use version of SoC-13 used in this study is based on a previous study on peacekeeping missions (Leskinen, 2011). Finally, the cutoff point for the TSQ was based on a British civilian sample (Brewin et al., 2002). The scales used as well as their cutoff points are concisely laid out in Table 1 below.

SCALE	CUTOFF POINT
DEPS	Sum of answers higher than 9
AUDIT-C	Sum of answers higher than 6
SoC-13(12)	One or more answers of “1” or “2”
TSQ	6 or more “yes” answers
Stress symptoms	At least two answers of “4” or at least one of “5”

Table 1 Scales and Their Cutoff Points Used in this Study.

RESULTS

ANALYSIS

The results of the survey were analyzed with SPSS. As neither the scales for clinical symptoms nor the scales for job strain during deployment passed normality tests, intergroup comparisons were conducted with either Mann-Whitney’s U-test (when comparing two groups) or the Kruskal-Wallis one-way ANOVA (three or more groups). The effect sizes for Mann-Whitney’s U-test were calculated with the formula:

$$r = z/\sqrt{n}$$

The open-ended responses, questions about bullying, as well as other dichotomic variables and their association with other variables were inspected with the chi-square test. For correlations of the continuous sum variables of clinical symptoms, Pearson’s correlation was utilized. For other variables using a Likert scale, Spearman’s correlation was used. Multiple regression was used to inspect the associations between clinical symptoms and background variables. The reliability of each clinical scale was calculated with the alpha method of reliability analysis. Factor analyses were calculated using principal component analysis.

BACKGROUND VARIABLES

In total, 2,317 veterans of peacekeeping missions took the survey between September 2015 and August 2020. Close to three quarters of the respondents (73.1%) had returned from their peacekeeping deployment at most 3 months prior to taking the survey. For 64.4% of the respondents, the deployment they had returned from was also their first ever peacekeeping mission. Two point nine percent had their deployment prematurely ended. The typical respondent was under 25 years of age (32.9% of all respondents). Of personnel groups, NCOs and commissioned officers were the two largest groups (42.7% and 26.2%, respectively). The most typical educational backgrounds were vocational school (29.3%) and university-level degree (26.8%). Almost half of the respondents, 49.7%, lived with their partner at the time of taking the survey. Further details of the respondents’ backgrounds can be found in Table 2 below.

Age

The respondents’ age were statistically significantly linked to the strain caused by work community, adapting to new environments, work organization, and contents of work; the number of operation-related potentially traumatic events; and post-deployment sense of coherence and

QUESTION	FREQUENCY	%
Age		
Less than 25 years old	763	32.9%
25–30 years old	551	23.8%
31–40 years old	543	23.4%
Over 40 years old	460	19.9%
How many months has it been since returning from the mission?		
1 month	392	16.9%
2 months	706	30.5%
3 months	596	25.7%
4 months	287	12.4%
5 months	170	7.3%
6–7 months	103	4.4%
8–9 months	26	1.1%
10–11 months	12	0.5%
12 months or more	25	1.1%
Did your deployment end prematurely?		
Yes	68	2.9%
No	2249	97.1%
Which personnel group did you belong to?		
Retired from active service	48	2.1%
Civilian	29	1.3%
Rank-and-file soldier	422	18.2%
Military official	81	3.5%
Non-commissioned officer	989	42.7%
Warrant officer	104	4.5%
Special officer	36	1.6%
Officer	608	26.2%
Education background		
Comprehensive school	15	0.6%
Upper secondary school	598	25.8%
Vocational school or eq.	679	29.3%
University of applied sciences or warrant officer	405	17.5%
University or cadet degree	620	26.8%

(Contd.)

QUESTION	FREQUENCY	%
How many times have you participated in peacekeeping missions?		
Once	1493	64.4%
Twice	419	18.1%
Thrice	195	8.4%
Four times or more	210	9.1%
Current type of habitation		
Live on my own	794	34.3%
Live with partner and/or married	1152	49.7%
Live with parents	263	11.4%
Some other way of living	108	4.7%

Table 2 Respondents' Background Information.

alcohol use. Details of these associations can be found in [Table 3](#) below.

Motivation for Participating in Peacekeeping Missions

In this study, the three most common primary motivations for participating in peacekeeping missions were professional accreditation (28.4%), wanting to do something meaningful (19.5%), and wanting to get away from everyday life in home country (11.6%).

Those who expressed professional accreditation as their primary motivation were typically older (Mann-Whitney, $U = 72\ 815$, $p < .001$), reported greater sense of coherence ($U = 647\ 636,000$, $p < .001$), as well as lower strain due to work community ($U = 465\ 758$, $p < .001$), lower strain due to work-related organization ($U = 494\ 507,500$, $p < .001$), fewer feelings of stress post-deployment ($U = 489\ 935$, $p < .001$), fewer symptoms of depression post-deployment ($U = 482\ 919,500$, $p < .001$), and lower alcohol use post-deployment ($U = 401\ 303,500$, $p < .001$).

The respondents who expressed the want to do something meaningful as their primary motivation were typically younger ($U = 289\ 403,500$, $p < .001$), felt less strain due to work-related organization ($U = 383\ 737,500$, $p = .004$), and reported experiencing traumatic events more often ($U = 453\ 612,500$, $p = .010$).

Finally, the respondents to whom wanting to get away from their everyday life at home tended to be older ($U = 310\ 297$, $p < .001$), report greater strain due to work community ($U = 312\ 543,500$, $p < .001$) and strain due to work-related organization ($U = 248\ 628$, $p = .009$),

VARIABLE	AGE (r)
Strain due to work community	.010
Strain due to adapting to new environments	.137**
Strain due to work-related organization	.123**
Strain due to work contents	.119**
Number of potentially traumatic events during deployment	.117**
Posttraumatic stress symptoms post-deployment	.023
Feelings of stress post-deployment	.010
Symptoms of depression post-deployment	-.001
Sense of coherence post-deployment	.107**
Alcohol use post-deployment	-.179**

Table 3 Associations Between Age and Various Factors of Job Strain and Post-Deployment Symptoms.

Note. ** $p < .01$.

experienced more feelings of stress post-deployment ($U = 296\ 204, p = .038$), experienced more depressive symptoms post-deployment ($U = 293\ 657, p = .045$), reported using more alcohol post-deployment ($U = 250\ 594,500, p = .028$), and experienced lower sense of coherence ($U = 237\ 177, p < .001$).

Premature Ending of Deployment

The respondents whose peacekeeping deployment ended prematurely reported more strain due to adapting into new environments (Mann-Whitney, $U = 64\ 946, p = .033$) and work-related organization ($U = 64\ 056,5, p = .022$). They also reported more feelings of stress post-deployment ($U = 59\ 300,5, p = .001$), more symptoms of depression post-deployment ($U = 63\ 234, p = .006$), and a lower sense of coherence ($U = 91\ 523,5, p = .005$). However, the effect

sizes remained small ($r < .10$) for all aforementioned variables.

Bullying During Deployment

Sixty-three respondents (2.7%) reported being the victim of bullying during their peacekeeping deployment. Being the victim of bullying was associated to all job-related strain factors ($U = 36\ 027, p < .001$), and exposed the victims to significant post-traumatic symptoms post-deployment ($U = 5283,5, p = .008$), as well as more feelings of stress ($U = 41\ 234, p < .001$), depressive symptoms ($U = 40\ 581, p < .001$) and lower sense of coherence ($U = 94\ 634,5, p < .001$) post-deployment. The effect sizes were greatest for job strain factors ($r = .139$), symptoms of depression ($r = .137$) and feelings of stress ($r = .122$). Victims of bullying were also more likely to exceed the clinical cutoff points for feelings of stress ($\chi^2(1, N = 2317) = 39,698, p < .001$), sense of coherence ($\chi^2(1, N = 2317) = 37,871, p < .001$), and depression ($\chi^2(1, N = 2317) = 35,965, p < .001$).

FORMS OF JOB STRAIN DURING DEPLOYMENT

The associations between various forms of job strain and clinical symptoms is displayed in detail in Table 4 (below).

In the category of work community, 8.2% of all respondents experienced at least one subsection of work community to be extremely straining. Among these respondents, the most common subsections were the behavior of immediate superiors (35.3% considered extremely straining), the different treatment of reservists and commissioned staff (30.5% considered extremely straining), and cooperation between units of different nationalities (22.1% considered extremely straining). The level of work community-related strain was associated with post-deployment sense of coherence ($r = -.297$), feelings of stress ($r = .236$), and symptoms of depression ($r = .202$).

VARIABLE	POST TRAUMATIC SYMPTOMS	FEELINGS OF STRESS	SYMPTOMS OF DEPRESSION	SENSE OF COHERENCE	ALCOHOL USE
Strain due to work community	-.003	.236**	.202**	-.297**	.072**
Strain due to adapting to new environments	.220**	.326**	.220**	-.229**	-.007
Strain due to quality of work-related organization	-.052	.223**	.173**	-.277**	.036
Strain due to contents of work	.186**	.309**	.195**	-.191**	-.030
All forms of job strain	.108*	.326**	.245**	-.336**	.039

Table 4 Forms of Job Strain and Their Association With Clinical Symptoms.

Note. * $p < .05$, ** $p < .01$.

For the category adapting to new environments, 23.1% of all respondents experienced at least one subsection of adapting to new environments as extremely straining. Among these respondents, the most common subsections were concern about the well-being of loved ones at home (34.9% considered extremely straining), longing for loved ones (24.1% considered extremely straining), as well as lack of privacy (21.6% considered extremely straining). Adapting to new environments was most associated with post-deployment feelings of stress ($r = .326$), sense of coherence ($r = -.229$), symptoms of depression ($r = .22$), and posttraumatic symptoms ($r = .22$).

Within the quality of work-related organization section, 13.2% of all respondents reported at least one subsection of the quality of work-related organization as extremely straining. Among these respondents, the most common subsections were the quality of logistics, maintenance and supply chains (36.7% considered extremely straining), sharing of authority and responsibility among different nationalities (20.7% considered extremely straining), as well as the clarity and meaningfulness of the operation’s objectives (20.7% considered extremely straining). The quality of work-related organization was most associated with post-deployment sense of coherence ($r = -.277$), feelings of stress ($r = .223$), and symptoms of depression ($r = .173$).

Questions regarding the contents of work resulted in 12.6% of all respondents considered at least one subsection of the contents of work extremely straining. Among these respondents, the most common subsections were work monotony (41.4% considered extremely straining), demanding work schedule (26.7% considered extremely straining), and working at night (20.9% considered extremely straining). The contents of work were most associated with post-deployment feelings of stress ($r = .309$), symptoms of depression ($r = .195$), and sense of coherence ($r = -.191$).

POTENTIALLY TRAUMATIC EVENTS DURING DEPLOYMENT

Approximately half (48.8%) of respondents experienced potentially traumatic events never or rarely, while 17.7% experienced such events frequently or daily. The frequency of potentially traumatic events during deployment was most strongly associated with post-deployment posttraumatic symptoms ($r = .225$) and feelings of stress ($r = .22$). A more detailed layout of the associations between potentially traumatic events and post-deployment symptoms is presented in Table 5 below.

Of the 17.7% of respondents who experienced potentially traumatic events frequently or daily, the most common

events reported were witnessing human suffering and pain (48.2% experienced frequently or daily), crossing through minefields on foot or vehicle (39.2% experienced frequently or daily), and sense of powerlessness over not being able to help sufficiently (24.8% experienced frequently or daily). Being exposed to potentially traumatic events frequently or daily was associated with higher post-deployment posttraumatic symptoms (Mann-Whitney, $U = 1264,590$, $p < .001$), feelings of stress ($U = 11\ 900,030$, $p < .001$), depressive symptoms ($U = 10\ 828,126$, $p < .001$) and, perhaps surprisingly, lower alcohol use ($U = 10\ 782, 835$, $p = .033$). The effect sizes (r) were .178, .165, .098 and $-.05$, respectively.

CLINICAL SYMPTOM SCALES

The clinical symptom measures used in this study had some degree of overlap. The correlations between the scales can be seen in Table 6 (immediately below). An overview of the frequency of exceeding cutoff points as well as the reliability of the scales can be found in Table 7 (following Table 6).

SCALE	FREQUENCY OF POTENTIALLY TRAUMATIC EVENTS DURING DEPLOYMENT (r)
Posttraumatic symptoms	-.225**
Feelings of stress	-.220**
Symptoms of depression	-.124**
Sense of coherence	-.069**
Alcohol use	-.032

Table 5 The Correlations Between Potentially Traumatic Events and Post-Deployment Symptoms.

Note. ** $p < .01$.

SCALE	1.	2.	3.	4.	5.
1. Posttraumatic symptoms (TSQ)	—	.406**	.390**	-.286**	.032
2. Feelings of stress	.406**	—	.770**	-.589**	.087**
3. Depression (DEPS)	.390**	.770**	—	-.620**	.087**
4. Sense of Coherence (SoC-13)	-.286**	-.589**	-.620**	—	-.124**
5. Alcohol use (AUDIT-C)	.032	.087**	.087**	-.124**	—

Table 6 Correlations Between Measures of Clinical Symptoms.

Note. ** $p < .01$.

SCALE	FREQUENCY EXCEEDING CUTOFF POINT	RELIABILITY (CRONBACH'S α)
TSQ	3 (0.1 %)	.70
Feelings of stress	66 (2.8 %)	.90
DEPS	59 (2.5 %)	.88
SoC-13	167 (7.2 %)	.89
AUDIT-C	634 (29.6 %)	.39

Table 7 Frequency of Exceeding Cutoff Points and Reliability of Scales Used.

At least one aforementioned cutoff point for clinically heightened risk was exceeded by 35.5% of all respondents. Cutoff points were more likely to be exceeded by younger respondents ($\chi^2(1, N = 2317) = 48,898, p < .001$) than older respondents.

Post-Deployment Posttraumatic Symptoms

Possible posttraumatic stress was surveyed in respondents who answered affirmatively to the question,

Have you, at any point in your life, experienced an exceptionally threatening or destructive event which involved death or serious injury or threat thereof, or violation of yours or someone else's bodily autonomy, and during which you experienced intense fear, helplessness or terror?

Such experiences were reported by 540 respondents, or 23.3% of all participants. Of these 540 respondents, 216 further specified to have experienced such an event as a direct result of their peacekeeping deployment, while 234 had experienced such events either earlier in their life or indirectly during their deployment (e.g. „due to events at home). The majority of respondents (73.1%) did not report any posttraumatic stress symptoms during the past 2 weeks at the time of taking the survey. The clinical cutoff point for heightened risk of developing PTSD (6 points or more) was exceeded by 3 respondents. Each of these three respondents also exceeded the clinical cutoff points in at least one other category of symptoms (feelings of stress, depression, sense of coherence, and alcohol use).

A significant portion of the variance in posttraumatic symptoms was accounted for by a regression model consisting of feelings of stress, number of potentially traumatic events during deployment, and symptoms of depression ($R^2 adj. = .228, p < .001$). A more in-depth description of the regression model can be found in Appendix 1. The Trauma Screening Questionnaire used to assess posttraumatic symptoms was found to be acceptably reliable in this study ($\alpha = .70$).

Feelings of Stress

A majority of respondents at 79% reported feelings very little or no feelings of stress. The clinical cutoff point derived from earlier peacekeeping studies (at least 2 answers of “4” or 1 answer of “5”) was exceeded by 66 respondents, or 2.8% of all respondents. Those who exceeded the clinical cutoff point for feelings of stress were also more likely to exceed the cutoff point for symptoms of depression ($\chi^2(1, N = 2317) = 540,247, p < .001$) and sense of coherence ($\chi^2(1, N = 2317) = 306,303, p < .001$). In a regression model, symptoms of depression alone accounted for 62.4% of variance ($R^2 adj. = .624, p < .001$), although including sense of coherence, posttraumatic symptoms, alcohol use as well as strain due to contents of work, increased the determination coefficient marginally ($R^2 adj. = .667, p = .022$). Further description of the regression model can be found in Appendix 2. The feelings of stress scale used in this study was found to be extremely reliable ($\alpha = .90$). However, the scale also significantly correlated with DEPS ($r = .77$), indicating a degree of overlap in the contents of the two scales. Principal Component Analysis showed the scale to be unidimensional (see Appendix 3).

Symptoms of Depression

The majority of respondents (60.1%) reported no symptoms of depression post-deployment. Additionally, 97.5% of all respondents remained under the previously determined clinical cutoff point (9 points or more). This left 59 respondents (2.5%) whose symptoms of depression exceeded the clinical cutoff point. Exceeding the clinical cutoff point for depression was also associated with exceeding the cutoff points for feelings of stress ($\chi^2(1, N = 2317) = 540,247, p < .001$) and sense of coherence ($\chi^2(1, N = 2317) = 431,767, p < .001$).

DEPS was determined to be very reliable in this study ($\alpha = .88$). In a regression model, feelings of stress alone accounted for significant variance in symptoms of depression ($R^2 adj. = .624, p < .001$), while including sense of coherence, posttraumatic symptoms and strain due to quality of work organization marginally increased the coefficient of determination ($R^2 adj. = .673, p = .041$). A more detailed description of the regression model is found in Appendix 4.

Sense of Coherence

Regarding the sense of coherence, 71.5% reported only minor issues or no issues at all. The cutoff point derived from earlier studies (one or more answers of “1” or “2” on a 5-step scale) was exceeded by 167 respondents, or 7.2%. Exceeding the cutoff point for sense of coherence was also associated with exceeding the cutoff points for alcohol use

($\chi^2(1, N = 2143) = 5779, p = .020$), feelings of stress ($\chi^2(1, N = 2,317) = 306,303, p < .001$) and symptoms of depression ($\chi^2(1, N = 2317) = 431,767, p < .001$) more often. A model of age, strain due to quality of work organization, strain due to work contents, symptoms of depression and feelings of stress was able to account for a significant amount of the variance in sense of coherence ($R^2 \text{ adj.} = .452, p < .001$). The model is described in further detail in Appendix 5. The SoC-13 scale used in this study was found to be very reliable ($\alpha = .885$).

Alcohol Use

The clinical cutoff point for alcohol use (6 points or more) was exceeded by 29.6% of respondents. Exceeding the cutoff point for alcohol use was associated with more frequently exceeding the cutoff point for sense of coherence ($\chi^2(1, N = 2317) = 49,768, p = .002$) as well as higher levels of strain due to work community (Mann-Whitney, $U = 13\,048,493, p < .001$). A regression model consisting of age and post-deployment feelings of stress accounted for a very small amount of variance in alcohol use ($R^2 \text{ adj.} = .08, p < .001$). A more detailed description of the model can be found in Appendix 6. The AUDIT-C questionnaire used in this study was found to be of a substandard level of reliability ($\alpha = .391$).

RESPONDENTS' OPEN COMMENTS

At the end of the survey, respondents were offered an option to freely comment and share their thoughts on the survey and/or their peacekeeping mission. Just 333 respondents (14.4%) shared their thoughts and their responses were analyzed from a data-driven thematic point of view. Five central themes were identified, under which the responses were grouped. A single response could be grouped under multiple different themes based on its contents. The themes identified were (a) leadership-related issues, (b) a straining work community, (c) difficulties adapting back to everyday life and roles at home, (d) peacekeeping deployment as a positive experience, and (e) problems related to supply and logistics.

Leadership-related issues were reported by 49 respondents (14.7% of those who chose to respond to the open comments section). Issues that were identified included excessive micromanaging, unfair or inconsiderate treatment of reservists, poor communication, inexperienced leadership, and inability of superiors to handle constructive criticism. It is noteworthy that multiple respondents chose to openly name the superiors whose behavior they found lacking. Those respondents who reported leadership-related issues were more likely to have experienced

more strain due to work contents (Mann-Whitney, $U = 66\,846,500, p = .013$), adapting to new environments ($U = 65\,245,000, p = .035$), work community ($U = 4624,400, p < .001$), and quality of work organization ($U = 4\,629,094, p < .001$). However, the effect sizes remained small for all of the aforementioned variables ($r < .10$) excluding strain due to work community ($r = .10$).

A straining work community was brought up by 19 respondents (5.7% of those who responded to the open question). They described a lack of motivation, gossiping, as well as unprofessional or inappropriate behavior. Many of the complaints were related to soldiers of other nationalities. Singular mentions of bullying were also brought up. As work-community strain was already covered in the structured section of the survey, no further quantitative statistical analysis was conducted on this theme.

Difficulties adapting back to everyday life and roles at home were reported by 38 respondents (11.4% of those who responded to the open comments). A common difficulty brought up was related to sleep rhythm readjustment and refinding one's role in the family. One respondent shared: "The tiredness won't go away no matter how much I sleep. The recurring family fight related to the other person not knowing what I experienced during the operation or they simultaneously experienced at home will not settle." In terms of the clinical symptom scales, those who reported difficulties adapting back to home life also reported more feelings of stress (Mann-Whitney, $U = 67\,914,5, p < .001$), symptoms of depression ($U = 57\,214,5, p < .001$), and lower sense of coherence ($U = 30\,374,5, p = .001$) as well as more strain due to adapting to new environments during deployment ($U = 53\,793, p = .01$). The effect sizes, however, remained small ($r < .10$) for all the aforementioned variables with the exception of feelings of stress ($r = .13$). Those who reported difficulties adapting back to everyday life and roles at home were more likely to exceed the clinical cutoff points for feelings of stress ($\chi^2(1, N = 2317) = 8,165, p = .045$) and depression ($\chi^2(1, N = 2317) = 17,531, p = .002$).

Peacekeeping deployment as a positive experience was expressly reported by 62 respondents (18.6% of those who responded to the open comments). The typical way of expressing this was a simple "good trip" comment. Those who considered their deployment a positive experience reported more potentially traumatic events during their deployment (Mann-Whitney, $U = 81\,406, p = .026$), as well as less strain due to work community ($U = 5\,186,865, p = .025$), and quality of work organization ($U = 5\,192,130, p = .021$). The effect

sizes were small for all variables ($r < .10$). This group of respondents did not differ significantly in terms of exceeding cutoff points for the clinical scales. Finally, the respondents considering their deployment a positive experience were more likely to have chosen “wanting to do something meaningful” as their primary motivation for participating in a peacekeeping mission ($\chi^2 = 6,651$, $p = .010$).

Problems related to supply and logistics were reported by 13 respondents (3.9%). The typical problems mentioned included poor quality of food, difficulties maintaining a good standard of hygiene, and issues related to transportation of items. The respondents in this category also reported higher strain due to adapting to new environments (Mann-Whitney, $U = 21\,494$, $p = .06$) and quality of work organization ($U = 2403,197$, $p = .001$). However, effect sizes remained small ($r < .10$).

DISCUSSION

This study examined the psychological well-being of Finnish peacekeeping veterans post-deployment and assessed possible contributing factors during deployment. A total of 2,317 veterans of peacekeeping operations took the survey within 3 months post-deployment on average. The survey was divided into the following categories: background information, job strain during the operation, potentially traumatic events during deployment, and post-deployment symptoms. Clinical cutoff points were determined for each of the post-deployment symptom measures, which for posttraumatic symptoms were exceeded by 3 respondents, for feelings of stress by 66, for depression by 59, for sense of coherence by 167, and for alcohol risk use by 634 respondents. Of all respondents, 203 reported experiencing a traumatic event related to their deployment, which was associated with increased posttraumatic symptoms and feelings of stress post-deployment. The various forms of job strain reported by the peacekeeping veterans were associated with symptoms of depression, feelings of stress, as well as post-deployment sense of coherence. Sixty-three respondents reported being the victims of bullying during their deployment, which was associated with higher posttraumatic symptoms, feelings of stress and depression, and lower sense of coherence post-deployment. Alcohol use was associated with depression, feelings of stress, and lower sense of coherence. Finally, in the open comments section of the survey, respondents brought up leadership-related issues, problems with logistics, and facing challenges adapting back to everyday

life after deployment, but many positive experiences were also described.

On the whole, Finnish peacekeeping veterans generally manage well post-deployment. The levels of depression and posttraumatic symptoms remained below the civilian population of averages (Huttunen, 2018; Käypä Hoito, 2022). The use of alcohol by the peacekeeping veterans in this study was fairly, normally distributed, with the proportion of respondents exceeding the clinical cutoff point for increased risk of alcohol use disorder (29.6%) not differing significantly from the general Finnish working-age population (Finnish Institute of Health and Welfare, 2020). Taking the effect of age into account, the level of sense of coherence among the respondents in this study did not present obvious cause for concern when comparing to the mean levels of sense of coherence among Finnish conscripts (Kronström et al., 2021) or Swedish young adults (Lindmark et al., 2009). For the feelings of stress scale, no civilian population means can be found; however, the findings of this study were in line with findings in earlier studies of peacekeeping veterans in the 21st century (Leskinen, 2011).

Analysis of the feelings of stress measure used in the study raised some concerns: the measure is strongly correlated with the DEPS scale for measuring depression, and factor analysis shows both scales to be unidimensional. This may be explained due to the similar contents of the questions in both scales. For example, the feelings of stress scale contains questions directly pertaining to depression. On the other hand, stress and depression as phenomena have been found to be associated (Hewitt et al., 1992). It is worth noting, however, that another commonly used measure of stress, the Perceived Stress Scale (PSS), consists of two distinct dimensions of strain and coping (Hewitt et al., 1992), while factor analysis showed the feelings of stress scale to unidimensionally focus on the symptoms of stress. It may be that the stress measure used in this study fails to capture all aspects of the phenomenon of stress, and may struggle to justify its future inclusion in the survey alongside the depression scale.

A total of 86.2% of the respondents experienced at least one aspect of adapting to new local environments particularly straining. The most commonly experienced challenges were related to lack of privacy and communication with loved ones at home. These challenges were associated with post-deployment symptoms on multiple scales. In future deployments, offering sufficient chances of communicating with loved ones at home, and possibly being able to allocated private rooms where

peacekeepers may at least occasionally spend time alone could be an efficient way to alleviate strain and negative outcomes related to the new, often very different environment that peacekeepers are placed in.

Work community was considered particularly straining by 29.5% of the respondents and was associated with various post-deployment symptoms. One of the most reported issues was related to the unequal treatment of reservists and commissioned staff, which was additionally raised as a theme in the open comment section of the survey. One respondent described unequal disciplinary action for reservists and commissioned staff in cases of alcohol-related misdeeds. It is important to identify the dominant cultural aspects that maintain the dichotomy of reservists and commissioned staff and change the relevant behavior or thought patterns, as experienced injustice at the workplace is associated with various psychological symptoms (Okechukwu et al., 2014; Virtanen et al., 2018). Other straining factors reported were related to intercultural responsibilities and leadership during deployment: the open comment section provided specific examples of unhappiness related to cooperation with some other peacekeeping contingencies. Specific training or interventions aimed at creating an equal, multicultural work culture could be a significant boost to the well-being of peacekeeping personnel. Knowledge and understanding of the cultures and practices surrounding the peacekeeping operation are important both from the perspective of the peacekeepers themselves as well as the local population, as it improves communication and cooperation and reduces intergroup conflicts (Holohan, 2019).

Becoming the victim of bullying during peacekeeping deployment was a significant predictor of decreased psychological well-being post-deployment. The association between bullying and psychological symptoms was not significantly dependent on the amount of bullying experienced, with even infrequent bullying significantly predicting increased symptoms post-deployment. In research literature, bullying in military environments was been found to associate with higher levels of stress, anxiety and insomnia, as well as lower personnel cohesion and job performance on the organizational level (Stuart & Szeszeran, 2021). The issue is further complicated by a prevalent culture of silence surrounding such cases, both reducing the likelihood of reporting incidents of bullying as well as the likelihood of appropriate action being taken to intervene. Possible ways to decrease bullying may include clear guidelines that individuals in leadership positions strictly adhere to and show example of, as well as increased education and monitoring of possible bullying incidents.

Another interesting finding was that the respondents who described their deployment as a positive experience were more likely to be exposed to potentially traumatic events during their deployment, but did not exhibit significantly higher posttraumatic symptoms, nor did they experience significantly more likely events that they did consider traumatic (as per the description presented in the clinical symptoms scales section). This may indicate that a certain degree of threatening situations during a peacekeeping deployment prevent feelings of boredom and frustration, and perhaps reinforce the peacekeepers' preconceived notion of what a peacekeeping deployment looks like. This idea is supported by the finding that the respondents who expressly described their deployment as a positive experience were also more likely to have reported "wanting to do something meaningful" as their primary motivation for participating in the operation: being exposed to more threatening situations may reinforce the experience of meaningfulness.

The AUDIT-C failed to reach acceptable levels of reliability in this sample. This finding is surprisingly, as both in Finnish (Castrén et al., 2018) and Swedish (Lundin et al., 2015) populations the reliability of AUDIT-C has reached at least acceptable levels ($\alpha > .60$), and in studies of military personnel in particular (e.g., Bartone et al., 2017; Currier et al., 2018) the AUDIT-C has reached good reliability levels ($\alpha > .75$). The low reliability in this study suggests a need to utilize a more extensive screening of alcohol use behavior in future surveys, as alcohol risk use was by far the largest type of post-deployment symptom identified in this study.

Almost three-quarters of the respondents took the survey within 3 months of returning from their peacekeeping deployment. For the Trauma Screening Questionnaire, this may be too short of a timeframe: studies indicate that most mental health problems related to peacekeeping operations manifest within a year of discharge (e.g., Kaikkonen & Laukkala, 2016), many symptoms may not present themselves until even later (Bonanno, 2004). In a study by Gray et al. (2004), a small but significant number of veterans developed clinically significant symptoms of PTSD after 18 months of returning, despite not reporting particularly high levels of stress in earlier follow-ups. Thus, the true number of peacekeeping veterans at high risk of developing PTSD (3 respondents fulfilled the criteria) may not be accurately identified in this sample due to the short time period between returning from the peacekeeping deployment and taking the survey.

This study utilized a modified version of Antonovsky's (1993) Sense of Coherence scale. Using the clinical

cutoff point derived from an earlier peacekeeping study (Leskinen, 2011) a total of 167 respondents showed increased challenges related to sense of coherence in life. While younger age and lower level of education have been identified as predictors of lower sense of coherence (Antonovsky, 1993) on their own without a clear link to clinically significant symptoms, other studies focusing on conscripts or professional soldiers have found associations between sense of coherence and clinical symptoms (e.g., alcohol use, self-harm, psychiatric disorders, drug abuse). This suggests the scale is clinically meaningful even in the more selective sample used in this study.

In general, the use of clinical cutoff points in this survey was primarily motivated by the ability to refer the respondent to a social curator in case of higher levels of symptoms or risk factors. From this viewpoint, a certain degree of overlap between measures is acceptable and functions as a way to lower the threshold for contacting social services. Another way to lower this threshold and successfully identify and reach the persons in need of professional social support would be to add a direct question to the survey, asking whether the respondent feels that they want to or need to talk to a social curator. This way, each respondent could easily access social support if they feel the need for it regardless of whether they exceed a cutoff point in one of the five measures used. Conversely, the use of clinical cutoff points serves to identify those respondents, who have significant levels of symptoms but have not recognized the need for social support or for another reason have not previously contacted social services.

APPENDICES

MODEL		ΔR^2	B	SE B	β	P
1.	Feelings of stress	.192	.101	.009	.440	<.001
2.	Feelings of stress	.022	.095	.009	.413	<.001
	No. potentially traumatic events		.038	.010	.156	<.001
3.	Feelings of stress	.014	.057	.015	.247	<.001
	No. potentially traumatic events		.040	.010	.165	<.001
	Symptoms of depression		.090	.028	.208	<.001

Appendix 1 A regression model for the predicting factors of posttraumatic symptoms.

MODEL		ΔR^2	B	SE B	β	P
1.	Symptoms of depression	.625	1.483	.052	.790	<.001
2.	Symptoms of depression	.021	1.444	.051	.769	<.001
	Strain due to work content		.303	.056	.147	<.001
3.	Symptoms of depression	.011	1.282	.064	.683	<.001
	Strain due to work content		.306	.055	.148	<.001
	Sense of coherence		-.135	.033	-.137	<.001
4.	Symptoms of depression	.009	1.209	.066	.644	<.001
	Strain due to work content		.280	.055	.136	<.001
	Sense of coherence		-.129	.033	-.131	<.001
	Posttraumatic symptoms		.465	.126	.107	<.001
5.	Symptoms of depression	.004	1.208	.066	.644	<.001
	Strain due to work content		.284	.055	.138	<.001
	Sense of coherence		-.122	.033	-.124	<.001
	Posttraumatic symptoms		.465	.125	.107	<.001
	Alcohol use		.164	.071	.060	.022

Appendix 2 A regression model for the predicting factors of feelings of stress.

COMPONENT	EIGENVALUE	PROPORTION OF VARIANCE, %
1	5,682	51,658

Appendix 3 Factor analysis for feelings of stress. Eigenvalue 1 used as a cutoff point.

MODEL		ΔR^2	B	SE B	β	P
1.	Feelings of stress	.625	.421	.015	.790	<.001
2.	Feelings of stress	.044	.343	.017	.643	<.001
	Sense of coherence		-.134	.017	-.256	<.001
3.	Feelings of stress	.005	.327	.018	.613	<.001
	Sense of coherence		-.132	.017	-.251	<.001
	Posttraumatic symptoms		.174	.067	.075	<.001
4.	Feelings of stress	.003	.328	.018	.615	<.001
	Sense of coherence		-.139	.017	-.264	<.001
	Posttraumatic symptoms		.168	.067	.073	.012
	Strain due to work-related organization		-.020	.010	-.054	.041

Appendix 4 A regression model for the predicting factors of symptoms of depression.

MODEL		ΔR^2	B	SE B	β	P
1.	Symptoms of depression	.392	-1.190	.067	-.626	<.001
2.	Symptoms of depression	.033	-1.149	.065	-.605	<.001
	Strain due to work-related organization		-.128	.024	-.183	<.001
3.	Symptoms of depression	.013	-.874	.105	-.460	<.001
	Strain due to work-related organization		-.118	.024	-.170	<.001
	Feelings of stress		-.188	.056	-.185	<.001
4.	Symptoms of depression	.012	-.867	.104	-.456	<.001
	Strain due to work-related organization		-.125	.024	-.179	<.001
	Feelings of stress		-.185	.058	-.183	.001
	Age		.560	.169	.111	.001
5.	Symptoms of depression	.007	-.842	.104	-.443	<.001
	Strain due to work-related organization		-.143	.025	-.204	<.001
	Feelings of stress		-.215	.057	-.212	<.001
	Age		.500	.170	.099	.003
	Strain due to work content		.187	.077	.090	.022

Appendix 5 A regression model for the predicting factors of sense of coherence.

MODEL		ΔR^2	B	SE B	β	P
1.	Age	.071	-.483	.079	-.266	<.001
2.	Age	.013	-.476	.078	-.262	<.001
	Feelings of stress		.042	.016	.114	.009

Appendix 6 A regression model for the predicting factors of alcohol use.

COMPETING INTERESTS

The authors have no competing interests to declare.

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