

Relevance of Hardiness Assessment and Training to the Military Context

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Hardiness is a pattern of attitudes and skills that provides the courage and strategies to turn stressful circumstances from potential disasters into growth opportunities instead. As such, hardiness is particularly relevant to inherently stressful settings, such as military service. First, theory and research on hardiness assessment and training is summarized in a manner that highlights relevance to stressful situations. Discussed then are likely applications of hardiness assessment and training in particular military contexts, such as selection and preparation for Special Forces or other extreme assignments, and treatment of combat-related physical and mental disabilities.

In the past 25 years, hardiness has emerged as a set of personal characteristics that helps people turn stressful circumstances from potential disasters into opportunities for enhanced performance, leadership, conduct, health, and psychological growth (cf. Maddi, 1987, 2002; Maddi & Kobasa, 1984). As such, hardiness would seem especially valuable in military contexts, because of their characteristic stressfulness. After summarizing the theory and research on hardiness, this article will address the particular relevance of what has been learned in selection, training, and treatment contexts involving military personnel.

HARDINESS AS EXISTENTIAL COURAGE

The conceptual stance that led to hardiness research emphasized that stressful circumstances are an endemic part of living, and hence, that courage is needed if one is to grow and develop, rather than deny and avoid (Maddi, 2006). Hardiness

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was proposed as a set of attitudes and skills that constitute courage (Maddi, 1988, 2002).

The Initial Research Project on Hardiness

Hardiness emerged as the basis for resilience in a 12-year, natural experiment at Illinois Bell Telephone (IBT), conducted from 1975 to 1987 (Maddi & Kobasa, 1984). When the study began, the U.S. telephone industry was still a federally regulated monopoly composed of AT&T and its subsidiary companies, such as IBT. Federal regulation had been believed important because inexpensive and reliable telephone service seemed in the public interest. However, the pressure was building to deregulate the industry in order to stimulate the competition that would eventually lead to the present, burgeoning telecommunications industry.

Every year in the IBT study, a wide variety of data was collected on 450 male and female supervisors, managers, and decision makers. Six years into the longitudinal design, the deregulation occurred in 1981, and is still regarded as one of the largest upheavals in corporate history. IBT went from 26,000 employees in 1981 to 14,000 in 1982. One manager in the sample reported that he had 10 supervisors in 12 months, and that neither they nor he had any idea what they were doing. Every time the company came up with a plan, it had to be evaluated by a federal judge, to insure that it did not constitute a restraint of open trade. Clearly, the company and its employees were severely disrupted.

The data collected in the 6 years following the upheaval showed that two thirds of the sample suffered and collapsed. There were problems in performance, such as violence and absenteeism in the workplace, and divorces. Health also suffered, through heart attacks, cancer, mental disorders, and suicides. In contrast, the other third of the sample not only survived, but actually thrived. Those who stayed at IBT rose up in management, and those who left used their experience to make significant contributions to competitor companies, or start their own firms. As to health, they felt more energy and vitality, and fewer symptoms than before the upheaval.

In the comparison of the debilitated two thirds with the resilient one third on the voluminous data collected before the upheaval, the orientation of hardiness was determined to be the differentiator. Specifically, the resilient employees were characterized by the hardy attitudes of commitment, control, and challenge (Kobasa, 1979; Maddi & Kobasa, 1984). Those high in commitment believed that, whatever the circumstances, it is best to stay involved with the people and events going on around you, because that is the meaningful thing to do. Pulling back in isolation and alienation seemed to them a waste of time and talent. Those high in control believed that it is always best to struggle to have an influence on outcomes, even if that is problematic. They felt it was a waste of time and talent to just sink into passivity and powerlessness. Those high in challenge believed that change is normal,

and an opportunity to learn from the resulting experiences, be they positive or negative, so as to deepen your understanding and wisdom about living. They felt it naive to wish for easy comfort and security. Although hardly the same thing, these 3Cs were positively interrelated, defining the hardiness orientation, conceptualized as existential courage.

The IBT study also showed that, by comparison with the others, employees high in the hardy attitudes showed the action pattern of coping with stressful circumstances by facing them (rather than being in denial) and struggling to turn them from potential disasters into opportunities (rather than avoiding them or blaming others). Socially, the hardy employees were more involved in building patterns of interaction with their significant others that emphasized mutual assistance and encouragement, rather than undermining competition or overprotection. Further, the hardy employees also took pains to care for their bodies through eating well, engaging in relaxation procedures, and exercising. The conclusion reached was that, under stress, the courage contained in the hardy attitudes provided the strength and motivation to do the hard work of transformational coping, supportive social interactions, and facilitative self-care (Maddi, 2002; Maddi & Kobasa, 1984).

As shown in Figure 1, the pattern of results at IBT led to an overall view of hardiness as an enhancer of health and performance under stress. As acute stresses (changes) and chronic stresses (continuing conflicts) mount, the organism's strain increases. Strain (a momentary example of which is the "fight or flight" reaction) involves heightened sympathetic nervous and endocrine system arousal, mental expressions of which include impatience, lack of concentration, and impaired memory. If this elevated strain is not moderated by how one responds to the stresses, the ensuing bodily exhaustion may result in breakdowns in physical and mental health, and in performance (Selye, 1976). The breakdowns are likely to take place along the lines of genetic weaknesses. Typical physical health breakdowns are the "wear and tear" disorders (e.g., heart disease, strokes, cancer, Alzheimer's disease). The mental health breakdowns include debilitating depression, anger, and anxiety disorders. Performance inadequacies include inability to meet deadlines, follow orders, reach goals, take the initiative, be a leader, think constructively, play by the rules, and give needed empathy.

However, this debilitating process is not as likely to happen if the person is high in hardiness, as shown in the remaining portions of Figure 1. The hardy attitudes provide the courage and motivation to engage in the difficult but essential tasks of socially supportive interactions, transformational coping, and felicitous self-care. Through hardy self-care, strain can be moderated, making it more possible to think through and carry out the necessary coping and social interaction efforts. Through hardy coping actions, the stressfulness of events can be diminished by turning changes to advantage, and resolving conflicts. Through hardy social interactions, one can deepen relationships with significant others by giving and getting assis-

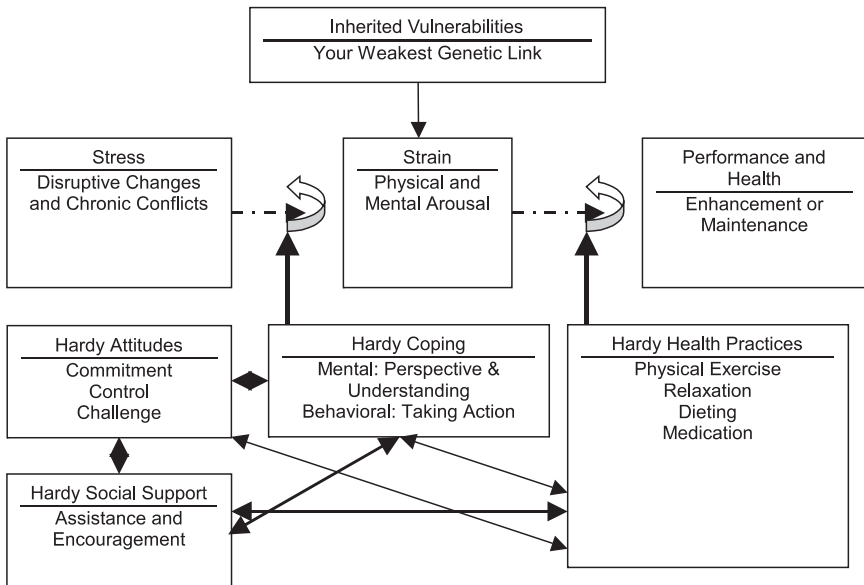


FIGURE 1 The hardiness model for performance and health enhancement. Copyright © 1986–2005 by the Hardiness Institute.

tance and encouragement. The end result of such a hardy orientation includes, over time, the full expression of one's capabilities, learning from both positive and negative experiences, and growing in vitality, fulfillment, and wisdom.

Additional Hardiness Research

There are now close to 600 studies on hardiness done around the world. The preponderance of results supports the conclusions from the IBT project. Our measure of hardy attitudes, the Personal Views Survey (PVS), has been translated into 16 Asian, European, and Middle Eastern languages. It is impossible here to report on all the studies that have been done. Instead, the topics of major relevance to the military context will be highlighted.

Early on, there were two methodological criticisms of the original version of the PVS. The first was that the 3Cs did not appear to be consistently intercorrelated in undergraduate samples (Funk & Houston, 1987; Hull, Van Treuren, & Virnelli, 1987). That the 3Cs did show the expected intercorrelation in samples of working adults suggested that the original measure was not universal enough, especially with regard to the challenge subscale. Considerable item revision and subsequent data collection and analysis was done over the years (cf. Maddi, 2002). The latest measure, the PVS III–R, consistently shows the 3Cs as intercorrelated in adult, un-

dergraduate, and even high-school samples (Maddi & Khoshaba, 2001b). Further, the 3Cs seem best understood as nested under a higher order hardiness factor (Maddi, Harvey, Khoshaba, et al., 2006; Sinclair & Tetrick, 2000), as has been hypothesized.

The second criticism contended that the hardy attitudes are no more than a negative expression of neuroticism or negative affectivity (Funk & Houston, 1987; Hull et al., 1987). By now, there are several findings suggesting that what the hardy attitudes measure is considerably broader than neuroticism or negative affectivity. One study (Maddi & Khoshaba, 1994) showed that the pervasive negative relationship between hardiness and the clinical scales of the Minnesota Multiphasic Personality Inventory (MMPI) persists when the effect of negative affectivity on hardiness is removed. Compelling evidence from another study (Maddi, Khoshaba, Harvey, Lu, & Persico, 2002a) is that the hardiness measure is correlated not only negatively with the neuroticism factor on the Neuroticism, Extraversion, Openness Five Factor Inventory (NEO-FFI) measure of the five-factor model, but also positively with each of the other four factors. Along with these results, another important finding is that the PVS III-R is not related to socially desirable responding (Maddi et al., 2006). With these findings, it would be difficult to argue that hardy attitudes are no more than negative expressions of neuroticism. Further, the five factors together account for only about one third of the variance of the 3Cs, suggesting that hardiness is not simply explained by the five-factor model (Maddi et al., 2002a). At least, it appears that the methodological critiques of hardy attitudes have been answered.

Summarized here are some of the major findings concerning the relationship of hardiness to performance, leadership, conduct, and health. Similar results to those in the IBT project have been reported concerning the positive influence of hardiness on performance and mood in such diverse samples as bus drivers (Bartone, 1989), firefighters (Giatras, 2000), lawyers (Kobasa, 1982), nurses (Keane, Ducette, & Adler, 1985), and undergraduates (Lifton, Seay, & Bushko, 2000; Maddi, 2002). Furthermore, Bartone (1999) studied military personnel in such stressful circumstances as combat and peace-keeping missions. There is clear evidence that the higher the hardy attitudes are before the personnel leave on the missions, the lower is the likelihood that life-threatening stresses in military engagements abroad will lead to posttraumatic stress or depression disorders. Similar results have been found regarding the stress of culture shock (rather than threats to life) in American employees on work missions abroad (Atella, 1989), and immigrants to the United States (Kuo & Tsai, 1986).

There are also studies notable for concerning more common sorts of stresses, and objective indices of performance and conduct. For example, Maddi and Hess (1992) showed that hardiness, measured before the basketball season began, predicted six out of seven indexes of performance excellence throughout the ensuing season among male, varsity, high-school players. Similarly, Lancer (2000) measured hardiness in female synchronized swimmers, and found that those with the

highest levels subsequently made the U.S. Olympic team in 2000, and then performed the best in the competition. Further, Bartone and Snook (1999) found that hardy attitudes emerged as the best predictor of transformational leadership over the 4 years training of cadets at West Point Military Academy. Similarly, Westman (1990) found that hardy attitudes measured in Israeli military recruits who subsequently entered officer training positively predicted successful graduation. Further, the higher the hardy attitudes of firefighter applicants about to enter training, the better is their performance during, and rate of successful completion of the 4-month training (Maddi, Harvey, Resurrection, Giatras, & Raganold, 2006).

As to conduct, Maddi, Wadhwa, and Haier (1996) studied alcohol and drug use among high school graduates about to enter college. Whereas a family risk factor was positively correlated with self-report of whether alcohol and drugs were tried, it was hardiness that was negatively correlated with self-report of the frequency with which these addictive substances were used. Objective measurement through urine screens also showed this negative relationship between hardiness and substance use.

There are also construct validity studies that support the conceptualized mechanisms whereby hardy attitudes lead to hardy actions, thereby having positive effects on performance, conduct, and health. Specifically, there is evidence of a positive relationship between hardy attitudes and the hardy actions of (a) coping with stresses by problem solving, rather than denying and avoiding; (b) interacting with others by giving and getting assistance and encouragement, rather than competition or overprotection; and (c) engaging in effective self-care, rather than excessive or insufficient nutrition, exercise, and relaxation (Maddi, 2002; Weibe & McCallum, 1986). Further, hardy attitudes are positively related to feeling actively involved in the choice of activities and the ensuing interaction (Maddi, 1999). Also expected, results show that hardiness is related negatively to repression, and right-wing authoritarianism, and positively to creativity, and entrepreneurial effectiveness (Maddi et al., 2007). Together, these findings are consistent with what is expected from Figure 1. These findings have spurred the development of a comprehensive test, the *HardiSurvey III-R*, which measures stress, strain, hardy attitudes, hardy coping, regressive coping, and hardy social support, and the manner in which they interact in stress resilience or vulnerability (Maddi & Khoshaba, 2001a).

How Hardiness Develops

The IBT study also included interviews on the early life history of the participating employees, conducted before the deregulation upheaval. Comparison of the data given by those who survived and thrived in the upheaval with those whose performance and health declined supported the hardiness conceptualization of development (Khoshaba & Maddi, 1999). Specifically, those who survived and thrived described their early life as stressful, and their parents as supportive and encouraging

of their efforts to grow nonetheless. Convinced by their parents of the importance of, and their capability in coping and thriving, they worked hard in school, and were also therefore supported by their teachers.

These results suggested that hardiness is learned, rather than inborn, and prompted the development of a hardiness training program (Khoshaba & Maddi, 2001). Briefly, the program is based on a workbook that includes hardy coping, socially supportive interactions, and self-care exercises, plus a procedure for using the feedback from these efforts to deepen hardy attitudes. Typically, there are several weekly sessions in *HardiTraining*, so that trainees can carry out planned exercises in their lives, and report back on the results of this. By now, there are studies showing that this training not only increases hardy attitudes and actions, but also improves performance and health in working adults (Maddi, 1987; Maddi, Kahn, & Maddi, 1998), and college students (Maddi, Khoshaba, Jensen, et al., 2002). In working adults, the training increased their job satisfaction, and constructive involvement with fellow employees, while decreasing the number of them in the sample whose tested blood pressure qualified as high. As to college students, the training increased their retention rate and grade point averages over the next 2 years.

Summary

Putting the findings mentioned together supports the view that hardy attitudes are the courage and motivation to deal with stressful circumstances through hardy action patterns that turn them from potential disasters into opportunities and advantages, thereby enhancing performance and health. As such, hardiness makes a useful contribution to the emphasis of positive psychology and posttraumatic growth (Bonanno, 2004; Maddi, 2006).

HARDINESS AND MILITARY CONTEXTS

Hardiness emerges as especially relevant to military settings, due to their being inherently stressful and demanding on the personnel involved. Hardiness applications regarding both hardiness assessment and training appear important. As to assessment, relevant contexts include selection of recruits for Special Forces or for other particularly demanding jobs or leadership positions. Currently, there is a disruptively high attrition rate in Special Forces, as a growing proportion of recruits do not make it through the training, and are unwilling or unable to accept the increasingly demanding work, which is fueled by such factors as a growing deployment rate, and greater “irregular warfare” challenges. Though less dramatic, continuation rates in other military contexts may also benefit from hardiness training, especially as demands increase. It would be useful, therefore, to assess hardiness

levels in military personnel being considered for Special Forces or other special duty status, and include this information in decisions as to who should be accepted for training. In this fashion, attrition rates due to poor performance and inadequate motivation may well be diminished, because those selected will have the courage, motivation, and skills to turn stressful circumstances to advantage.

Hardiness training may be useful as an addition to current training procedures for Special Forces and other demanding fields. Actually, this training will likely be helpful to everyone entering these, and perhaps other training programs, as the higher one's hardiness level, the better one's performance, leadership, conduct, and health under stressful circumstances. Specifically, military personnel undergoing HardiTraining will increase in the courage and motivation to do the hard work of transformational coping, socially supportive interactions, and effective self-care, in order to turn stressful circumstances from potential disasters into constructive growth opportunities instead. Another important application of hardiness training is to help in rehabilitation, as a growing number of military personnel are experiencing and surviving catastrophic physical and mental injuries, in these days of war and terrorism. HardiTraining will provide these burdened people with the courage, motivation, and skills to decrease the likelihood of posttraumatic stress and depression disorders, and to positively compensate for physical disabilities. The use of HardiTraining in these contexts will be facilitated if relevant military caregivers prepare themselves to provide this service by going through the train-the-trainer program that is available.

CONCLUDING REMARKS

Twenty five years of conceptualization, research, and application has rendered hardiness assessment and training ready and relevant for inclusion in military contexts. It is time now to incorporate this approach in these military contexts, as our changing, turbulent times are increasing the potentially disruptive stresses encountered by military personnel. This incorporation may lead to a substantial enhancement of performance, leadership, conduct, and health.

REFERENCES

- Atella, M. (1989). *Crossing boundaries: Effectiveness and health among western managers living in China*. Unpublished doctoral dissertation, University of Chicago.
- Bartone, P. T. (1989). Predictors of stress related illness in city bus drivers. *Journal of Occupational Medicine*, 31, 657-663.
- Bartone, P. T. (1999). Hardiness protects against war-related stress in army reserve forces. *Consulting Psychology Journal*, 51, 72-82.

- Bartone, P. T., & Snook, A. (1999, May). *Cognitive and personality factors predict leader development in U.S. Army cadets*. Paper presented at 35th International Applied Military Psychology Symposium (IAMPS), Florence, Italy.
- Bonanno, G. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, *51*, 72–82.
- Funk, S. C., & Houston, B. K. (1987). A critical analysis of the Hardiness Scale's validity and utility. *Journal of Personality and Social Psychology*, *53*, 572–578.
- Giatras, C. (2000). Personality hardiness: A predictor of occupational stress and job satisfaction among California fire service personnel. Unpublished master's thesis, California State University, Long Beach.
- Hull, J. G., Van Treuren, R. R., & Virnelli, S. (1987). Hardiness and health: A critique and alternative approach. *Journal of Personality and Social Psychology*, *53*, 518–530.
- Keane, A., Ducette, J., & Adler, D. (1985). Stress in ICU and non-ICU nurses. *Nursing Research*, *34*, 231–236.
- Khoshaba, D. M., & Maddi, S. R. (1999). Early experiences in hardiness development. *Consulting Psychology Journal*, *51*, 106–116.
- Khoshaba, D. M., & Maddi, S. R. (2001). *HardiTraining*. Newport Beach, CA: Hardiness Institute.
- Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology*, *37*, 1–11.
- Kobasa, S. C. (1982). Commitment and coping among stress resistance among lawyers. *Journal of Personality and Social Psychology*, *42*, 707–717.
- Kuo, W. H., & Tsai, Y. (1986). Social networking, hardiness, and immigrant's mental health. *Journal of Health and Social Behavior*, *27*, 133–149.
- Lancer, K. (2000). *Hardiness and Olympic women's synchronized swim team*. Paper presentation at University of Nevada, Los Vegas.
- Lifton, D. E., Seay, S., & Bushko, A. (2000). Can student hardiness serve as an indicator of likely persistence to graduation? Baseline results from a longitudinal study. *Academic Exchange Quarterly*, *4*, 73–81.
- Maddi, S. R. (1987). Hardiness training at Illinois Bell Telephone. In J. P. Opatz (Ed.), *Health promotion evaluation* (pp. 101–105). Stevens Point, WI: National Wellness Institute.
- Maddi, S. R. (1988). On the problem of accepting facticity and pursuing possibility. In S. B. Messer, L. A. Sass, & R. L. Woolfolk (Eds.), *Hermeneutics and psychological theory: Interpretive perspectives on personality, psychotherapy, and psychopathology* (pp. 182–209). New Brunswick, NJ: Rutgers University Press.
- Maddi, S. R. (2002). The story of hardiness: Twenty years of theorizing, research, and practice. *Consulting Psychology Journal*, *54*, 173–185.
- Maddi, S. R. (2006). Hardiness: The courage to grow from stresses. *The Journal of Positive Psychology*, *1*, 1–9.
- Maddi, S. R., Harvey, R. H., Khoshaba, D. M., Lu, J. L., Persico, M., & Brow, M. (2006). The personality construct of hardiness, III: Relationships with repression, innovativeness, authoritarianism, and performance. *Journal of Personality*, *74*, 575–598.
- Maddi, S. R., Harvey, R. H., Resurrection, R., Giatras, C. D., & Raganold, S. (2007). Hardiness as a performance enhancer in firefighters. *International Journal of Fire Service Leadership and Management*.
- Maddi, S. R., & Hess, M. (1992). Hardiness and success in basketball. *International Journal of Sports Psychology*, *23*, 360–368.
- Maddi, S. R., Kahn, S., & Maddi, K. L. (1998). The effectiveness of hardiness training. *Consulting Psychology Journal*, *50*, 78–86.
- Maddi, S. R., & Khoshaba, D. M. (1994). Hardiness and mental health. *Journal of Personality Assessment*, *63*, 265–274.

- Maddi, S. R. (1999). The personality construct of hardiness, I: Effect on experiencing, coping, and strain. *Consulting Psychology Journal*, *51*, 83–94.
- Maddi, S. R., & Khoshaba, D. M. (2001a). *HardiSurvey III–R: Test development and internet instruction manual*. Irvine, CA: Hardiness Institute.
- Maddi, S. R., & Khoshaba, D. M. (2001b). *Personal Views Survey III–R: Internet instruction manual*. Irvine, CA: Hardiness Institute.
- Maddi, S. R., Khoshaba, D. M., Harvey, R. H., Lu, J. L., & Persico, M. (2002). The personality construct of hardiness, II: Relationships with measures of psychopathology and personality. *Journal of Research in Personality*, *36*, 72–85.
- Maddi, S. R., Khoshaba, D. M., Jensen, K., Carter, E., Lu, J. L., & Harvey, R. H. (2002). Hardiness training for high risk undergraduates. *NACADA Journal*, *22*, 45–55.
- Maddi, S. R., & Kobasa, S. C. (1984). *The hardy executive: Health under stress*. Homewood, IL: Dow Jones-Irwin.
- Maddi, S. R., Wadhwa, P., & Haier, R. J. (1996). Relationship of hardiness to alcohol and drug use in adolescents. *American Journal of Drug and Alcohol Abuse*, *22*, 247–257.
- Selye, H. (1976). *The stress of life* (2nd Ed.). New York: McGraw-Hill.
- Sinclair, R. R., & Tetrick, L. E. (2000). Implications of item wording for hardiness structure, relation with neuroticism, and stress buffering. *Journal of Research in Personality*, *34*, 1–25.
- Weibe, D. J., & McCallum, D. M. (1986). Health practices and hardiness as mediators in the stress-illness relationship. *Health Psychology*, *5*, 435–438.
- Westman, M. (1990). The relationship between stress and performance: The moderating effect of hardiness. *Human Performance*, *3*, 141–155.