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This paper presents a short, 15-item scale for measuring personality hardiness. Personality hardiness has been found to be a stress/health moderator in a wide range of studies. Still, there are problems with its measurement. The present 15-item scale has excellent psychometric properties, and has demonstrated validity with several samples including soldiers exposed to combat stressors, and Army Special Forces candidates.

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A Short Hardiness Scale

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This paper presents a short, 15-item scale for measuring personality Hardiness. Personality Hardiness has been found to be a stress/health moderator in a wide range of studies. Still, investigators who wish to include Hardiness in their research have been hampered by the lack of an accepted, standard tool for measuring it. This 15-item scale includes positively as well as negatively keyed items covering the three conceptually important Hardiness facets of Commitment, Control and Challenge. It shows excellent psychometric properties, including Cronbach's alpha coefficients ranging from .70 to .77 for the facets, to .83 for the overall scale. This scale has demonstrated appropriate criterion-related and predictive validity in several samples, with respect both to health and performance under high-stress conditions. Notably, scores on this hardiness measure are predictive of illness/symptom indicators and health behaviors in a large group (N=787) of men and women Army Reservists mobilized for the Gulf War. Also, as hardiness theory would predict, Army Special Forces candidates who score high on this measure are more likely to succeed in a rigorous and highly stressful selection course.

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The views of the author do not necessarily reflect those of the Department of the Army, or the Department of Defense (para 4-3, AR 360-5).

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A SHORT HARDINESS SCALE

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ABSTRACT

This paper presents a short, 15-item scale for measuring personality hardiness. Personality hardiness has been found to be a stress/health moderator in a wide range of studies. Still, there are problems with its measurement. The present 15-item scale has excellent psychometric properties, and has demonstrated validity with several samples including soldiers exposed to combat stressors, and Army Special Forces candidates.

INTRODUCTION

Personality Hardiness (Kobasa, 1979; Maddi & Kobasa, 1984) has proven to be a stress/health moderator in a wide range of studies. Still, investigators who wish to include Hardiness in their research have been hampered by the lack of an accepted, standard tool for measuring it (cf. Funk & Houston, 1987). Conceptually, "hardiness" is an individual differences variable that develops early in life and is reasonably stable over time, though amenable to change under certain conditions (Maddi & Kobasa, 1987). Hardy persons have a high sense of life and work commitment, greater sense of control, and are more open to change and challenges in life. They tend to interpret stressful and painful experiences as a normal part of life, which is overall interesting and worthwhile.

HISTORY

The genealogy of the present short hardiness scale leads back to the original 53-item version used by Maddi, Kobasa and students at the University of Chicago in the early 1980's, primarily with samples of Illinois Bell executives. By adding new items and eliminating poor ones, a new 50-item scale was developed for use with city bus drivers (Bartone, 1989). Additional psychometric refinement with military samples led to an improved 45-item version, and then a 30-item scale (Bartone et al, 1989; Bartone, 1991). Careful item and reliability analyses with mixed-gender military samples has resulted in a 15-item measure that displays good psychometric properties, and good evidence for the validity of the instrument as a measure of the hardiness construct.

RELIABILITY

This 15-item scale includes positively and negatively keyed items covering the three conceptually important Hardiness facets of commitment, control and challenge. In a sample of 700 Army reservists in medical units mobilized for the Gulf War, Cronbach's alpha coefficient for the total hardiness measure is .83, and for the facets, .77 (commitment), .71 (control), and .70 (control). Similar internal consistency coefficients are seen with other samples. Recent data show a 3-month test-retest reliability coefficient of .52 ($N=95$). This coefficient may be lowered as a function of quite different test conditions. The Time 1 data are from a mixed-gender military unit while deployed in Saudi Arabia; the Time 2 data were collected after the unit had returned home to Germany.

VALIDITY

This scale has demonstrated appropriate criterion-related and predictive validity in several samples, with respect both to health and performance under high-stress conditions. Notably, scores on this hardiness measure are predictive of illness/symptom indicators and health behaviors in a large group (N=787) of men and women Army Reservists mobilized for the Gulf War. Also, as hardiness theory would predict, Army Special Forces candidates who score high on this measure are more likely to succeed in a rigorous and highly stressful selection course. In a recent study of stress and health in Army medical workers deployed to Croatia, regression analyses show scores on this hardiness measure predict both depression and symptoms reports, and that hardiness interacts with stress to predict health outcomes.

TABLE 1: STEPWISE REGRESSION RESULTS,
PREDICTING DEPRESSION (Short CES-D)

<u>PREDICTOR</u>	<u>R-Square</u>	<u>BETA</u>	<u>T</u>	<u>p <</u>
Hardiness	.17	-.35	-4.3	.0001
Hardy X				
Work stress	.19	.34	4.1	.0001

Model: F=14.88, p < .0000; DF 2, 123;

Sample: N=125 US Army deployed medical workers

TABLE 2: STEPWISE REGRESSION RESULTS,
PREDICTING Symptoms Reports

<u>PREDICTOR</u>	<u>R-Square</u>	<u>BETA</u>	<u>T</u>	<u>p <</u>
Family stress	.14	.35	5.3	.0001
Hardy X				
Family stress	.24	-.13	-4.1	.0001

Model: F=20.1, p < .0000; DF 2, 123;

Sample: N=125 US Army deployed medical workers

REFERENCES

- Bartone, P.T. (1984). Stress and health in Chicago Transit Authority bus drivers. Chicago: University of Chicago, unpublished doctoral dissertation.
- Bartone, P.T. (1989). Predictors of stress-related illness in city bus drivers. J. of Occupational Medicine, 31, 657-663.
- Bartone, P.T., Ursano, R.J., Wright, K.W. & Ingraham, L.H. (1989). The impact of a military air disaster on the health of assistance workers: A prospective study. J. of Nervous and Mental Disease, 177, 317-328.
- Funk, S.C. & Houston, B.K. (1987). A critical analysis of the hardiness scale's validity and utility. J. of Personality and Social Psychology, 53, 572-578.
- Kobasa, S.C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. J. of Personality and Social Psychology, 37, 1-11.
- Maddi, S.R. & Kobasa, S.C. (1984). The Hardy Executive. Homewood, IL: Dow Jones-Irwin.

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