

Personality Attributes as Predictors of Psychological Well-Being for NCOs

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ABSTRACT. The authors examined the nature of the relationships between job-specific personality dimensions and psychological well-being for noncommissioned officers (NCOs) in the Turkish Armed Forces (TAF). A job-specific personality inventory, comprising measures of 11 personality dimensions was developed for selection purposes. The inventory was administered to a representative sample of 1,428 NCOs along with a general mental health inventory developed by the authors, which consisted of 6 dimensions of psychological well-being. Exploratory and confirmatory factor analyses suggested existence of a single factor underlying the 6 psychological well-being dimensions, Mental Health, and 2 latent factors underlying the 11 personality dimensions, Military Demeanor and Military Efficacy. The 2 personality constructs explained 91% of the variance in the Mental Health construct. A stepwise regression indicated that beta weights of the personality measures were significant except for military bearing, orderliness, and dependability. Results suggest that job-specific personality attributes were predictive of mental health. Implications of the findings for the selection of NCOs are discussed.

Key words: military, personality, personality inventory, psychological well-being

PERSONALITY ATTRIBUTES have been especially prominent among the individual difference variables that have become important in a variety of human resources management applications during the past 20 years. An important credit in this movement rightfully goes to the five-factor model of personality (Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism; Costa & McCrae, 1995; Goldberg, 1990), which stimulated a large quantity of both empirical and theoretical work on the relationships between personality variables and a number of outcome variables, performance being the most widely studied one. Recent literature suggests that personality predicts job performance and that validities of certain personality constructs, such as conscientiousness or integrity, can be generalized across situations (Barrick & Mount, 1991; Borman, Hanson, & Hedge, 1997; Hogan, Hogan, & Roberts, 1996;

Hough, Eaton, Dunnette, Kamp, & McCloy, 1990; Ones, Viswesvaran, & Schmidt, 1993; Salgado, 1997).

In a recent meta-analysis of 15 meta-analysis studies, Barrick, Mount, and Judge (2001) found that among the big five traits, conscientiousness and emotional stability were valid predictors of performance in all occupations, whereas the other three traits predicted success in specific occupations. Empirical evidence has also suggested that different facets of performance have different predictors, and that attributes that lead incumbents to do well in task performance are different from those that lead them to do well in contextual aspects of performance (McCloy, Campbell, & Cudeck, 1994; Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996).

The relationships of personality variables with outcome variables other than job performance have also received research attention. For example, Schneider's attraction–selection–attrition (ASA) model lends support for the criticality of personality in both attraction of potential candidates to an organization and the turnover process (Schneider, 1987; Schneider, Goldstein, & Smith, 1995). The model states that individuals are attracted to, selected by, and stay with organizations that suit their personality characteristics.

The Relationship Between Personality and Mental Health

The line between job-related personality attributes and psychological well-being is not always clear. According to Russell and Marrero (2000), “[personality] styles mirror the traits that, in extreme forms, are labeled disorder.” These authors almost equate personality style with psychological (or mental) health or well-being. However, we believe that although these two constructs are closely associated, at the conceptual level a distinction needs to be made between personality and the overall psychological well-being or mental health of a person. *Personality* is simply what makes people act, feel, and think differently from one another (Zuckerman, 1995). *Psychological health*, on the other hand, refers to the extent to which an individual is functioning, feeling, and thinking within the “expected” ranges. Accordingly, while most measures of mental health are aimed at discriminating between clinical and nonclinical samples (or between the so-called normal and abnormal), personality measures, which are mostly nonclinical

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cal in nature, are descriptive of an individual's patterns of feeling, thinking, and functioning in a particular domain of life (e.g., work, nonwork).

There exists empirical evidence concerning personality variables as predictors of mental health (Ball, Tennen, Poling, Kranzler, & Rounsaville, 1997; DeNeve & Cooper, 1998; Siegler & Brummett, 2000; Trull & Sher, 1994). Ball et al. reported that "normal" personality dimensions, such as agreeableness, conscientiousness, and extraversion contributed significantly to the prediction of psychopathology. For example, they found that agreeableness and conscientiousness contributed significantly to the prediction of antisocial and borderline personality disorders. Furthermore, as predicted, individuals with schizoid and avoidant personality disorders were lower in extraversion. Therefore, based on the available empirical and theoretical evidence we hypothesized that personality and psychological health, although related, are conceptually distinct, but that one should be able to predict one from the other. Moreover, we believe that a prediction of psychological well-being from job-related personality characteristics has important practical implications, the reduced cost of selection being one important implication.

A majority of the studies examining the relationship between personality and mental health have looked at the relationship between the Axis I or Axis II disorders of the American Psychiatric Association's (2000) *Diagnostic and Statistical Manual for Mental Disorders* (4th edition, revised) and the five-factor dimensions. It is believed that the power of personality attributes in predicting psychological health could be improved when job attributes or context specific attributes are used as predictors.

Personality and Psychological Health in the Military Context

Personality variables have also been considered in the selection of military personnel. Specific personality characteristics or personality profiles have been shown to be associated with desired or undesired outcomes in military settings (Bartram, 1995; Sandal, Endresen, Vaernes, & Ursin, 1999; Stevens, Hemstreet, & Gardner, 1989; Stricker & Rock, 1998; Sumer, Sumer, & Cifci, 2000; Thomas, Dickson, & Bliese, 2001). Furthermore, in addition to job-related personality variables, psychological well-being or mental health has been among the individual differences factors considered in the selection and screening of military personnel (Holden & Scholtz, 2002; Magruder, 2000). Krueger (2001) stated that compared with most civilian jobs, military jobs involve more demanding physical and psychological conditions, such as fear, sensory overload, sensory deprivation, exposure to extreme geographies and climatic temperatures, and the like. These conditions call for individuals with not only physical but also psychological stamina. According to Cigrang, Todd, and Carbone (2000), problems related to mental health play a critical role in a significant portion of the turnover or discharge within the first 6 months of enlistment in the U.S. armed forces.

Scholtz (2003) reported that personality factors, such as conscientiousness and neuroticism were significantly correlated with psychological well-being and that both personality measures and psychological well-being had a significant relationship with interpersonal and organizational deviance in Canadian forces. Along the same lines, Holden and Scholtz (2002) used the Holden Psychological Screening Inventory (HPSI) for predicting basic military training outcome for a sample of noncommissioned recruits in the Canadian forces. Results indicated that the Depression Scale of the inventory predicted training attrition, which supported the use of the inventory as a screening tool.

The purpose of the present study was to examine the nature of the relationships between personality variables and mental health within a work context. Specifically, we examined the predictive ability of job-specific personality variables concerning psychological well-being for noncommissioned officers (NCOs). Consequently, we developed two inventories, an 11-dimension measure of NCO personality and a 6-dimension measure of psychological well-being, and we tested the hypothesized relationship on a relatively large sample of NCOs in the Turkish Armed Forces (TAF). It is important to note that the term personality is not used rigidly in this study; some skill-based individual differences variables were also included under the same term.

Method

Participants

In the current study, we distributed a questionnaire package that contained the scales used in the study through the internal mailing system of the TAF to 1,500 NCOs. Of the 1,500 NCOs receiving the package, 1,428 (95.2%) returned the package with the scales completed. The respondents (mean age = 33.11, $SD = 6.85$, range = 38) were employed in the Army (483), Navy (298), Air Force (345), and Gendarmerie (302). The average tenure of the participants was 13.17 years and the standard deviation of the tenure was 6.86 years (range = 34.25). All but two of the participants were men.

Measures

The Noncommissioned Officer Personality Inventory (NCOPI). We developed the NCOPI to evaluate job-related personality attributes of the NCOs of the TAF. The NCOPI includes 11 job-related personality dimensions: military bearing, determination, dependability, orderliness, communication, conscientiousness, self-confidence, agreeableness, directing and monitoring, adaptability, and emotional stability (see Table 1 for dimension descriptions). The development process of the NCOPI is summarized here. The present study involves the analyses of the data collected at Step 3 (the norm study) of the NCOPI development.

TABLE 1. The NCOPI Dimensions and General Descriptors

NCO personality dimensions	Descriptors
1. Military bearing	respecting superiors and chain of command showing pride in being a military personnel
2. Determination	wanting to be successful having persistence
3. Dependability	being reliable and honest being reserved and keeping secrets
4. Orderliness	being organized, clean, and tidy
5. Communication	expressing oneself clearly being an active listener
6. Self-discipline	sense of responsibility planning and execution
7. Self-confidence	self-reliance believing in oneself
8. Agreeableness	being able to establish and keep relationships working with others in harmony
9. Directing and monitoring	being able to direct, coordinate, and guide subordinates
10. Adaptability	being able to adapt to changing work conditions stress tolerance
11. Emotional stability	keeping calm not experiencing sudden fluctuations in the mood states

Note. NCOPI = Noncommissioned Officer Personality Inventory.

Step 1: Identification and verification of critical NCO attributes. Through 15 focused group discussions with both noncommissioned and commissioned officers ($N = 152$) and the administration of a Critical NCO Behavior Incidents Questionnaire (Sumer, Bilgic, Sumer, Erol, & Ok (2002) to 214 NCOs, we identified 92 NCO attributes critical for performance. The identified attributes were then rated by both NCOs ($N = 978$) and commissioned officers ($N = 656$) in terms of the extent to which they discriminated successful and unsuccessful NCOs on a 6-point Likert-type scale ranging from *does not discriminate at all* (1) to *discriminates very much* (6). The analyses yielded 56 attributes relevant for the job of NCO in the TAF (Sumer et al., 2002). We subjected the 56 attributes to a further screening by subject-matter experts (i.e., personnel officers from all four forces).

These experts were asked to evaluate each attribute in terms of importance and cost of not assessing the attribute in the selection of the NCOs on two 5-point Likert-type scales. We then examined forty-six attributes surviving the examination of the subject-matter experts, and these 46 specific attributes were the framework for item development.

Step 2: Item development and pilot study. During the development of the items, we examined the relevant literatures. We formed an initial item pool tapping the dimensions identified at the previous stage. First, we examined the relevant literatures and the International Personality Item Pool (IPIP, 1999). We then carried out the item development using an iterative approach. That is, the items developed for a given attribute by individual members of the research team were brought together and examined in group meetings. In these meetings, items were either kept, revised, or eliminated from the item pool, and the remaining items were then reexamined. The resulting item pool ($N = 227$) was then content analyzed and the items were further grouped under 28 broader personality variables.

We administered the initial version of the NCOPI to a sample of 483 NCOs representing different forces. The respondents were asked to indicate the extent to which each item or statement was true of themselves on a scale ranging from *completely false* (1) to *completely true* (4). Item analyses (reliability analyses and factor analyses) resulted in major revisions in the initial version of the NCOPI in terms of both item and dimension numbers. We also developed a few new items to keep the item numbers across dimensions within an established range. The resulting version had 166 items under 17 personality dimensions.

Step 3: Norm study. We administered the revised version of the NCOPI to a sample of 1,500 NCOs, of which 1,428 returned the inventory. The purpose of this administration was twofold. First we wanted to finalize the inventory and second, we hoped to establish the norms on the final version of the NCOPI for the population of interest. In analyzing the norm data, reliability analyses were followed by a series of exploratory and confirmatory factor analyses. These analyses resulted in the final version of the NCOPI, which comprised 103 items under 11 job-related personality dimensions. The internal consistency reliabilities for the 11 NCOPI dimensions are presented in Table 2. Norms were established for the final version.

General Mental Health Inventory (GMHI). A mental health inventory, developed by the researchers as a screening tool to be used by the TAF, was used to evaluate overall psychological well-being of the respondents. This inventory was developed in response to a need expressed by the management of the organization. The GMHI was developed in two steps alongside the NCOPI.

Step 1: Item development and pilot study. First, on the basis of the data obtained from focused group discussions, The Critical NCO Behavior Inci-

dents Questionnaire (Sumer et al., 2002), and the meetings with subject-matter experts (i.e., personnel officers), we identified six dimensions of psychological well-being: psychotic tendencies, phobic tendencies, psychosomatic complaints, hostility, depression, and anxiety or obsessive–compulsive behaviors. We formed an initial item pool composed of items related to the dimensions identified. In the development of the items, we examined relevant literatures and available screening tools. Similar to the item development of the NCOPI, we developed the items of the GMHI using an iterative approach. The initial version of the GMHI to be piloted consisted of 61 items under the identified categories.

The GMHI was piloted at the same time as the NCOPI and on the same sample ($N = 438$) using the same scale format. An item analysis resulted in a major revision in the anxiety or obsessive–compulsive tendencies dimension. The items aiming to measure obsessive–compulsive tendencies had lower item-total correlations and lowered the internal consistency reliability of the dimension. A decision was made to eliminate these items and to focus more on generalized anxiety. Hence, we developed new items tapping into generalized anxiety. The resulting version had 64 items grouped under 6 psychological well-being dimensions.

Step 2: Norm study. We administered the revised version of the GMHI (along with the NCOPI) to a sample of 1,500 NCOs; 1,428 returned the inventory. Again, our purpose was to finalize the GMHI inventory and to establish the norms on the final version of the inventory for the NCOs in the TAF.

In analyzing the GMHI norm data, we followed the reliability analyses with a series of exploratory and confirmatory factor analyses. These analyses resulted in the final version of the GMHI, which is composed of 55 items under the 6 mental health dimensions. The internal consistency reliabilities for these dimensions are presented in Table 2. Norms were established for the final version.

We also sent a demographic information questionnaire to the participants, which included questions on gender, age, tenure, specialty area, force, and rank.

Procedure

The questionnaire package containing the two inventories and the demographic questions was sent to an approximate representative sample of the NCOs employed in the Army, Navy, Air Force, and Gendarmerie of the TAF through the internal mail system with a cover letter from the Chief of Command. The respondents were asked to fill out the forms and return them via the same system. The relatively high response rate obtained in the current study was thought to partially be a result of the cover letter accompanying the package, which encouraged participants to respond.

TABLE 2. Correlations Between Personality and Mental Health Dimensions and the Reliabilities

Dimension	1	2	3	4	5	6	7
1. Depression	.85						
2. Phobic tendencies	.65	.74					
3. Hostility	.58	.47	.80				
4. Psychotic tendencies	.70	.59	.54	.75			
5. Psychosomatic complaints	.62	.52	.50	.57	.83		
6. Anxiety	.81	.68	.63	.73	.70	.88	
7. Mental health ^a	.88	.77	.78	.82	.79	.92	.95
8. Military bearing	-.52	-.45	-.47	-.44	-.29	-.44	-.53
9. Determination	-.54	-.46	-.34	-.33	-.33	-.43	-.49
10. Dependability	-.43	-.36	-.40	-.47	-.22	-.37	-.46
11. Orderliness	-.29	-.17	-.19	-.27	-.15	-.22	-.26
12. Communication	-.64	-.59	-.52	-.55	-.48	-.63	-.69
13. Self-discipline	-.66	-.52	-.44	-.53	-.44	-.57	-.63
14. Agreeableness	-.57	-.52	-.61	-.52	-.38	-.54	-.64
15. Directing and monitoring	-.40	-.36	-.15	-.24	-.21	-.31	-.33
16. Adaptability	-.61	-.61	-.59	-.50	-.49	-.64	-.70
17. Self-confidence	-.77	-.59	-.47	-.59	-.52	-.69	-.73
18. Emotional stability	-.81	-.64	-.68	-.68	-.61	-.81	-.86

Note. All of the correlations are significant at .01.

^aMental health variable was computed by averaging the scores on the six mental health dimensions. Reliabilities are presented in bold at the diagonal.

Results

Correlations between the variables of the study were all significant (see Table 2), and reliabilities of both the job-specific personality dimensions and psychological health dimensions were .70 and above.

Because both personality and mental health items were presented within the same instrument using the same format to the same source of data collection (i.e., NCOs), there was a possibility that the observed correlations could be an artifact of the common method used. Hence, before testing the relationship between the personality and mental health dimensions, we performed a series of confirmatory factor analyses using LISREL 8.30 (Jöreskog & Sörbom, 1996) to test the possibility of common method variance. In these analyses, we first tested a confirmatory model in which all indicators (personality and mental health-related dimensions all together) clustering under a single latent variable were included.

8	9	10	11	12	13	14	15	16	17	18
.80										
.45	.73									
.57	.35	.71								
.30	.33	.34	.82							
.43	.51	.35	.27	.78						
.48	.64	.49	.51	.60	.81					
.53	.39	.40	.22	.55	.47	.70				
.21	.52	.15	.24	.49	.49	.27	.72			
.59	.46	.37	.19	.58	.48	.58	.31	.75		
.43	.55	.39	.28	.61	.65	.47	.45	.53	.81	
.54	.49	.45	.27	.64	.61	.64	.35	.72	.67	.83

We then compared this model against two alternative models. The first alternative model had two latent constructs, one for job-related personality variables, the other for mental health variables (i.e., personality and mental health). The second alternative model suggested three latent constructs, one for mental health variables and two for personality variables (i.e., mental health, military demeanor, and military efficacy). The two latent personality constructs in this model were identified through exploratory processes. The military demeanor latent variable included adaptability, emotional stability, military bearing, dependability, and agreeableness, whereas military efficacy included determination, self-discipline, orderliness, communication, self-confidence, directing, and monitoring.

An examination of the modification indices suggested that errors between several indicator pairs should be correlated. A majority of these pairs were conceptually related. We decided to allow the errors between dependability and military bearing, orderliness and self-discipline, determination, and directing and

monitoring, adaptability and military bearing, and emotional stability and military bearing. We then compared the single factor model against the two alternative models. The results suggested that the two-factor and three-factor alternatives had a better fit than the single-factor model, $\chi^2_{\text{change}}(1, N = 1,428) = 144.18, p < .001$, and $\chi^2_{\text{change}}(3, N = 1,428) = 651.32, p < .001$, respectively.

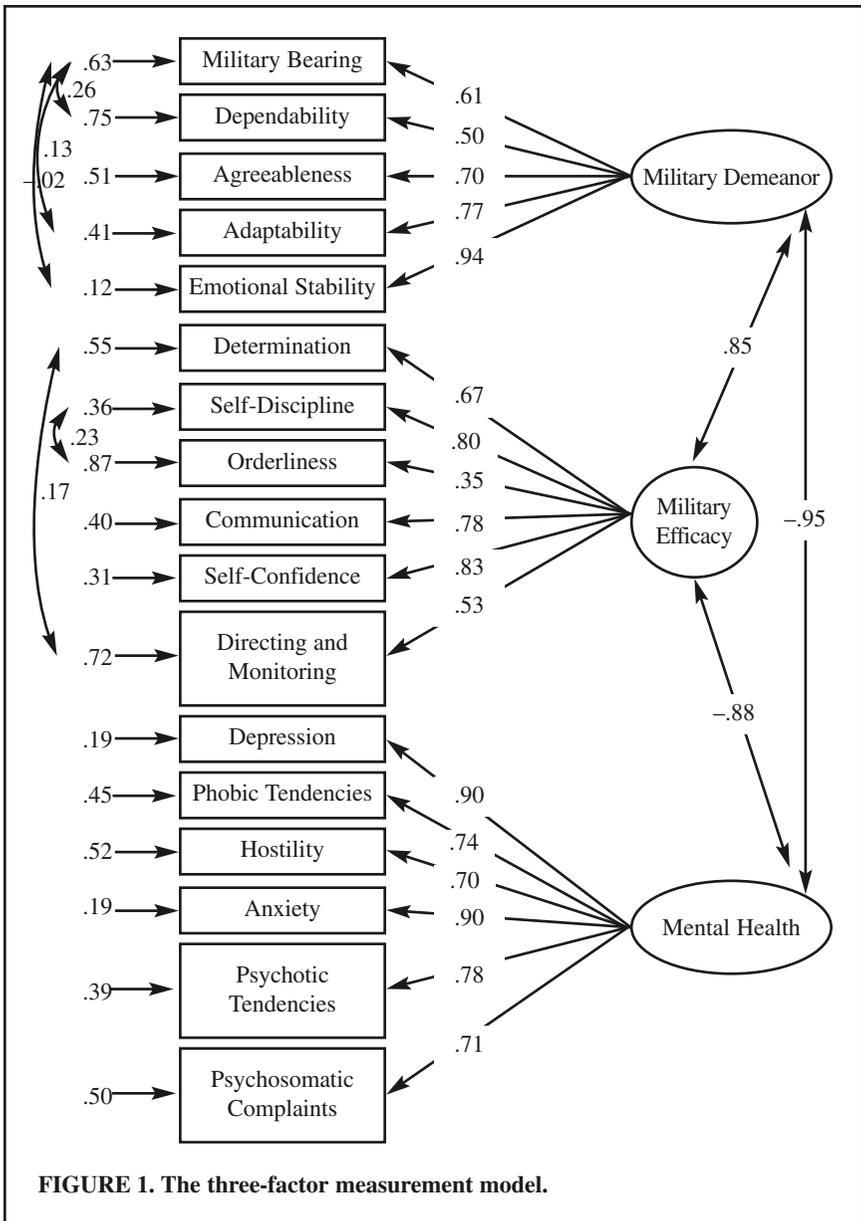
Furthermore, the results suggested that the alternative model, with two latent constructs for personality variables (i.e., the three-factor model) had a relatively better fit than the model with only one latent variable embracing personality variables (i.e., the two-factor model), $\chi^2_{\text{change}}(2, N = 1,428) = 507.14, p < .001$. Hence, we decided to conceptualize the 11 NCO personality variables measured by the NCOPI as being grouped under two latent personality constructs in the following analyses. The correlations between mental health–military demeanor, mental health–military efficacy, and military demeanor–military efficacy latent construct pairs were $-.95, -.88$, and $.85$, respectively. Figure 1 depicts the three-factor measurement model.

To examine the relationship between job-related personality variables and mental health, we tested a model in which two personality constructs with multiple indicators predicted the mental health construct with multiple indicators (see Figure 2) using LISREL 8.30 (Jöreskog & Sörbom, 1996). The results indicated that the two personality constructs explained a significant portion of the variance in the mental health factor, $R^2 = .92$, and the fit of the model was acceptable, $\chi^2(111, N = 1,428) = 1796.53, p < .00$, Goodness-of-Fit Index = $.87$, Adjusted Goodness-of-Fit Index = $.82$, Normed Fit Index = $.90$, Non-normed Fit Index = $.89$, Root Mean Square Error of Approximation = $.10$.

We performed a stepwise regression analysis to see the contribution of the individual personality variables to the prediction of the overall mental health score, which was constructed by averaging the scores on the six mental health dimensions. Results indicated that except for military bearing, dependability, and orderliness, all the personality variables contributed significantly to the variance explained in the mental health factor. The R^2 at the final step was $.81$. Emotional stability made the highest contribution in explaining the variance in mental health. Table 3 displays β , t , and standard error values resulting from the stepwise analyses.

Discussion

Our main purpose in the present study was to explore the nature of the relationships between job-specific personality attributes and psychological well-being for the NCOs in the TAF. We found that a model in which the two job-specific personality constructs, military demeanor and military efficacy, predicted mental health was acceptable. The two personality constructs explained a great amount of variance in mental health for the NCOs. Furthermore, among the two latent personality constructs, military demeanor had a stronger association with mental health.



Analyses on the individual effects of personality dimensions suggested that except for military bearing, dependability, and orderliness, the NCOPI dimensions contributed significantly to the prediction of the mental health composite. In short, consistent with the existing literature, the results supported the power of

personality attributes (both in the form of latent traits and as individual dimensions) in predicting mental health (e.g., Ball et al., 1997; DeNeve & Cooper, 1998; Siegler & Brummett, 2000; Trull & Sher, 1994).

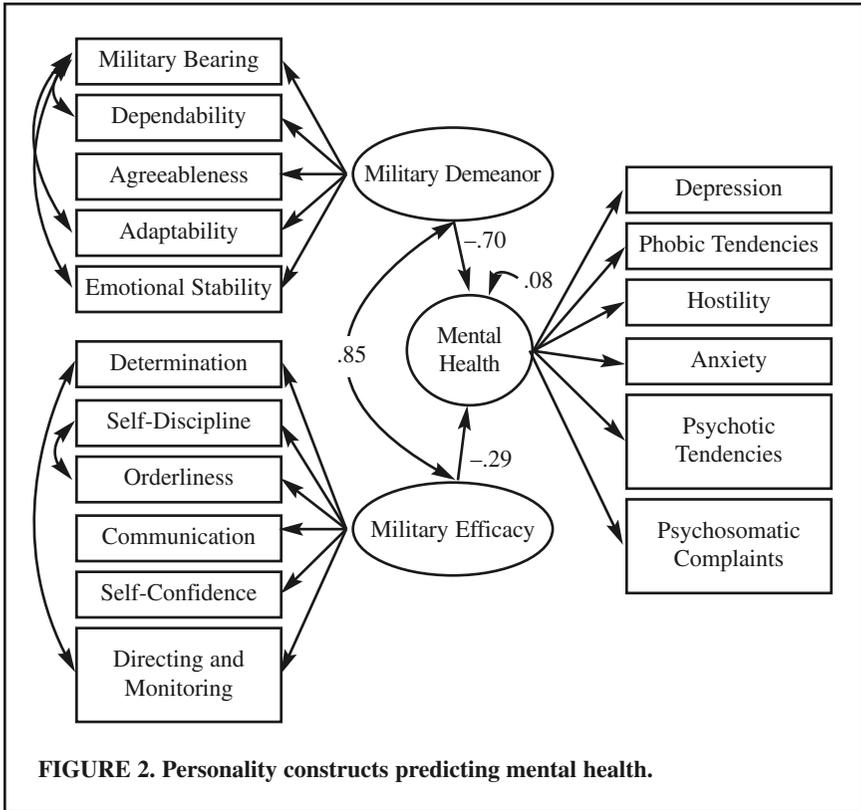


FIGURE 2. Personality constructs predicting mental health.

TABLE 3. Stepwise Regression Results for the Prediction of Mental Health

Predictor	β	t	SE
Emotional stability	-.48	-23.13	.02
Self-confidence	-.23	-12.92	.02
Communication	-.15	-8.47	.02
Adaptability	-.11	-6.13	.02
Directing and monitoring	-.09	6.21	.01
Agreeableness	-.08	-5.13	.02
Self-discipline	-.08	-4.62	.02
Determination	-.04	2.49	.02

Results suggest that the NCOPI, which was developed as a selection tool for the NCOs in the TAF, could also serve the purpose of screening for mental health. The exceptionally large variance explained in mental health by both latent and individual personality factors suggests that the more fitting the personality profile of a candidate, the more he or she is likely to be mentally fit for the job. As discussed earlier, military context calls for individuals with not only physical but also psychological stamina. This is why mental health has been among the individual difference factors considered in the selection and screening of military personnel (Holden & Scholtz, 2002; Magruder, 2000). Results of the present study imply that when job-relevant personality attributes are used in the selection process, mental health assessment may be dispensable, resulting in significant cost savings.

However, one could still argue that the strong structural correlations between the latent variables, specifically personality and mental health constructs, may have resulted from a possible conceptual overlap among these latent structures. The issue of construct overlap does indeed deal with what is actually measured by different constructs or dimensions. Some of the dimensions included under the NCOPI have either direct or indirect conceptual links to the dimensions of psychological well-being. For instance, although emotional stability and self-confidence are treated and measured as independent dimensions of personality, they are also natural correlates of psychological well-being, specifically of depression (Baumeister, 1993). Despite the possibility of conceptual overlaps among personality and mental health constructs, however, the three-factor model (i.e., two personality factors and one mental health factor) fit significantly better than the alternative single- and two-factor models, suggesting that the measured constructs were relatively independent of each other.

Along the same lines, the observed correlations among the job-specific personality dimensions were relatively high yet comparable to the correlations reported between similar personality dimensions measured by different inventories. In their review, Biesanz and West (2004), pointed out that the big five factors (as well as the scales within the factors) are not necessarily orthogonal, they tend to be moderately or substantially correlated. Furthermore, the pattern of correlations between personality measures observed in the present study are similar to those reported in the literature using military samples (Holden & Scholtz, 2002), yielding some indirect evidence for the validity of the inventory we developed.

There also exists preliminary evidence concerning the criterion-related validity of the NCOPI. In a recent study, Bilgic, Sumer, Erol, and Sumer (2005) examined the extent to which the NCOPI dimensions predicted a set of performance criteria ranking the NCOs in terms of cumulative performance ratings over their tenure and the number of commendations and reprimands that they had received over their military career. Some of the NCOPI dimensions (e.g., directing and monitoring, self-discipline, and self-confidence) contributed significantly to the variance in both cumulative performance rankings and the num-

ber of commendations received, providing some evidence concerning the predictive validity of the NCOPI. Yet, it needs to be noted that the criteria of job performance used were not direct/complete indices of current performance. Hence, studies using more direct and comprehensive indices of job performance are needed in establishing the criterion-related validity of the NCOPI.

Future researchers should also ascertain the construct validity of the NCOPI using different methods. For example, using the multitrait-multimethod approach, correlations of the NCOPI dimensions with the measures of the same dimensions from different sources (i.e., inventories) need to be examined to collect further evidence for the construct validity of this instrument.

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