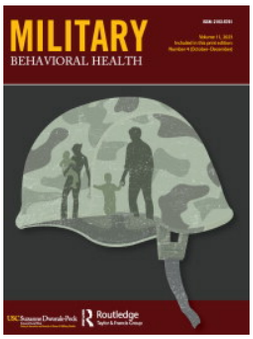

Military Behavioral Health

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/umbh20

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To cite this article: Carlos Sirkiä, Heli Koivumaa-Honkanen, Kai Parkkola & Tuula Hurtig (18 Apr 2024): Resilient Coping and the Psychometric Properties of the Brief Resilient Coping Scale (BRCS) Among Healthy Young Men at Military Call-up, Military Behavioral Health, DOI: 10.1080/21635781.2024.2342257

To link to this article: https://doi.org/10.1080/21635781.2024.2342257

MILITARY BEHAVIORAL HEALTH
https://doi.org/10.1080/21635781.2024.2342257

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RESEARCH ARTICLE

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Resilient Coping and the Psychometric Properties of the Brief Resilient Coping Scale (BRCS) Among Healthy Young Men at Military Call-up

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ABSTRACT

A self-report four-item Brief Resilient Coping Scale (BRCS) measures tendencies to cope with stress in a highly adaptive manner. We investigated the level of resilient coping and the psychometric properties of the BRCS among young men participating military call-up. The study sample consisted of a one-year military call-up sample ($N=2184$) in the Northern Finland. Most of the participants were at the age of 17–18 years. They completed a study questionnaire including the BRCS and other psychosocial scales during the military call-up. The construct validity of the BRCS was assessed with exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Convergent and discriminant validity were assessed by relating resilient coping with self-reports of dispositional optimism (LOT-R), sense of coherence (SOC-13), perceived stress (PSS-10), general anxiety (GAD-7), and depression (R-BDI). The mean BRCS total score of the participants indicated good resilient coping and was related to specific sociodemographic factors, such as education, relationship status and family structure. The internal consistency of the BRCS was good. EFA and CFA showed that one-factor solution fitted to the data best. BRCS correlated positively with dispositional optimism and sense of coherence, and negatively with perceived stress, general anxiety, and depression. BRCS appears to be psychometrically adequate tool in assessing healthy young men's resilient coping before commencing their compulsory conscript service. The evaluation of resilient coping prior to military service is important to military forces.

KEYWORDS

BRCS; resilience; coping; military; conscript

Introduction

Military service and military training require ability to adapt changing situations and to cope with various types of stressors. Psychological resilience and resilient coping are different concepts, but both describe these characteristics. Resilience refers to positive adaptation, whereas resilient coping refers to a tendency to effectively use cognitive appraisal skills in a flexible, committed approach to active problem solving despite stressful circumstances (Sinclair & Wallston, 2004). Further, coping strategies can be either positive (e.g. direct problem solving) or negative (e.g. avoidance or substance abuse) (Rice & Liu, 2016).

Resilient coping is derived from the classification presented by Polk (1997) who describes resilience as a characteristic approach to situations or stressors manifested as cognitive skills, problem-solving ability, and to other attributes that indicate a capacity for action when facing a differing situation. Sinclair and Wallston (2004) supplement that this situational pattern also incorporates realistic goal-setting skills, an ability to assess the consequences of actions, and active problem-solving behavior which is enhanced by flexibility, perseverance, and resourcefulness. Thus, people with resilient coping can be expected to be goal directed, believe in their ability to address adverse situations, and usually succeed in their selected challenges (Sinclair & Wallston, 2004).

The practical relevance in measuring resilience and resilient coping could be the potential ability to help identify people with high ability to adapt and maintain psychological functioning under stressful circumstances (van der Meulen et al., 2020). These instruments include self-report measures such as,

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Connor–Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003), Resilience Scale (RS; Wagnild & Young, 1993), Brief Resilient Coping Scale (BRCS; Sinclair & Wallston, 2004) and Brief Resiliency Scale (BRS; Smith et al., 2008). However, only one instrument, BRCS, is designed to capture the resilient coping, as specified above. BRCS was developed in the need of efficient, yet brief (consisting of only four items), instrument to measure the construct of resilient coping (Sinclair & Wallston, 2004). From the perspective of military forces, these qualities are important to identify those suitable for certain tasks in military service or even to screen those unsuitable for military service (e.g. Multimäki et al., 2008).

Previous studies on resilient coping and BRCS have focused on the somewhat overlapping concepts of resilience and coping as well as on the scale validation in various populations. Therefore, more detailed research is needed. The psychometric properties of the BRCS appear to be promising tool, since most studies have successfully validated the scale (Kocalevent et al., 2017; Limonero et al., 2014; Moret-Tatay et al., 2015; Sinclair & Wallston, 2004; Tomás et al., 2012). Conceptually resilient coping has been related to other psychological coping strategies, or as in some cases also to the lack of psychopathology. For example, Tomás et al. (2012) have reported that resilient coping was associated with active coping strategies, such as, problem-solving coping, negative auto-focused coping, positive reappraisal, and social support seeking among the population of elderly people. Limonero et al. (2014) have reported that among undergraduate psychology students resilient coping correlated positively with personal perceived competence, life satisfaction, optimism, positive affect, and four adaptive coping strategies: problem solving, cognitive restructuring, seeking social support and problems avoidance. Resilient coping had negative correlations with depression, anxiety, and negative affect. In an earlier study, undergraduate psychology students with high levels resilient coping had higher levels of emotional intelligence (subscale of emotional repair) and life satisfaction (Limonero et al., 2012). In a sample of elderly, resilient coping is associated with several coping strategies, most strongly with coping styles such as planning and positive reframing (Moret-Tatay et al., 2015). While the associations between resilient coping and coping strategies are evident, one should bear in mind, however, that resilient coping does not refer to a specific coping style itself, but rather to "a dynamic process encompassing positive adaptation within the context of significant adversity" (Luthar et al., 2000).

Resilient coping and BRCS research in military populations and settings has not been done. Much of the previous military related literature concern resilience in broader terms or studies related to other instruments, such as CD-RISC (e.g. Bezdjian et al., 2017; Green et al., 2014; Xie et al., 2016). In addition, a number of resilience studies in military context address postwar or post-deployment related traumas of psychological (e.g. Kidd et al., 2019) or physical (e.g. Armstrong et al., 2018; Herrera-Moreno et al., 2018; Reid et al., 2018) nature. The less of the existing literature is focused at resilient and/or coping skills prior to military service or special force training (e.g. Ledford et al., 2020).

One potential use of the concept and measure of resilient coping is prior to military service. This concerns especially military forces in which the service is compulsory, such as in Finland. To assess the military fitness prior to military service in Finland, military call-up system has been set out. Military call-up implies that every Finnish male citizen has a public health care medical examination during the spring of the year they turn 18 years old, and the medical examination is followed by joint military call-up session between August and December the same year. The military call-up is organized by the Finnish Defense Forces. The purpose of the medical examination at public health care is to get a preliminary assessment of their general health as well as suitability and fitness for military service. The aim of the military call-up is to give information of the military training, branches and service as well as to confirm the suitability for service. The military call-up is similar to all conscripts regardless of the military branch or training premeditated. The description of the Finnish military call-up system is presented also in Multimäki et al. (2005) and Kronström et al. (2021).

Aims of this study

The aim of this study was to investigate the level of resilient coping and the psychometric properties of the Brief Resilient Coping Scale (BRCS) among young men participating military call-up and attending military service in Finland. The focus of interest was to find out, whether BRCS proves to be adequate instrument in assessing the level of resilient coping among healthy young men attending compulsory conscript service. Reliability (internal consistency) and validity (convergent and discriminant validity), as well as the structure of the scale (exploratory and confirmatory factor analyses) were examined. By acquiring and evaluating the knowledge of BRCS in the present

study, we create base for further research on monitoring changes in resilient coping during the military service and in life of young men.

Subjects and methods

This study is part of the Young Men in the North study (YMN), which consisted of a conscription cohort in 2014 from the Northern Finland. YMN focuses on somatic and mental health as well as social factors relating to military fitness and coping in military service. It also investigates protective factors that may enhance subjective wellbeing and/or reduce the risk for marginalization. The study received a statement from the Ethical Committee of the Northern Ostrobothnia Hospital District. Research permit (AK8233, 23.4.2014; AN11380, 20.6.2017) was gained from the Defence Command Finland (AQ24309, 1073/12.04.01/2020). The participants signed a written informed consent.

The Finnish Defence Forces

The Finnish Defence Forces is based on universal male conscription and consist of three military branches: the Finnish Army, the Finnish Navy and the Finnish Air Force. Military training is provided annually for approximately 22,000 conscripts (i.e., about 70% of the male year class). Depending on the given training, Finnish military service takes 165 days (trained for rank-and-file tasks), 255 days (being in unarmed service, or trained for tasks requiring special competence) or 347 days (reserve or noncommissioned officers or those trained for most demanding special tasks). Approximately 43% of conscripts serve for 347 days, 14% for 255 days, and 43% for 165 days. Conscripts are selected for given training programs based on the needs of the military. The selections account for the conscripts' willingness and suitability, as well as the results of instructor and peer evaluations. Approximately 70% of Finnish males complete their military service.

Study sample

The study population consisted of a one-year military call-up population from the Northern Finland (i.e., from provinces of Northern Ostrobothnia and Lapland) in 2014. The data collection started in August 2014 and ended in December 2014 following the timetable of call-up sessions in the study area. The call-up population includes all the young men who have turned, or were turning, 18 years of age at that time. In addition, it includes a few men who had not participated the call-up during the year they turned 18 and were, therefore, assigned to participate later. During the military call-up, participants responded voluntarily the study questionnaire including several items on health and psychosocial factors as well as psychometric scales. The amount of all participants at call-up who responded the study questionnaire was 2614 young men.

Military fitness evaluation (i.e., physical/psychological fitness and suitability for military service) was done prior to the military call-up by a medical doctor (i.e., general practitioner) in a public health care or in a student care unit. To be included in this study, young men had to be evaluated as physically and psychologically healthy and able to attend military service. Young men who were evaluated as not being healthy and not able to attend military service, and since released in military service (e.g., due to a physical injury or other physical or psychological deficits), were excluded from the study ($n=369$). In addition, in 61 cases the data from the study questionnaire was fully incomplete. Altogether 2184 young men were included in the final analyses.

Measures

Sociodemographic information provided by the participants included age, native language, education, relationship status, family structure, and living with parents (Table 1). Age was measured with the year of birth, and we also calculated mean age of the subjects. Native language was inquired to determine Finnish origin. Finnish people are of high genetic homogeneity and white Caucasians from Fenno-Ugric origin. Education of the participant was classified as (1) no high school (HS) diploma, (2) completed or

Table 1. Characteristics of the Study Population ($N=2184$).

Year of birth[a]	1996	98.2%
	1995 or earlier	1.7%
Native language	Finnish	98.6%
	Other	1.4%
Education[b]	No HS diploma	9.6%
	HS diploma, vocational school	47.3%
	HS diploma, high school	43.1%
Relationship status	In a relationship	28.1%
	Not in a relationship	71.9%
Family structure	Parents living together	73.3%
	Parents not living together[c]	26.7%
Currently living with parents	Yes	81.1%
	No	18.9%

[a]The mean age was 18.1 years (SD = 0.4).
[b]Completed or ongoing education, HS: high school.
[c]Parents are divorced or have never been living together.

ongoing studies for HS diploma in practical education (vocational school), and (3) completed or ongoing studies for HS diploma in academic education (high school). None of the subjects had already received a college degree. Relationship status was classified into (1) those being in a relationship (dating or co-habiting) and (2) those not being in a relationship. Structure for family of origin was classified into (1) parents living together or (2) parents not living together (divorced or reconstructed families, single-parent families). Current living situation was classified into (1) participants living with his parents or (2) participants not living with his parents (living in own household, living with someone else). The characteristics of the study population is presented in Table 1.

The psychometric scales included in this study were well established self-report measures. The measures were selected based on their good psychometric data reported widely in scientific literature, including proper validity and reliability of each measure. In addition, previous studies have validated the scales in representative large Finnish samples (Bernabé et al., 2009; Feldt et al., 2007; Heinonen et al., 2006; Kaltiala-Heino et al., 1999; Korkeila et al., 2004; Tiirikainen et al., 2018; Timonen et al., 2007). However, as the resilient coping scale was our focus of interest, this measure still has limited empirical evidence.

Brief Resilient Coping Scale (BRCS)

Brief Resilient Coping Scale (BRCS) is a 4-item measure designed to capture tendencies to cope with stress in a highly adaptive manner (Sinclair & Wallston, 2004). The items were as follows: (1) "I look for creative ways to alter difficult situations"; (2) "Regardless of what happens to me, I believe I can control my reaction to it"; (3) "I believe I can grow in positive ways by dealing with difficult situations"; (4) "I actively look for ways to replace the losses I encounter in life". Each item is scored on a 5-point Likert scale from 1 to 5. The total score is summed from the individual item scores, and ranges from 4 to 20, higher score indicating more resilient coping. Low resilient coping is considered when total scores are lower than 13, whereas total scores above 17 are considered as high resilient coping (Sinclair & Wallston, 2004).

Life Orientation Test – Revised (LOT-R)

Life Orientation Test—Revised (LOT-R) is a 10-item scale measuring dispositional optimism, defined in terms of generalized outcome expectancies (Scheier et al., 1994; Scheier & Carver, 1985). Each item is scored on a 5-point Likert scale from 0 to 4. Of the ten items, only 6 items are included in the scoring, 4 items being "filler items". The total score is summed from the individual item scores, and ranges from 0 to 24. No specific cutoff points to represent low vs. high level of dispositional optimism have been described. The Cronbach's alpha for LOT-R in our study sample was 0.76.

Sense of Coherence Scale (SOC-13)

The Sense of Coherence Scale (SOC-13) with its 13-items measures sense of coherence defined with three domains: comprehensibility (5 items), manageability (4 items), and meaningfulness (4 items) (Antonovsky, 1993). Each item is scored on a 7-point Likert scale from 1 to 7. A high score expresses a strong sense of coherence, and a low score expresses a weak sense of coherence. The total score is summed from the individual item scores, and ranges from 13 to 91. As in the case of LOT-R, no specific cutoff points to represent low vs. high level of sense of coherence have been set. The Cronbach's alpha for SOC-13 in our study sample was 0.85.

Raitasalo's modification of the Beck Inventory for Depression (R-BDI)

The Raitasalo's modification of the Beck Inventory for Depression (R-BDI) is a Finnish modification of the Beck Depression Inventory (Kaltiala-Heino et al., 1999). R-BDI comprises 13 statements measuring increasing intensity of depressive emotions and cognitions. Each item is scored from 0 to 3 according to the severity of the symptom. The total score is summed from the individual item scores, and ranges from 0 to 39 scores. The total score is dichotomized according to the cutoff point of 8 points suggested in the literature. The intensity of depressive emotions and cognitions is classified into mild (5–7 points), moderate (8–15 points), and severe (≥16 points) depression (Kaltiala-Heino et al., 1999). The Cronbach's alpha for R-BDI in our study sample was 0.71.

General Anxiety Disorder scale (GAD-7)

General Anxiety Disorder scale (GAD-7) is a brief 7-item self-report questionnaire for assessing generalized anxiety (Spitzer et al., 2006). Each item is scored on a 4-point Likert scale from 0 to 3. The total score is summed from the individual item scores, and ranges from 0 to 21 points, higher score indicating more general anxiety symptoms. A total score of

10 or greater represents a cut point for clinically significant anxiety. Moreover, based on total scores, the level of symptoms can be interpreted as mild (5–9 points), moderate (10–14 points), or severe ((≥15 points) (Spitzer et al., 2006). The Cronbach's alpha for GAD-7 in our study sample was 0.86.

Perceived Stress Scale (PSS-10)

Perceived Stress Scale (PSS-10) is a 10-item self-report questionnaire for assessing the degree to which situations in one's life are appraised as stressful (Cohen et al., 1983). Each item is scored on a 5-point Likert scale from 0 to 4. The total score is summed from the individual item scores, and ranges from 0 to 40 points, higher score indicating more psychological stress. There are no specific cutoff points to represent low vs. high level of perceived stress. The Cronbach's alpha for PSS-10 in our study sample was 0.82.

Statistical analyses

All statistical analyses (except from CFA) were carried out using IBM SPSS Statistics software version 25. To investigate differences in BRCS total score based on sociodemographic characteristics (i.e., education, relationship status etc.) independent *t*-tests analyses were performed. Since clear majority (over 98%) of the participants were born in 1996 and had Finnish as their native language, year of birth and native language were not included in the sociodemographic analyses.

The psychometric properties of the BRCS were based on several analyses. Internal consistency was measured with Cronbach's alpha and McDonald's omega values. Also, composite reliability (CR) was calculated to measure the internal consistency of the BRCS items. Pearson correlation (*r*) was used to measure item correlations. Convergent validity of the BRCS was assessed by correlating resilient coping with other psychological constructs related to resilience: dispositional optimism (LOT-R) and sense of coherence (SOC-13). Discriminant validity of the BRCS was established by correlating resilient coping with perceived stress (PSS-10), general anxiety (GAD-7) and depression (R-BDI). The construct validity of the scale was evaluated using exploratory factor analysis (EFA): the Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) test were performed. Bartlett's test of sphericity values $p < 0.05$ and KMO values close to 1.0 indicate that a factor analysis is useful in the sample. The construct validity of the scale was further investigated using structural equation modeling (SEM), i.e. confirmatory factor analysis (CFA), which was conducted using Mplus 8.4 software (Muthén & Muthén, 1998–2017). Regarding the CFA, goodness of fit of the model was evaluated using chi-square goodness of fit test (χ^2-test) as well as well-established model fit criteria: Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR). Acceptable model fit is achieved when χ^2-test results non-significant value, CFI/TFI values are above 0.90 – 0.95, RMSEA value is below 0.06 and SRMR value is below 0.08 (Brown, 2015; Hu & Bentler, 1999; Little, 2013). The variation of items explained was evaluated calculating the average variance extracted (AVE) in which value at least 0.50 is considered as adequate convergent (Fornell & Larcker, 1981).

Missing data

Any incomplete answers (i.e., missing data) in the self-report measures of LOT-R, SOC-13, R-BDI, GAD-7 and PSS-10 were replaced by the mean score of the particular measure. If there were incomplete answers in the sociodemographic information (education, relationship status etc.), these were addressed as missing information.

Missing item-level data regarding BRCS measure was replaced by the mean score of the particular item. This concerned BRCS total scores only (i.e., when comparing sociodemographic characteristics and measure correlations in relation to BRCS scores). When modeling the structure of the BRCS (i.e., confirmatory factor analyses), data was used without any mean replacements in missing values. This was done because FIML estimation of SEM analyses using Mplus software allows optimal missing data handling without single imputations of the missing values. All CFA models were estimated using the full information maximum likelihood estimation method with robust standard errors (MLR). This was chosen due to the Likert-scale measure (BCRS) and large study sample. In addition, MLR can effectively handle missing at random data and departures from normality.

Regarding the missing data of the BRCS measure, there were 62 cases in which one answer, six cases in which two answers, and four cases in which three answers were missing. In 61 cases, all four answers from BRCS were missing. Altogether, there were missing BRCS answers in 133 (6.1%) cases. Regarding the missing data in the other self-report measures, there were missing LOT-R answers in 90 (4.1%) cases, missing SOC-13 answers in 117 (5.4%) cases, missing

R-BDI answers in 49 (2.2%) cases, missing GAD-7 answers in 44 (2.0%) cases, and missing PSS-10 answers in 102 (4.7%) cases.

Results

The mean total score of BRCS among all participants was 14.98 (SD = 2.45). The level of resilient coping varied significantly depending on the sociodemographic characteristics. Young men aiming for HS diploma in high school had higher BRCS total score ($M = 15.24$, SD = 2.33) than young men aiming for HS diploma in vocational school ($M = 14.79$, SD = 2.55) ($t(1966)=4.06$, $p < 0.001$, 95% CI, 0.23–0.66) and young men without HS diploma ($M = 14.81$, SD = 2.42) ($t(1146)=2.37$, $p < 0.05$, 95% CI, 0.07–0.78). Among young men aiming for HS diploma in vocational school and young men without HS diploma no significant differences in the BRCS total score were found. Young men in a relationship had higher BRCS total score ($M = 15.27$, SD = 2.43) than young men not in a relationship ($M = 14.87$, SD = 2.44) ($t(2171)=3.39$, $p < 0.001$, 95% CI, 0.17–0.62). Young men whose parents were living together had higher BRCS total score ($M = 15.07$, SD = 2.40) than young men whose parents were not living together ($M = 14.73$, SD = 2.54) ($t(2151)=2.88$, $p < 0.01$, 95% CI, 0.11–0.58). Finally, young men who were living with their parent/parents had higher BRCS total score ($M = 15.05$, SD = 2.41) than young men who were not living with their parent/parents ($M = 14.67$, SD = 2.59) ($t(2167)=2.79$, $p < 0.01$, 95% CI, 0.11–0.64).

Internal consistency

Cronbach's alpha for the BRCS was 0.79 and McDonald's omega was 0.79, which both indicated a good internal consistency of the measure. The composite reliability (CR) was 0.801 which also indicated a good internal consistency (CR ≥0.70). Means and standard deviations for individual items, item homogeneity, Cronbach's alphas and McDonald's omegas if the specific item was deleted, and inter-item correlations among all participants are presented in Table 2.

Item correlations

The Pearson correlation between the four items of the BRCS is presented in the Table 2 with range from 0.45 (between item 1 and 2) to 0.55 (between items 3 and 4). All item correlations were significant at $p < 0.01$ level.

Exploratory Factor Analysis (EFA)

The Bartlett's test of sphericity was $p < 0.001$ with a value of chi-square 2410.92 ($df = 6$). The sample index value of Kaiser-Meyer-Olkin (KMO) was 0.78 indicating that the sampling is adequate. Based on EFA eigenvalues and scree plot figure (not shown), one-factor solution was supported best. The factor loadings from the exploratory factor solution were: 0.77 for item 1, 0.75 for item 2, 0.83 for 3 and 0.77 for item 4. One factor explained 61.6% of the variance whereas two factors explained 76.6% and three factors 89.8% cumulatively.

Confirmatory Factor Analysis (CFA)

In respect of one-factor solution, chi-square goodness of fit test resulted a significant level: $\chi^2 = 18.429$, $p < 0.001$ ($df = 2$) and model fit statistics were as follows: CFI = 0.991, TLI = 0.973, RMSEA = 0.057 and SRMR = 0.015. All these model fit statistics represented acceptable fit to the one-factor model. The model fit statistics of the one-factor and two-factor model are presented in Table 3. Since factors in the CFA models must have at least two items loaded, no three-factor model fit statistics were computed.

Table 2. Psychometric Properties of Brief Resilient Coping Scale (BRCS).

Item	Item wording	M	SD	Cronbach's alpha if item deleted	McDonald's omega if item deleted	Inter-item correlations		
						Item 1	Item 2	Item 3
1	"I look for creative ways to alter difficult situations."	3.68	0.82	0.737	0.746	–		
2	"Regardless of what happens to me, I believe I can control my reaction to it."	3.89	0.80	0.753	0.757	0.446**	–	
3	"I believe I can grow in positive ways by dealing with difficult situations."	3.82	0.72	0.700	0.708	0.504**	0.527**	–
4	"I actively look for ways to replace the losses I encounter in life."	3.59	0.80	0.741	0.744	0.474**	0.392**	0.546**

M: mean; SD: standard deviation; **Pearson correlation $p < 0.01$.

Table 3. The Confirmatory Factor Analysis (CFA) Model Fit Statistics for the One- and Two-Factor Model of the BRCS Measure.

	χ^2	*df*	RMSEA	CFI	TLI	SRMR
One-factor model	18.429***	2	*0.057*	*0.991*	*0.973*	*0.015*
Two-factor model[a]	13.747***	1	0.071	*0.993*	*0.958*	*0.013*

***$p < 0.001$; RMSEA: root mean square error of approximation; CFI: comparative fit index; TLI: Tucker Lewis Index; SRMR: standardized root mean square residual.
[a]The structure of the two-factor model is based on factor loadings in exploratory factor analysis.
Acceptable model fit indices are presented in *cursive*.

The standardized factor loadings in the CFA one-factor model were: 0.66 for item 1, 0.66 for item 2, 0.81 for item 3, and 0.70 for item 4. The average variance extracted (AVE) was 0.504, which met the criteria for adequate convergent (≥0.50), meaning that on average 50% of the variations in BRCS is explained by the four items.

Convergent and discriminant validity

BRCS total score correlated positively (convergent validity) with LOT-R total score ($r = 0.507$) and SOC-13 total score ($r = 0.405$), and negatively (discriminant validity) with PSS-10 total score ($r = -0.461$), R-BDI total score ($r = -0.251$) and GAD-7 total score ($r = -0.218$). All these correlations were statistically significant at $p < 0.001$ level.

Discussion

The present study investigated the Brief Resilient Coping Scale (BRCS) and its psychometric properties among healthy young men participating military call-up before commencing their compulsory military service in Finland. First, our study showed that resilient coping was at good level BRCS total mean score being 14.98 (SD = 2.45) in young Finnish men evaluated to be fit and suitable for military service. Better educational and social situation (including good relationship and intact family) were associated with high resilient coping. Secondly, BRCS appeared to be psychometrically adequate tool. As expected, resilient coping seemed to be convergent to dispositional optimism and sense of coherence, but discriminant from perceived stress, anxiety and depression. To the best of our knowledge, this was the first study in which the BRCS is investigated in a military context and among conscript population.

Since this was the first study to focus on BRCS in military context and setting, no comparisons between BRCS scores in military population could be made. However, in relation to general population our remarks are as follows. Kocalevent et al. (2017) have reported that the mean total score of BRCS in German male adolescents and young men in the age group of 14–24 years was 14.9 (SD = 3.3). This is nearly similar to our mean for a selected sample of young Finnish men. Fung (2020) has reported that among 511 twenty-year-old Chinese undergraduate students (85.5% being women) the mean total score was 13.29 (SD = 2.19). Considering the theoretical description by Sinclair and Wallston (2004), it seems that the level of resilient coping among young men reach in average at least in good level (i.e., BRCS total score >13).

The examination of individual item scores reveals similar notions. Limonero et al. (2014) have reported the means scores for individual items of BRCS among 362 Spanish psychology undergraduates (75 males and 287 females). The mean scores were 3.50 (SD = 0.93) for item 1 (i.e., "I look for creative ways to alter difficult situations."), 3.53 (SD = 0.92) for item 2 (i.e., "Regardless of what happens to me, I believe I can control my reaction to it."), 4.07 (SD = 0.85) for item 3 (i.e., "I believe I can grow in positive ways by dealing with difficult situations."), and 3.80 (SD = 0.93) for item 4 (i.e., "I actively look for ways to replace the losses I encounter in life."). The respective figures for items in our study were 3.68 (SD = 0.82), 3.89 (SD = 0.80), 3.82 (SD = 0.72) and 3.59 (SD = 0.80). A tentative thought could be that Spanish psychological undergraduates assessed their ability alter difficult situation and self-control less positively, but their ability of grow by dealing difficult situation and their activity to look for ways to replace losses were more positively than Finnish young men at military call-up.

Concerning the psychometric properties of the BRCS, our results are consistent with previous psychometric reports (Fung, 2020; Limonero et al., 2014; Moret-Tatay et al., 2015; Tomás et al., 2012). In our study sample, the internal consistency of the BRCS was good Cronbach's alpha coefficient value being 0.79 and McDonald's omega value being 0.79. The result is much similar with previous reports. During the original scale development, Sinclair and Wallston (2004) report Cronbach's alphas of 0.64 to 0.76 depending on the study group and the measurement point. Tomás et al. (2012) have reported Cronbach's alpha of 0.83, Limonero et al. (2014) of 0.67, Moret-Tatay et al. (2015) of 0.86, Kocalevent et al. (2017) of 0.78 and Fung (2020) of 0.59. Except from the study among Chinese university students (Fung, 2020), BRCS has shown good or acceptable internal consistency. Thus, our study adds the empirical evidence of the internal consistency of the BRCS also

in Finnish conscript population. Also, our study gives information on composite reliability (CR) and average variance extracted (AVE) calculations as well. Following Hair et al. (2009) multiple criteria, we can conclude that there is enough evidence for construct reliability of the BRCS measure.

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) in our study showed that one-factor solution fitted to the data best and was superior to a theoretical two-factor model based on the factor loadings of exploratory factor analysis. Although the chi-square goodness of fit test resulted a significant level, it should be noted that the χ^2-test is known to be highly sensitive in large study samples (Babyak & Green, 2010). Therefore, this should not be considered as ground for rejecting the model. Instead, model fit indices and criteria become more salient. Selected model fit criteria (CFI, TLI, RMSEA, SRMR) were all acceptable confirming the unidimensional structure of the BRCS. The scale seems to consist of a single latent factor (i.e., resilient coping). Based on standardized factor loadings in the unidimensional model, the item 3 (i.e., "I believe I can grow in positive ways by dealing with difficult situations.") extracted most sufficiently the latent factor.

Lastly, we found that among 18–17-year-old men participating military call-up, resilient coping was associated positively with sense of coherence and optimism and negatively with perceived stress, depression, and general anxiety. Limonero et al. (2014) have reported that in the study sample of 18–22-year-old Spanish undergraduate students, BRCS correlated positively with personal perceived competence, life satisfaction, optimism, positive affect and four adaptive coping strategies (problem solving, cognitive restructuring, seeking social support, problem avoidance) as well as negatively with depression, anxiety, and negative affect.

This study adds the important knowledge of resilient coping in the military context and prior to military service. Regarding young men entering the military services and military training, it is important to screen their coping abilities to various types of stressors. The subject of matter is relevant to military practitioners and policymakers, as well. In this study, we have made a ground for utilizing the use of short, valid, and informative resilient coping measure in military forces.

Strengths and limitations

The strength of our study is the large and representative study sample of healthy young men who are fit for and commanded to conscript service. The military call-ups are mandatory in Finland, reaching the entire regional young men's age class all over the country. The somatic and mental health evaluation and suitability to military service was based on the evaluation of a general practitioner of their own civilian health center or student health care unit. The self-report scales used in this study have well established psychometric properties and can be considered as valid and reliable instruments of dispositional optimism, sense of coherence, depression, general anxiety and perceived stress.

There are also limitations that should be taken considered. First, the study sample consisted of young men who had been evaluated as fit and healthy by a physician prior to military call-up, but not those who had been evaluated as not fit and not suitable for military service. This may become problematic especially when examining the construct validity of the resilient coping scale. Discriminant validity may seem weak since the study sample consisted of physically and mentally at least considerable healthy men: depression (R-BDI), anxiety (GAD-7) and stress rates (PSS-10), as well as their correlations with resilient coping scale, should not be expected as very high in the sample. This was also grounds for our decision not to further estimate the relationships between the BRCS and the other variables (especially discriminant validity) using structural equation modeling, nonetheless SEM represents more current and contemporary approach than correlation coefficients. Second, our study design was cross-sectional, which does not allow drawing any causal conclusions of the subject. We had no opportunity to follow the participants during the military service time per se. Additionally, resilient coping was evaluated with self-report measures only and this was done in one time period solely (i.e., military call-up). As the measures dealt with perceived mental health and subjective attitudes, one cannot say straightforwardly that this is only a limitation, but it depends how these self-reports are used. In this study, we used them to reflect participants subjective well-being. However, more measurement points as well as including observer-rated measures would have added more extensive and contemporary standpoints to this study. Third, our study concerned young men only. Because of this, we were not able to study the possible effect of gender on how resilient coping is experienced and reported before entering in the military service. It should be noted that in Finland women are able to voluntarily apply for military training as well. During the call-up sessions in 2014, there were voluntary women in conscript service

approximately 2% of the total amount. Generally, the recognition of gender perspective and both men and women military conscripts and personnel is essential when investigating military behavioral health and subjective well-being in military environment. Finally, as our study sample involved only fit and suitable men who voluntarily participated the study, no comparisons between different military fitness classes (i.e., suitable vs. non-suitable) could be done. The comparison of different military fitness classes is our aim in future studies as well as to control background factor more extensively.

Conclusions

Resilient coping was at good level and related to better academic and social situation in young Finnish men found fit for military service in the call-up. BRCS appeared to be psychometrically adequate tool in assessing young men before their compulsory conscript service. Their resilient coping seemed to be convergent to dispositional optimism and sense of coherence and discriminant from perceived stress, general anxiety, and depression. However, one should be aware that findings we have presented cannot be generalized to different militaries and military systems. More studies on BRCS in different military settings and among various military populations are needed.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by Advisory Board for Defence; Finnish Defence Forces Centre for Military Medicine. Heli Koivumaa-Honkanen was supported by Päivikki and Sakari Sohlberg's Foundation (230035).

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