

## Personality and Social Psychology

# The combined influence of hardiness and cohesion on mental health in a military peacekeeping mission: A prospective study

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A large number of studies have shown that hardiness and cohesion are associated with mental health in a military context. However, most of them are presented without controlling for baseline mental health symptoms, which is their most significant source of error. The present study investigates the combined effect of hardiness and cohesion in a prospective design, controlling for baseline levels of symptoms among Norwegian personnel serving in a peacekeeping operation in Kosovo. Multivariate regression analyses were performed in which self-reported mental health complaints were regressed on our explanatory variables. Our findings suggest that both cohesion and hardiness contributed to increased stress resiliency, as measured by a lower level of reported mental health complaints. Our baseline measure of mental health accounted for a larger proportion of the variance than our other predictors. A significant interaction between cohesion and hardiness suggested a combined effect, over and above the individual contributions of the predictors. For individuals who scored high on hardiness, cohesion levels did not influence levels of mental health complaints. Individuals who scored low on hardiness, on the other hand, reported lower levels of mental health complaints when cohesion levels were high.

**Key words:** Hardiness, cohesion, mental health, peacekeeping missions.

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## INTRODUCTION

Military units serving in international peacekeeping missions often operate under demanding and potentially traumatizing conditions, which, in turn, can lead to a number of mental health complaints among the deployed troops (e.g., Armistead-Jehle, Johnston, Wade & Ecklund, 2011; Rona, Jones, Sundin, Goodwin, Hull, Wessely & Fear, 2012). A large number of studies have shown that hardiness and cohesion are important resilience factors that are associated with mental health in a military context (e.g., Escolas, Pitts, Safer & Bartone, 2013; Jones, Seddon, Fear, McAllister, Wessely & Greenberg, 2012; King, King, Fairbank, Keane & Adams, 1998). In a recent meta-analysis, Eschleman, Bowling and Alarcon (2010) confirmed the view that hardiness is an important and unique stress-resiliency resource across a wide range of domains, also when controlling for the broad personality domains Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness within the framework of the Big Five. However, few studies have taken account of the soldiers' initial mental health before deployment. This can be considered a major source of error (Rona, Hooper, Jones *et al.*, 2009). To our knowledge, no prospective studies have assessed how hardiness and cohesion interact to influence subsequent mental health in a military context. The present study used a prospective design to examine how, individually and in combination, hardiness and cohesion influenced mental health, while at the same time controlling for baseline mental health symptoms.

Individuals high in hardiness are characterized by exhibiting a strong sense of control, challenge, and commitment (Maddi &

Kobasa, 1984). Individuals high in hardiness tend to have a belief in their own ability to control or influence the course of events, they perceive challenges and new events as potential opportunities for personal growth and learning, and they perceive the world as meaningful and interesting, and are actively engaged in what is going on around them. Hardiness can be regarded as an individual personality style – influencing positive coping strategies and maintaining good health under stress (Bartone, 1999; Bartone, Johnsen, Eid, Brun & Laberg, 2002).

Military unit cohesion can be viewed as an ongoing social integration process (Siebold, 2007), that influences health (Bartone & Adler, 1999; Griffith & Vaitkus, 1999), and it may counteract social disintegration, which is found to predict a range of negative health consequences (Cohen & Wills, 1985). Cohesion has been found to influence individual stress and group functioning (Griffith, 1989; Oliver, Harman, Hoover, Hayes & Pandhi, 1999), and both main effects and buffer effects of unit cohesion on mental health after deployment are reported (Armistead-Jehle *et al.*, 2011). For example, higher levels of unit cohesion were associated with lower levels of both mental health complaints and post-traumatic symptoms among UK and US soldiers (Brailey, Vasterling, Proctor, Constans & Friedman, 2007; Du Preez, Sundin, Wessely & Fear, 2012; Jones *et al.*, 2012; Mulligan, Jones, Woodhead, Davies, Wessely, & Greenberg, 2010). Post-traumatic symptoms prior to deployment are also found to predict later post-traumatic symptoms (Maguen, Litz, Wang & Cook, 2004). A study by Rona *et al.* (2009) showed that baseline psychological symptoms made an independent contribution to psychological symptoms at follow-up, and that cohesion had an effect on

mental health outcomes that was independent of previous mental health status.

#### *Combined influence of hardiness and cohesion*

The coping style most commonly associated with hardiness is transformational coping, an optimistic style of coping that transforms stressful events into less stressful ones (Kobasa, 1982a). On a theoretical level, the concept of transformational coping can be extended to include recruiting or making adequate use of social resources. Kobasa (1982b, p. 6), for example, has argued that hardiness is associated with an ability to “involve oneself fully in many situations of life including work, family, interpersonal relations, and social institutions.” She further states that the coping style associated with hardiness reflect individuals’ “ability to make good use of other human and environmental resources” (Kobasa & Puccetti, 1983, p. 840). One logical prediction that follow from hardiness theory is therefore that individuals high in hardiness will be better able to seek out and make use of social support and resources, and that hardiness and unit cohesion are two constructs that can be expected to interact in explaining psychological functioning.

Some support for this notion exists in the literature. For example, a study of army officers by Bartone, Ursano, Wright and Ingraham (1989) found that individuals who scored high on hardiness and reported high social support remained healthy under stressful circumstances, while those low in these resources were at greater risk of developing mental health problems. King, Fairbank, Keane and Adams (1998) further reported that Vietnam veterans who scored higher on hardiness exhibited fewer post-traumatic symptoms, and that, through social support, psychological hardiness had an indirect effect on symptoms. Finally, in a study of troops mobilized as part of Operation Desert Storm, Sutker, Davis, Uddo and Ditta (1995) found that veterans later classified as having no distress were characterized by higher levels of hardiness, social support and family cohesion than veterans classified as having post-traumatic stress disorder (PTSD).

#### *Study aims and hypotheses*

The first aim of this study was to confirm previous findings that hardiness and cohesion are valuable stress-resistance resources as individual predictors of mental health in a military context.

**Hypothesis 1a.** Higher levels of psychological hardiness (T1) are related to lower levels of mental health complaints (T3).

**Hypothesis 1b.** Higher levels of unit cohesion (T2) are related to lower levels of mental health complaints (T3).

The second aim of this study was to clarify the role of hardiness and cohesion when baseline mental health is controlled for.

**Hypothesis 2a.** Higher levels of psychological hardiness (T1) are related to lower levels of mental health complaints

(T3), when controlling for pre-deployment mental health (T1).

**Hypothesis 2b.** Higher levels of unit cohesion (T2) are related to lower levels of mental health complaints (T3), when controlling for pre-deployment mental health (T1).

If individuals high in hardiness are indeed more adept at seeking out and making use of available social resources, one would expect these individuals to benefit more from unit cohesion than individuals low in hardiness. Our final hypothesis was therefore:

**Hypothesis 3.** When controlling for mental health prior to deployment (T1), the effect of psychological hardiness (T1) interacts with unit cohesion (T2), so that peacekeeping soldiers scoring high on both hardiness and cohesion are likely to report lower levels of mental health complaints (T3).

## METHOD

### *Participants and procedure*

The data sample was drawn from a longitudinal survey conducted on the second Norwegian battalion that were deployed on a six-month mission to Kosovo (NORBN II). The battalion consisted of three infantry companies, an armored engineer company and a headquarters company.

The current study makes use of data from three different time points. Demographic information, psychological hardiness, and baseline mental health were registered three weeks prior to deployment (Time 1). Unit cohesion was measured two months into deployment (Time 2), and mental health was again registered four months into deployment (Time 3). As shown in Fig. 1, our sample size was reduced from an initial pool of 480 persons to 144 persons due to missing information for all or some of the study variables across the three time points. Among the participants, 93.8% ( $n = 135$ ) were male and 6.2% ( $n = 9$ ) were female; 6.3% ( $n = 9$ ) were under 21 years of age, 68.8% ( $n = 99$ ) were between 21 and 30 years old and 24.3% ( $n = 35$ ) were over 30 years old (one participant did not report age). The distribution of military rank was 42.4% ( $n = 61$ ) officers and 57.6% ( $n = 83$ ) privates. The participants’ main service functions in Kosovo were 43.1% ( $n = 62$ ) combat, 16.0% ( $n = 23$ ) support and 38.2% ( $n = 55$ ) staff (four participants did not report service function). A majority of the participants (67.4%,  $n = 97$ ) had previous experience from missions abroad.

The Norwegian Regional Committee for Medical and Health Research Ethics and the Armed Forces Headquarters approved the survey. Each company was given information about the purpose of the study, and the respondents completed the questionnaires individually. The questionnaires were handed out to each participant in a pre-addressed envelope, and participation in the survey was based on informed consent. It was emphasized that participation was voluntary and that the decision to participate or not would have no consequences for further service.

### *Measures*

**Hardiness.** A tested and validated Norwegian translation of the fifteen-item Dispositional Resilience Scale (DRS-15; Bartone, 1995; Johnsen, Eid & Bartone, 2004) was used to measure psychological hardiness. The DRS-15 consists of the following dimensions: control, commitment, and challenge, with five items measuring each dimension. Responses were recorded on a four-point scale (0 = *Not at all true* to 3 = *Completely true*). An example item is: “By working hard you can always achieve your

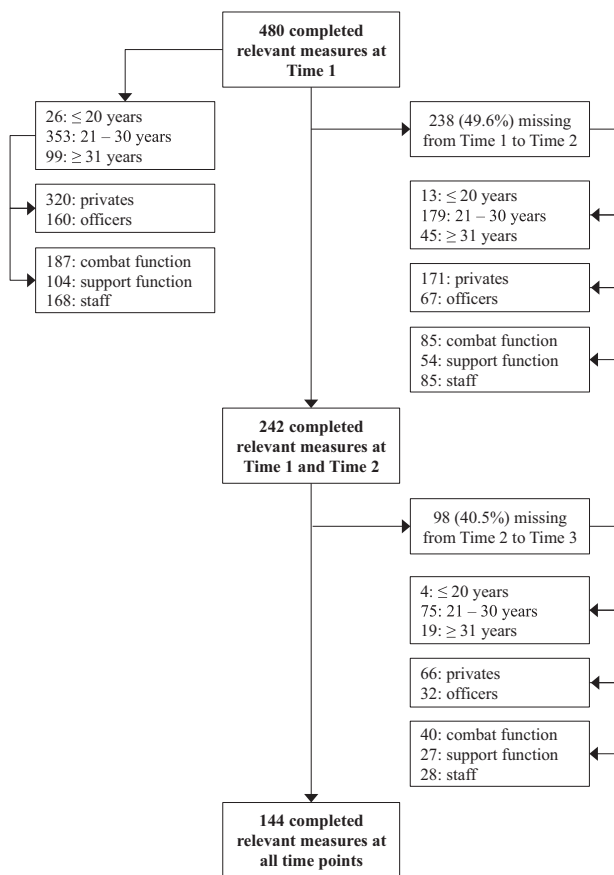


Fig. 1. Flow of participants through the three measurements points.

goals." Scores for total hardiness were computed after reverse scoring four negatively keyed items. In our sample, Cronbach's alpha for the total measure was 0.69, which is comparable to reliability estimates found in other studies (e.g., Bartone, Roland, Picano & Williams, 2008; Britt, Adler & Bartone, 2001; Hystad, Eid, Laberg & Bartone, 2011).

**Cohesion.** The respondents completed the Norwegian version of the Siebold and Kelly (1988) twenty-item Platoon Cohesion Index. This instrument is intended to measure three basic components of cohesion: horizontal, vertical, and organizational cohesion (Siebold, 1999). However, because the horizontal bonding scales have previously been reported to be strongly related to the ability to withstand stressful conditions (Siebold & Kelly, 1988), we selected only the four items that dealt directly with horizontal cohesion for our analysis (Bartone *et al.*, 2002). These items were: "Members of this unit have trust in each other," "Members of this unit care about each other," "Members of this unit work well together to get the job done," and "Members of this unit support each other as a team."

Horizontal cohesion refers to bonding among the group members at the same military hierarchical level (Siebold, 2011). The two first items measures an affective peer bonding component, and the two latter items measures an instrumental bonding or teamwork component (Siebold & Kelly, 1988). All items were scored on a five-point scale (1 = *Not at all true* to 5 = *Completely true*). Our sample demonstrated high reliability, with a 0.91 Cronbach's alpha coefficient.

**Mental health.** A Norwegian translation of The General Health Questionnaire GHQ-30 (Goldberg & Hillier, 1979; Malt, Mogstad & Refnir, 1989) was used to measure mental health complaints. The inventory consists of 30 statements that compare the respondents' normal situation to the present mental state (i.e., depression, anxiety, sleep problems, well-being, coping and social functioning) on a four-point scale with (1 = *Less than usual*, 2 = *Same as usual*, 3 = *More than usual*,

4 = *Much more than usual*). An example item is: "Have felt constantly under strain." The GHQ-30 has been shown to have the highest validity of the different versions (Goldberg & Williams, 1988), and satisfactory psychometric properties regarding reliability and construct validity was found for the Norwegian version (Dale, Söderhamn & Söderhamn, 2012). A total mental health complaints score was computed by summing the responses to all individual items (Cronbach's alpha = 0.86 at Time 1 and 0.89 at Time 3).

### Statistical analysis

We performed multivariate regression analyses to test our hypotheses. In the first analysis, self-reported mental health complaints were regressed on our explanatory variables. In the second analysis, baseline mental health was entered together with our explanatory variables. Because our dependent variable was positively skewed, with the majority reporting few mental health complaints, we used a square root transformation. The control variables for the soldiers' age and main function in Kosovo were recoded into dummy variables. Age was represented as two dummy variables, with 21–30 years serving as the reference group. Main function was represented as two dummy variables, with combat function serving as the reference group. The cohesion and hardiness measures were centered around their mean prior to computing the cross-product interaction term in order to reduce problems of collinearity and to simplify the interpretation and plotting of the results (Cohen, Cohen, West & Aiken, 2003).

## RESULTS

Means, standard deviations, and inter-correlations for the studied variables are shown in Table 1.

### Predictors of mental health

To examine Hypotheses 1a and 1b, the sequencing of predictors in the regression analysis was as follows: age, military rank, and main function were entered as control variables in the first step, followed by horizontal cohesion and personality hardiness in the next step. To evaluate the possibility that hardiness might interact with cohesion to exert an additional influence on mental health complaints, an interaction term was entered in the third and final step. As can be seen from Table 2, of the demographic control variables entered in Step 1, the main functions support ( $B = 0.30$ ) and staff ( $B = 0.22$ ) made a significant contribution to explaining self-reported mental health complaints,  $R^2 = 0.09$ ,  $F(5,138) = 2.81$ ,  $p = 0.019$ , and this contribution remained statistically significant throughout all three steps of our regression analysis. Compared to the soldiers with a combat function, support personnel and staff showed higher levels of mental health complaints.

In Step 2, cohesion ( $B = -0.04$ ) and hardiness ( $B = -0.03$ ) were entered in the analysis, both making a significant contribution in explaining self-reported mental health complaints. Combined, hardiness and cohesion resulted in a 13% increase in explained variations in mental health complaints,  $\Delta R^2 = 0.13$ ,  $F(2,136) = 11.16$ ,  $p < 0.001$ . In the third and final step, the interaction term cohesion x hardiness was entered, resulting in a statistically significant regression coefficient of  $B = 0.01$  ( $p = 0.004$ ). In total, our predictors explained approximately 27% of the variations in self-reported mental health complaints,  $R^2 = 0.27$ ,  $F(8,135) = 6.148$ ,  $p < 0.001$ .

Table 1. Means (*M*), standard deviations (*SD*) and correlations for the studied variables (*N* = 144)

Variables	<i>M</i>	Range	<i>SD</i>	1	2	3	4	5
1. Mental Health T1	47.95	31–78	6.76	–				
2. Mental Health T3	50.07	33–84	7.43	0.50**	–			
3. Hardiness T1	32.29	13–44	4.90	–0.40**	–0.29**	–		
4. Cohesion T2	16.22	5–20	3.29	–0.34**	–0.29**	0.21*	–	
5. Military Rank	42 <sup>a</sup>	–	–	0.11	0.17*	0.08	–0.20*	–

Notes: Theoretical range for mental health: 30–120, hardiness: 0–45 and cohesion: 4–20. Military rank is coded 0 = private and 1 = officer. <sup>a</sup> Indicated percentage of sample with rank = officer. \**p* < 0.05. \*\**p* < 0.01.

Table 2. Summary of multivariate regression analysis predicting self-reported mental health complaints (*N* = 144)

Variables	<i>n</i>	Step 1		Step 2		Step 3		
		<i>B</i>	SE <i>B</i>	<i>B</i>	SE <i>B</i>	<i>B</i>	SE <i>B</i>	95% CI
Age								
21–30 years	99	–	–	–	–	–	–	–
≤ 20 years	9	–0.12	0.07	–0.25	0.16	–0.27	0.16	[–0.60, 0.05]
≥ 31 years	35	–0.13	0.10	–0.09	0.10	–0.09	0.09	[–0.28, 0.09]
Military rank								
Private	83	–	–	–	–	–	–	–
Officer	61	0.12	0.09	0.08	0.09	0.08	0.09	[–0.09, 0.24]
Main function								
Combat	62	–	–	–	–	–	–	–
Support	23	0.30*	0.12	0.29*	0.11	0.28*	0.11	[0.06, 0.49]
Staff	55	0.22*	0.10	0.20*	0.09	0.21*	0.09	[0.03, 0.39]
Horizontal cohesion				–0.04**	0.01	–0.03**	0.01	[–0.06, –0.01]
Hardiness				–0.03**	0.01	–0.02*	0.01	[–0.04, –0.01]
Hardiness x cohesion						0.01**	0.00	[0.00, 0.01]
<i>R</i> <sup>2</sup>		0.09		0.22		0.27		
Adjusted <i>R</i> <sup>2</sup>		0.06		0.18		0.22		
<i>F</i>		2.81*		5.49***		6.15***		
$\Delta R^2$				0.13		0.05		
$\Delta F$				11.16***		8.59**		

Notes: Age category 21–31 years, rank of private and combat function serve as reference categories. CI = confidence interval for *B* at Step 3. \**p* < 0.05. \*\**p* < 0.01. \*\*\**p* < 0.001.

### Predictors when controlling for baseline mental health

To test Hypotheses 2a and 2b, we used a similar sequencing of predictors as in our first regression analysis, but, in order to control for prior psychological symptoms, baseline mental health complaints were entered together with our demographic variables in the first step (see Table 3). The main function support (*B* = 0.27) made a significant contribution, as did baseline mental health complaints (*B* = 0.04), model *R*<sup>2</sup> = 0.30, *F*(6,137) = 10.04, *p* < 0.001. Again, support personnel showed higher levels of mental health complaints than soldiers with a combat function. The contribution from the service function support remained statistically significant throughout all three steps of our regression analysis, while the service function staff did not reach levels of statistical significance.

Cohesion and hardiness were entered in Step 2, but did not explain a significant part of variations in mental health complaints. To examine Hypothesis 3, the cross-product cohesion × hardiness was entered in the third and final step. Entering the cross product terms resulted in a statistically significant increase in explained variation in mental health,

$\Delta R^2 = 0.02$ , *F*(1,134) = 4.83, *p* = 0.03, and a statistically significant regression coefficient of *B* = 0.004. In total, our predictors explained approximately 35% of the variance in self-reported mental health complaints, *R*<sup>2</sup> = 0.35, *F*(9,134) = 8.216, *p* < 0.001.

To interpret the interaction effect of cohesion and hardiness, we plotted the predicted values of self-reported mental health complaints for individuals scoring low (–1 SD) and high (+1 SD) on cohesion and for those scoring low (–1 SD) and high (+1 SD) on hardiness. As can be seen from Fig. 2, for individuals scoring high on hardiness, cohesion did not seem to have an effect on mental health complaints. In other words, levels of mental health complaints were comparable at low and high cohesion levels. For individuals scoring low on hardiness, however, cohesion seemed to have an effect on mental health complaints. In other words, respondents scoring high on cohesion reported lower levels of mental health complaints than those scoring low on cohesion. Follow-up tests showed that the simple slope for respondents low in hardiness was significantly different from zero (*t*[134] = –2.551, *p* = 0.012).

Table 3. Summary of multivariate regression analysis predicting self-reported mental health complaints when controlling for baseline mental health ( $N = 144$ )

Variables	<i>n</i>	Step 1		Step 2		Step 3		
		<i>B</i>	SE <i>B</i>	<i>B</i>	SE <i>B</i>	<i>B</i>	SE <i>B</i>	95% CI
Age								
21–30 years	99	–	–	–	–	–	–	–
≤ 20 years	9	–0.21	0.15	–0.26	0.15	–0.28	0.15	[–0.57, 0.02]
≥ 31 years	35	–0.00	0.09	–0.00	0.09	–0.01	0.09	[–0.19, 0.16]
Military rank								
Private	83	–	–	–	–	–	–	–
Officer	61	0.05	0.08	0.04	0.08	0.04	0.08	[–0.12, 0.20]
Main function								
Combat	62	–	–	–	–	–	–	–
Support	23	0.27*	0.10	0.27*	0.10	0.26*	0.10	[0.06, 0.46]
Staff	55	0.15	0.09	0.15	0.09	0.16	0.08	[–0.00, 0.33]
Baseline GHQ-30		0.04***	0.00	0.03***	0.01	0.03***	0.01	[0.01, 0.04]
Horizontal cohesion				–0.02	0.01	–0.02	0.01	[–0.04, 0.00]
Hardiness				–0.01	0.01	–0.01	0.01	[–0.03, 0.01]
Hardiness x cohesion						0.004*	0.00	[0.00, 0.01]
$R^2$		0.30		0.33		0.35		
Adjusted $R^2$		0.28		0.29		0.31		
$F$		10.04***		8.40***		8.22***		
$\Delta R^2$				0.03		0.02		
$\Delta F$				2.73		4.83**		

Notes: Age category 21–31 years, rank of private and combat function serve as reference categories. CI = confidence interval for *B* at Step 3. \* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

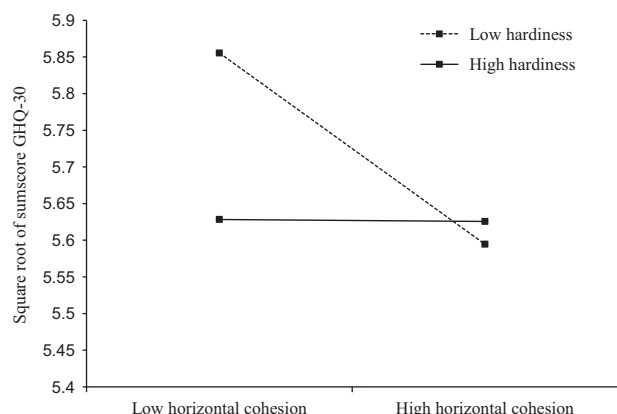


Fig. 2. The interaction effect between hardiness and cohesion on reported mental health complaints. Separate lines are shown for the predicted values for individuals scoring low (–1 standard deviation) and high (+1 standard deviation) on psychological hardiness.

## DISCUSSION

The aim of this study was to explore the association between hardiness, cohesion and mental health. As we proposed in our first hypothesis, the results replicated previous findings of the importance of hardiness and cohesion for mental health in a military context. However, when adjusting for baseline mental health, our second hypothesis was not supported. The results showed that hardiness and cohesion did not remain significantly associated with mental health.

As we had expected in our third hypothesis, we found a significant interaction between hardiness and cohesion. However, contrary to what was expected in Hypothesis 3, individuals high

in hardiness did not seem to make better use of the effects of cohesion than individuals low in hardiness. On the contrary, our results showed that for individuals scoring high on hardiness, cohesion levels did not influence levels of mental health complaints. For individuals who scored low on hardiness, on the other hand, higher levels of cohesion were still an important resilience factor that contributed to lower levels of mental health complaints. The proposal from hardiness theory (Kobasa & Puccetti, 1983) that individuals high in hardiness are more adept at making use of available social resources was therefore not supported, at least not in the context of cohesion.

The interaction effect found in our study can elaborate previous findings (e.g., Bartone *et al.*, 1989) by demonstrating that high levels of hardiness are associated with good mental health irrespective of reported levels of cohesion. Our results suggest that high hardy individuals are more capable of coping with the situation at hand, especially during high-stress conditions. The concept of transformational coping (Kobasa, 1982a) provides a possible explanation for this resilience mechanism, by theorizing that high hardy individuals are characterized by the ability to transform stressful events into less stressful ones. Furthermore, if high hardy individuals are more autonomously engaged in the world and transform their negative experiences in positive ways to a greater extent (Bartone, 2005), they would be less dependent on cohesion as shown in our study.

Individuals low in hardiness, on the other hand, will rely more on the social environment. According to Cohen and Wills (1985), the critical factor in relation to social support operating as a stress buffer is the perception that others will provide necessary social resources when needed. If those low in hardiness in our study were more dependent on external factors such as social support,



high levels of cohesion could be expected to strengthen their ability to cope with demands, thus changing the appraisal of the situation and reducing its negative mental health consequences. Thus, the present study suggests that the interaction effect of hardiness and cohesion on mental health could indicate that high hardy individuals to a greater extent interpret their experience as something they can exert control over, something that is interesting and worthwhile, and as a challenge providing opportunities to grow and learn.

Our sample was positively skewed and showed that, as could be expected due to selection, the deployed personnel had a generally low level of mental health complaints. In addition, support personnel and staff showed higher levels of mental health complaints than did soldiers with a combat function. This may be due to more strict health requirements for selection for combat units and because some personnel apply for less demanding service through self-selection.

Nevertheless, peace-enforcement operations such as the one in Kosovo were associated with a risk of psychopathology. However, Maguen *et al.* (2004) showed that peacekeeping duty in Kosovo was potentially personally rewarding, and the majority of soldiers generally cope exceptionally well with the complex demands and challenges of peacekeeping (Litz, Orsillo, Friedman, Ehlich & Batres, 1997). If stressful experiences can be cognitively framed as meaningful within a broader perspective, as a matter of personal choice, and the world is perceived as essentially interesting, then a stressful experience can actually have beneficial psychological effects rather than harmful ones.

These positive interpretations of high-stress conditions can, in turn, also have an impact at the group level. Hardy individuals may contribute to a shared understanding of stressful events as interesting challenges that can be handled with positive results. In such a case, others might also view their own experiences as beneficial and worthwhile (Bartone, 2006). These positive and constructive interpretations of demanding situations (Kobasa, 1979) can, in turn, enhance group cohesion by increasing group commitment (Piper, Marrache, Lacroix, Richardsen & Jones, 1983).

## LIMITATIONS AND CONCLUSION

There are some limitations to this study. First, there might have been some concern among respondents about the possible negative implications of reporting mental health complaints and scoring low on hardiness. Specifically, the hardiness measure could have a limitation related to social desirability. The personality style of hardiness may resemble the soldiers' role expectations about serving in the military, and a belief that a high hardy personality is necessary in a military culture. Second, our cohesion measure was based on individual evaluations that were not aggregated across individuals in the same unit. It has been hypothesized that the effects of cohesion should only be assessed at group level (Oliver *et al.*, 1999; Siebold, 1999). However, individual-level effects should also be considered as potentially important (Piper *et al.*, 1983). Based on individual responses, studies have shown meaningful effects of cohesion at the individual level (Griffith, 1997; Vaitkus & Griffith, 1990). Third, our sample consisted exclusively of military personnel from the

Norwegian Armed Forces, which means that our results cannot necessarily be generalized to other military units.

The main strength of the present study was its prospective design, which made it possible to adjust for prior mental health. Some studies have controlled for baseline psychological symptoms, but, to our knowledge, none of them have demonstrated how baseline symptoms specifically impact the interaction between hardiness and cohesion. Hystad *et al.* (2011) have shown that hardiness predicts admission to military officer schools. The results from our study highlight the importance of the personality style of hardiness as a selection criteria and its relevance to military training. Nevertheless, our study also points to the importance of building and maintaining cohesion in military units. In conclusion, our study suggests that it is crucial to control for baseline mental health in order to establish how hardiness and cohesion interact to influence mental health complaints. For high hardy individuals, cohesion levels did not significantly influence levels of mental health complaints.

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