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HARDINESS CONSIDERED ACROSS CULTURES

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1. INTRODUCTION

By now, hardiness has been established through much research to be a particular pattern of attitudes and skills that facilitates resilience under stressful circumstances (e.g., Maddi, 1994, 1999, 2002; Maddi & Khoshaba, 2005; Maddi & Kobasa, 1984). Hardiness appears to be the courage, motivation, and strategies to turn stressful circumstancs from potential disasters into growth opportunities instead. It is time now to consider whether the significance of hardiness differs, or needs to be interpreted differently across cultures.

2. CURRENT KNOWLEDGE ABOUT HARDINESS

In the 25 years since hardiness was discovered, there has been considerable theorizing and research concerning its role in maintaining or enhancing performance, conduct, stamina, and health under stressful circumstances. Issues have emerged and been resolved, results have accumulated, and progress has been made in assessment and training.

2.1. Discovery of hardiness

Hardiness was discovered in the 12-year, longitudinal study at Illinois Bell Telephone (IBT) that began in 1975 (Maddi & Kobasa, 1984). A representative sample of 450 managers was tested extensively, both psychologically and medically, every year, in anticipation of the expected federal deregulation of the telephone industry in order to stimulate more rapid telecommunications development. In 1981, the deregulation occurred, with cataclysmic stressful change that is still regarded as among the major upheavals in corporate history.

In the wake of the upheaval, two-thirds of the IBT sample fell apart. There were heart attacks, strokes, cancer, mental disorders, violence in the workplace, suicides, and divorces. In contrast, the other third of the sample not only survived, but also thrived.

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These employees actually found the dramatic changes imposed by the deregulation to provide a needed context for their ingenuity, self-confidence, and creativity, in the process of turning the stresses into growth opportunities for themselves and the company. Their performance, conduct, stamina, and health flourished as it had not before the upheaval. It was the psychological differences between the resilient and non-resilient sub-samples, measured before the upheaval took place, that illuminated the attitudes and skills of hardiness.

2.2. Hardy attitudes and skills

In the IBT and later studies, the hardy attitudes have emerged as the 3Cs of commitment, control, and challenge (e.g., Maddi, 2002; Maddi & Kobasa, 1984). If you are strong in commitment, you want to stay involved with the people and events in your world, even when the going gets rough, because that seems to you the way to maintain and find meaning in your life. Pulling back into isolation and alienation seems like a mistake. If you are strong in control, you want to keep trying to influence the outcomes going on around you, even if that is difficult, because that keeps you involved in your life. Sinking into powerless and passivity is not an answer for you. If you are strong in challenge, you think of stress and change as inevitable, and an opportunity to grow by finding new avenues of meaning, and learning more about experience and life. Expecting easy comfort and security in an unchanging world seems naïve to you.

It is the interactive combination of commitment, control, and challenge that defines hardiness as the existential courage to face stressful circumstances openly and directly, and the motivation to do the hard work of dealing with them constructively (e.g., Khoshaba & Maddi, 2001; Maddi, 2002). Important in this constructive process is hardy, or transformational coping (Maddi & Kobasa, 1984), which involves interpreting each stressful circumstance that is encountered as a problem that needs to be solved by your ingenuity. This hardy coping is in contrast to addressing the stresses by the regressive coping approach (Maddi & Kobasa, 1984) of denying and avoiding, or the destructive coping approach (Maddi, 2004) of catastrophizing and striking out. Whatever short term relief these regressive or destructive approaches may bring, they are much less effective in the long run than is hardy coping (Khoshaba & Maddi, 2001).

Another hardy skill concerns interacting with significant others in a fashion that enhances one's sense of social support (Maddi & Kobasa, 1984; Khoshaba & Maddi, 2001). To do this, you must identify and resolve conflicts with significant others, and replace them with a pattern of giving and getting assistance and encouragement, while avoiding competition or overprotection. Clearly, conflicts and competition undermine the process whereby assistance and encouragement characterize the relationship. It is also true, though perhaps less obvious, that overprotection has an undermining effect, as its message to the person receiving it is that he/she is not capable of functioning effectively and needs others to do it instead.

The third set of hardy skills (Maddi & Kobasa, 1984; Khoshaba & Maddi, 2001) involve self-care aimed at maintaining a level of organismic arousal that is optimal for the hardy coping and social interaction efforts. This pattern of self-care includes hardy use of relaxation techniques, and nutrition and exercise patterns. The overall aim here is not to moderate weight as much as to ensure an optimal level of energy—not too high or too

low—whereby the hard work of hardy coping and social interaction will be facilitated (Khoshaba & Maddi, 2001).

2.3. Early criticisms of hardy attitudes

The original measure of hardy attitudes that emerged from the IBT study, called the Personal Views Survey (PVS), was comprised of six available scales from other tests that seemed relevant to commitment, control, and challenge (cf., Maddi, 1997). It was this questionnaire that led to the early criticisms that hardiness (1) was not a unitary characteristic, as the challenge component was unrelated to the commitment and control components in some samples, and (2) was little more than the opposite of negative affectivity, or neuroticism (Funk & Houston, 1987; Hull, Van Treuren & Virnelli, 1987). As to the alleged non-unitary quality of hardy attitudes, the major difficulty emerged as due to one of the scales used to measure challenge. The items on this scale appeared to be interpreted differently by college students than by working adults, leading to a unitary measure in the latter population, but a non-unitary situation in the former population (cf., Maddi, 1997). As to the alleged redundancy of hardiness with negative affectivity, the problem appeared to be that several of the scales initially used to measure the former characteristic included only negatively worded items (cf., Maddi, 1997).

The original hardy attitudes measure was quickly supplanted by the Personal Views Survey, Second Edidtion (PVS II), and this seemed to ameliorate both problems (cf., Maddi, 1997). In particular, the PVS II included only items written specifically for relevance to hardiness (rather than incorporating scales already in use for other purposes), and used close to an equal number of positively and negatively worded items for the components of commitment, control, and challenge. As expected, the PVS II characteristically yields estimates of the three components that are positively interrelated in samples not only of working adults and college students, but even of high school students (e.g., Maddi & Hess, 1992; Maddi, Wadhwa & Haier, 1996).

Further, there are studies showing that the PVS II does not appear to be redundant with negative affectivity. For example, the pattern of negative relationships between hardy attitudes and the clinical scales of the Minnesota Multiphasic Personality Inventory persists even after controlling for a standard measure of negative affectivity (Maddi & Khoshaba, 1994). This suggests that though hardiness is indeed a measure of mental health, its measurement effectiveness in this regard does not depend on shared variance with negative affectivity. And, in a study (Maddi, Khoshaba, Harvey, Lu & Persico, 2001) involving the NEO-FFI (Costa & McCrae, 1989), hardiness is not only negatively related to neuroticism, but also positively related to all four of the other factors in the Five Factor Model. As these five factors are independent of each other, it would be difficult to conclude that hardiness is nothing more than a negative indicator of neuroticism or negative affectivity. Furthermore, in the attempt to use it as a predictor, the NEO-FFI explained only about one-third of the variance of hardiness, suggesting that the latter variable may be substantially unexplained by the Five Factor Model. Also, the findings of a recent methodological study (Sinclair & Tetrick, 2000) speak against both early criticisms by confirming that, commitment, control, and challenge, as expected, are best regarded as related subcomponents of a higher order hardiness factor, and that this factor is empirically distinct from negative affectivity or neuroticism.

2.4. Conceptual comparison with other relevant variables

At a conceptual level, there are other concepts in psychology that appear similar enough to hardiness to provoke some consideration at this point. Examples of such concepts are ego-strength (Barron, 1953), self-efficacy (Bandura, 1977, 1982, 1986), optimism (Scheirer & Carver, 1985; Seligman, 1991), resiliency (Jew, Green & Kroger, 1999), and religiousness (Bergin, 1983; Wallace & Forman, 1998). Suffice it to say that such considerations as self-confidence and self-esteem are too general, non-technical, and devoid of a place in systematic psychological theorizing to warrant discussion here. Self-confidence and self-esteem are arguably part of hardiness, ego-strength, self-efficacy and optimism, but are too general to make any specific contribution.

The terminology of ego-strength comes from psychoanalytic theory. In that theory, one's ego is strong if it helps in the process of defending against awareness of selfish desires by channeling them through behaviors that appear socially appropriate instead (cf., Maddi, 1969/1996). This is not, however, what the ego-strength concept came to mean in psychological research. Barron's (1953) Ego-Strength (Es) scale, which is part of the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1967), has been described as a coping process bringing "adaptational capacity" and "situational control" (Dahlstrom, Welsh, & Dahlstrom, 1975). As such, ego-strength should be relevant to dealing effectively with stresses, thus facilitating performance and health (Folkman & Lazarus, 1988). Thus, even though ego-strength is not very salient in psychological research these days, it is as a concept somewhat similar to hardiness.

Conceptually, self-efficacy derives primarily from behavioristic theory. According to Bandura (1977, 1982, 1986), self-efficacy is very specific, involving judgments made of one's capacity to efficaciously perform specific, particular tasks. Presumably, one's level of self-efficacy in a particular circumstance reflects prior relevant experiences with similar situations, rather than a generalized component of personality. As such, if there were to be measures to self-efficacy, they would have to be very specific to the task at hand, and thus reflect a "microanalytic methodology" (Bandura & Adams, 1977). This position expresses the behavioristic unwillingness to conceptualize anything as general as a personality disposition (Maddi, 1969/1996). Nonetheless, someone less behavioristic might wish to consider the sum of all the specific self-efficacies that exist in a person, and conceptualize this as his or her characteristic self-efficacy. Such a measure has actually been developed by Bernard, Hutchison, Lavin and Pennington (1996). Their measure (S-Ef) may be similar to the control component of hardiness, though it is conceptually unclear whether there is any similarity with the commitment and challenge components.

Also deriving from behaviorism is the concept of optimism, which is defined as the expectancy that in most situations one will be able to attain desired goals (Seligman, 1991). Once again, this expectancy level summarizes one's past experiences in interacting with particular tasks and stresses. Although hardiness is a much more elaborated concept (combining the components of commitment, control, and challenge), there is a similarity of this concept with optimism. After all, if hardiness leads one to have the courage and skills to deal effectively with stressful circumstances, that should result in general optimism. It may be, however, that optimism may verge for some people on naïve complacency. Fortunately, there are several optimism scales (Fibel & Hale, 1978; Carver, Schierer, & Weintraub, 1989) that can be compared to the hardiness measure.

Typically, resilience has been considered the act of surviving despite stressful circumstances (Bonanno, 2004), and has tended to emphasize youngsters. In this position, it has been assumed that there are various factors, notably social support and hardiness, that are pathways to resiliency (Bonanno, 2004). In this approach, resilience would be measured by continuing to function well despite traumatic disruptions, and the various pathways that facilitate this would be measured accordingly. But, some investigators have fallen into construing resiliency as a disposition helpful in functioning well under stress (Jew, Green & Kroger, 1999). This disposition is considered to incorporate as many as 12 attitudes and behavioral inclinations (Mrazek & Mrazek, 1987). There does not appear to be any particular, organized personality theory from which the 12 suggested components are derived. The enormous task of measuring dispositional resilience has been taken on by Jew, et al. (1999), whose four related studies have led to three overall factors, namely, future orientation, active skill acquisition, and independence/risk-taking, as the components of dispositional resiliency. These three factors related to other already applicable measures of stress-resistance (such as coping), and differentiated institutionalized from non-institutionalized adolescents. The items of this measure suggest some level of similarity with hardiness. If evidence of adequate reliability and validity accumulates for this index of dispositional resiliency, it will make sense to compare its predictive power to that of hardiness.

Lately, the emphasis of resiliency on maintaining health and performance under stress has been supplemented by the thought that traumatic events can actually deepen and enhance one's functioning. This extension is covered by the emphasis on post-traumatic growth (Aldwin & Levenson, 2004), and transformational coping (Aldwin, 1994). But, in these extensions, the emphasis on coping is much less specific than in hardiness theory. As to hardiness, transformational coping refers to a particular procedure of putting a stressful circumstance in perspective, deepening one's understanding of it, and then planning and implementing a plan of action that should be decisive in decreasing its stressfulness by turning it to advantage (Kobasa, et al., 1982; Maddi & Kobasa, 1984). In contrast, Aldwin's (1994) usage of the term "transformational coping" refers much more generally to somehow thriving rather than being undermined under stress.

Although not likely to be a personality disposition, religiousness is nonetheless a potentially important factor in dealing with stressful circumstances (Bergin, 1983; Wallace & Forman, 1998). Based on a belief in a God-figure and a credo concerning good versus bad values and actions that is given on high, religiousness has been shown to protect against painful emotions, while encouraging acceptable behaviors. As such, religiousness is considered a buffer against being undermined by difficult, stressful circumstances. But, by comparison with personality variables like hardiness, religiousness may lead to less flexible, adaptable behaviors, due to its basis in an all-powerful figure who dictates a given, unchangeable credo.

2.5. Empirical comparison of hardiness with other relevant variables

A particularly effective way to compare the empirical value of hardiness with these other concepts is comparative analysis (Maddi, 1969/1996). This approach involves pitting hardiness against one or more of the other concepts as independent variables in the attempt to explain mutually relevant dependent variables.

To date, such an analysis has been accomplished by comparing hardiness and optimism in their relative relationship to transformational and regressive coping (Maddi & Hightower, 1999). In the three studies involved, hardiness was measured by the PVS III, and optimism by the LOT (Scheier & Carver, 1985). The first study utilized an undergraduate sample, and the 15 scales from Carver, Scheier and Weintraub's (1989) COPE test as an index of coping style. The second study also involved an undergraduate sample, but coping was measured by Moos' Coping Response Inventory (1993). The sample in the third study comprised women who were about to receive biopsies in order to determine whether their breast lumps were malignant. Before the biopsy, they completed not only the PVS III and LOT, but also the COPE test. In all studies, hardiness and optimism (which showed an expected, moderately positive correlation) were entered into regression analyses as independent variables, and compared in their relationship to particular dependent variables. This approach purified hardiness and optimism of their shared variance, permitting conclusions as to which concept better relates to coping style.

In the first two studies, which involved the everyday stresses of student life, hardiness showed considerably more positive relationships to expressions of transformational coping and negative relationships to regressive coping (Maddi & Hightower, 1999), than did optimism. In the third study, which involved participants who were under great health stress, optimism increased in the number of its positive relationships to transformational coping styles, but still showed virtually no negative relationships to regressive coping styles (Maddi & Hightower, 1999). Nonetheless, by comparison to optimism, hardiness continued to show a slightly greater number of positive relationships to transformational coping, and a considerably greater number of negative relationships to regressive coping styles. Overall, hardiness emerged as a stronger predictor of effective coping than did optimism, suggesting that the latter concept may include not only a basis for trying harder but also for naïve complacency (Maddi & Hightower, 1999).

There is also a comparative analytic study (Maddi, Brow, Khoshaba, & Vaitkus, 2004) evaluating the relative power of hardiness and religiousness in minimizing depression and anger under stress. The sample was composed of US military officers at or above the rank of Colonel, who were attending a year of additional training at the War College. They completed the PVS III-R as to hardiness, the Duke Religiosity Index of religious spirituality and practice, the CED-D test of depression (Radloff, 1977) and the STAXI test of anger (Impara & Plake, 1998). As expected, hardiness and religiousness showed a small, but significant positive correlation. Regression analyses using hardiness and religiousness as independent variables (which purified each of the variance shared with the other), and depression and anger indices as dependent variables produced a pattern of results in which there were main effects for hardiness but not for religiousness. Specifically, hardiness was negatively related to depression and anger variables. There were also a few interaction effects which, when plotted, showed that only when hardiness is low did religiousness relate negatively to depression and anger. These results suggest that hardiness is more powerful than religiousness in protecting against painful emotions under stress. In this, it may be important that hardiness involves more flexibility and resourcefulness than the more tradition-based, unchangeable views in religiousness.

Unfortunately, there are not yet other comparative analytic studies of hardiness and other conceptually similar variables. The more typical approach is to study the interrelationships of these variables, and determine whether something further can be learned

through factor analytic efforts. This approach was taken in the studies conducted by Bernard, et al. (1996). In the first study, they administered the personality measures of ego-strength, hardiness (an early version of the PSV utilized by Gentry and Kobasa, 1984), self-esteem, self-efficacy, optimism, and maladjustment to a sample of college students and adult volunteers. What emerged was a pattern of positive intercorrelations among the first five measures, and negative correlations with the sixth. Further, they conducted a factor analysis, which led to an emergent health promotion factor with two lower-order factors, which they labeled self-confidence and adjustment. Hardiness, along with ego-strength and maladjustment loaded on the lower-order adjustment factor. This suggests that hardiness is not merely the same as the self-confidence factor composed of self-esteem, self-efficacy, and optimism.

In the second study (Bernard, et al., 1996), a sample of undergraduates and adult volunteers were administered the same six personality measures, plus the NEO-FFI (Costa & McCrae, 1989) and the Crowne-Marlowe Social Desirability (SD) Scale (Crowne & Marlowe, 1964). The results showed a similar pattern of correlations among the six personality measures, plus a tendency for all of them to correlate positively with the SD scale, and either positively or negatively with the various factors of the NEO-FFI. The small, positive correlation obtained between hardiness and social-desirability in this study is inconsistent with the absence of relationship between these two variables shown in a study (Maddi, Harvey, Khoshaba, Lu, Persico & Brow, 2004) which utilized a later, more refined measure of hardiness. In the Bernard, et al (1996) study, the relationships shown by hardiness and the NEO-FFI involved not only a negative correlation with neuroticism, and but also a positive correlation with the other four factors. A similar pattern emerged in the study by Maddi, et al. (2002), and is one reason why hardiness, though expressive of adjustment and mental health, cannot be explained away as nothing more than the opposite of neuroticism.

In the third study (Bernard, et al., 1996), all six personality measures showed similar, and conceptually expected patterns of relationship with measures of stress, health status, and ways of coping in a sample of adult volunteers. The picture for hardiness is similar to that obtained in other studies (e.g., Maddi, 2002). In an attempt to further determine the overlap among personality measures, a fourth study was conducted (Bernard, et al., 1996). In this study, the samples from Studies 2 and 3 were combined, and factor analyses were performed on the 143 individual items of the ego-strength, hardiness, and maladjustment measures. One emerging factor was defined by the maladjustment scale, whereas the second factor consisted of ego-strength and hardiness items, and the third only of hardiness items. The authors point out that the second and third of these factors (i.e., without maladjustment items) have the same degree of association with the criterion measures of stress, health status, and coping as does the overall adjustment factor itself. This pattern suggests that the relationships of ego-strength and hardiness to criterion variables is not reflective of negative affectivity or neuroticism, and that ego-strength and hardiness are not merely the same thing.

In summary, the available findings suggest that hardiness, though understandably related to some similar positive psychology concepts, is not merely the same thing as these concepts, and may actually be a better predictor of effective coping with stressful circumstances. Needless to say, more comparative analytic studies are needed before this conclusion can shift from tentative to certain.

2.6. Our current measurement of hardiness

Our measurement of hardy attitudes has evolved even further over the years. The latest and best measure is the PVS III-R, which is composed of the 18 most reliable and valid items that have survived from the PVS II (Maddi & Khoshaba, 2001a). The commitment, control, and challenge components of hardiness are each measured by an equal number of positively and negatively worded items. Over many studies differing in stressfulness contexts and sample types, the PVS II and III-R have demonstrated adequate reliability, and both convergent and discriminant validity. The PVS III-R can be administered either in hard copy form or on the internet, and yields commitment, control, challenge, and total hardy attitudes scores. The individual scale scores for commitment, control, and challenge, and total hardiness are compared to norms for various demographic, work, and ethnic groups emerging from our extensive data base of more than 10,000 protocols. There is also a test manual (Maddi & Khoshaba, 2001a) that documents reliability and validity. By now, the PVS II and III-R have been translated into 16 European, Asian, and Middle Eastern languages. These translations are used around the world, to say nothing of the countries that use the original English versions.

We have also developed the HardiSurvey III-R, a 65-item questionnaire that adds to the PVS III-R measure of hardy attitudes indices of stress, strain, hardy (transformational) coping, regressive coping, hardy work support, and hardy family support (Maddi & Khoshaba, 2001b). Also administrable in either hard copy for or on the internet, this test yields not only scale scores for the variables just mentioned, but also combines them into stress vulnerability and stress resistance factors. Meant to be used in comprehensive assessment of the resiliency of individuals under stress, this test produces a detailed, personalized report that utilizes the norms from our database of more than 10,000 cases. Also available is a test manual (Maddi & Khoshaba, 2001b) that documents reliability and validity.

2.7. Other hardiness measures

As to the hardy attitudes, there are also other measures than our own in use. In particular, Bartone (1995), who was a member of our original research team in the IBT study, has done his own refining of the PVS over the years, in his research with military personnel under stress. The evolution has gone from a lengthy test (Bartone, Ursano, Wright, & Ingraham, 1989) to a shorter version (Bartone, 1995), called the Dispositional Resiliency Scale (DRS). This measure includes more positively than negatively worded items, which may lead to response biases influencing the overall score. In his emphasis on studying military personnel under stress, Bartone (2002) has obtained findings that are quite consistent in reliability and validity with those in the accumulated research utilizing the PVS in its various revisions. But, there has not been much emphasis yet on discriminant validation, such as demonstrating that the DRS measure is unrelated to socially desirable responding. Also, it is unclear at present how relevant the DRS is to non-military contexts.

From time to time, other investigators attempt development of their own hardiness measures. For example, Pollock and Duffy (1990) have offered a health-related hardiness scale intended to determine how patients respond to various illnesses. Similarly, Lang, Goulet and Amsel (2003) have put forward a 45-item hardiness scale considered relevant to evaluating how bereaved parents respond following the death of their fetus/infant. Conceptually, both scales follow from the assumption that hardiness is not a general

feature of personality, but rather a specific inclination as to how to react in particular circumstances (as Bandura has done with his self-efficacy notion). To date, very little validity and reliability research has been done on these scales. Nor is it likely that they measure a general tendency toward courage in a large variety of circumstances, rather than just illness or death.

Structurally, these other hardiness scales include a predominance of positively worded items. Also, the wording of the items makes clear what the researcher is trying to find out about the person taking the test. This problem is furthered by the term "hardiness" being included in the title of the test. Thus, it will be all the more important in the validation process to determine not only convergent but also divergent validity, especially regarding such confounding tendencies as socially desirable responding. In contrast, the PVS II and III-R tend to disguise what the test is intended to reveal by more neutrally worded items that are balanced as to positive and negative wordings, and avoid reference to hardiness. Understandably, the PVS III-R shows independence of socially desirable responding (Maddi, et al., 2004).

2.8. Additional research on hardiness

Since the IBT longitudinal study, considerable ongoing research has tended to confirm that hardy attitudes maintain and enhance health under stressful circumstances. In these studies, the PVS II or III-R has been used to measure hardy attitudes, with the exception of some studies of military personnel, which have used the DRT. In a wide range of stressful contexts, ranging from life-threatening events of military combat and peace-keeping missions (e.g., Bartone, 1999), through the culture shock of immigration (e.g., Kuo & Tsai, 1986) or work missions abroad (e.g., Atella, 1989), to ongoing work or school pressures and demands (e.g., Maddi, 2002; Wedderburn, 1995), the buffering effect of hardy attitudes is shown in decreasing mental and physical illness symptoms, whether these be self-reported or more objectively measured.

Further, there is research showing that hardy attitudes lead to the maintenance and enhancement of performance under stress. Examples are the positive relationship between hardiness and subsequent (1) basketball performance among varsity players (Maddi & Hess, 1992), (2) success rates in officer training school for the Israeli military (Florian, Milkulincer & Taubman, 1995; Westman, 1990), (3) effective leadership behavior among West Point military cadets (Bartone & Snook, 1999), (4) retention rate among entering community college students (Lifton, Seay & Bushke, 2000), and (5) speed of recovery of baseline functioning following disruptive culture shock (Atella, 1989; Kuo & Tsai, 1986).

Supplementing the findings on health and performance exemplified above is research elaborating the construct validity of hardy attitudes. In an experiential sampling study (Maddi, 1999) in which participants were paged at random to comment on their ongoing activities, there was a positive relationship between hardiness and (1) involvement with others and events (commitment), (2) the sense that the activities had been chosen and could be influenced (control), and (3) the positive process of learning from what was going on (challenge). Findings of other studies are consistent with the hypothesis that hardy attitudes lead to beneficial health and performance effects by providing the courage and motivation needed to carry out hardy coping, social support, and self-care efforts (Maddi, 1986, 1994, 1997, 2002). For example, results show that hardy attitudes are related to the tendency to view stressful life events as more tolerable (Ghorbani, Watson & Morris, 2000;

Rhodewalt & Zone, 1989), cope transformationally with these events (Maddi, 1999; Maddi & Hightower, 1999), avoid excessive physiological arousal (Allred & Smith, 1989; Contrada, 1989), and pursue positive while avoiding negative health practices (Maddi, Wadhwa & Haier, 1996; Weibe & McCallum, 1986).

2.9. Hardiness training

Hardiness seems so important in resiliency under stress that the question arises as to whether it is inherited or learned. That it may be learnable was suggested by the finding using IBT data that, by comparison with the sub-sample that deteriorated under the deregulation upheaval, the sub-sample that survived and thrived described their early lives as stressful, but remembered being selected by their parents as the hope of the family, and as having taken on that role throughout their lives (Khoshaba & Maddi, 1999). The view that hardiness can be increased or decreased by life experiences does not signify that it must be other than a personality disposition. In all fully elaborated personality theories, there are some components that are present at birth, and others that develop through the interaction of the person with others and situations. There are many conceptualized personality dispositions (e.g., need for achievement, ego-strength, optimism, hardiness) that fit into this latter, developed category (cf., Maddi, 1969/1996).

There is by now a hardiness training procedure that was begun at IBT (Maddi, 1987) and has been substantially elaborated since then (Khoshaba & Maddi, 2001). Consistent with hardiness theory, this approach emphasizes assisting trainees in coping effectively with their stressful circumstances, interacting with others by giving and getting assistance and encouragement, engaging in self-care procedures that facilitate this coping and supportive interaction, and learning how to use the feedback obtained from these various efforts to deepen the hardy attitudes of commitment, control, and challenge (Khoshaba & Maddi, 2001). Evidence is accumulating that hardiness training is effective not only in increasing hardy attitudes, but also in enhancing performance, and decreasing illness symptoms for working adults (Maddi, 1987; Maddi, Kahn & Maddi, 1998) and college students (Maddi, Khoshaba, Jensen, Carter, Lu & Harvey, 2003).

3. THE CROSS CULTURAL SIGNIFICANCE OF HARDINESS

Now that hardiness is well established as a pattern of attitudes and skills that helps one remain resilient under stress, it is time to consider its significance across cultures. Conceptually, it would seem that hardiness is useful universally. After all, the stresses of personal development and every day life occur everywhere. Further, that we live in dramatically changing times imposes additional stresses on everyone in every culture.

3.1. Hardiness as conceptually universal

Conceptually, hardiness is based in existentialism (Maddi, 1978, 2002), which emphasizes that life's meaning is subjective, and is determined by the pattern of decisions people make on a moment-to-moment, day-to-day basis (Frankl, 1960; Kierkegaard, 1954).

Regardless of whether there is an absolute meaning in the world, all any of us know is what we construe as the result of our decisions. In this position, personal wisdom and development is dependent upon choosing the future (the path that is less familiar) rather than the past (holding on to one's already established ways of understanding). This is the case whether choices are our own doing, or are imposed on us by socio-environmental changes. But, the obstacle to regularly choosing the future is the ontological anxiety involved in the inherent stressfulness of the unpredictability and uncertainty that is involved (Kierkegaard, 1954). So, to tolerate anxiety in order to be able to continue to develop and deepen life's meaning by future-oriented decisions, one must have existential courage (Tillich, 1952).

Hardiness has been conceptualized and researched as this needed existential courage (Maddi, 1986/1996). In making future-oriented decisions despite the various stresses you are experiencing, you need to have the hardy attitudes of believing in the importance of staying involved with the people and events that are going on (commitment), trying to have an influence on outcomes (control), and searching to learn from your experiences all the while (challenge). After all, the absence of hardy attitudes will lead you to react to stressful circumstances by detachment and alienation, powerlessness and passivity, and a threatened yearning for easy comfort and security. Conceptually, therefore, the 3Cs of hardy attitudes should be helpful in courageously facing the uncertainty of experience.

In addition, the emphasis on the hardy skills of transformational coping, socially-supportive interactions, and self-care should also be helpful in managing the inevitable stresses of living. After all, the combination of hardy attitudes and skills leads toward solving problems, giving and getting assistance and encouragement, and maintaining optimal bodily arousal. In contrast, the absence of hardy attitudes and skills pushes one toward reacting to stresses by either denying and avoiding, or overreacting and striking out, and by self-indulgence rather than balance and moderation.

It seems likely that, in any demographic or culture, the hardy attitudes and skills would involve behavior patterns that are constructive in dealing with developmental or imposed stressful circumstances. In contrast, the behavior patterns resulting from non-hardy attitudes and skills would be disadvantageous in any demographic or culture. There may, of course, be particular ways in which hardiness will get expressed in differing demographics or cultures. But, hardiness is so basic to psychosocial wellbeing that it would be hard to conceptualize it as irrelevant or even a negative influence in some demographics or cultures.

To pursue this point a bit further, let us consider the conceptualization of living inherent in Buddhism and Daoism, which appear at first blush to be quite different from existentialism (Carr & Ivanhoe, 2000). On closer analysis, however, these positions are not really that different in implications for how people function (Abi-Hashem, 2000; Moeller & Stan, 2003). Buddhism assumes that if there is an absolute meaning to living, it is imperfectly or subjectively construed by individuals. Thus, the path to wisdom and development involves recognizing this imperfection and subjectivity, and attempting to rise above it by learning more through scrutinizing one's experiences. This is surprisingly similar to existentialism, which considers recognition that one constructs meaning, and that this meaning needs to change as experience accumulates. Although Buddhism does not explicitly emphasize courage, it does assume that there is strength in rising above the specifics of one's beliefs in the pursuit of greater wisdom. Buddhism and existentialism also share an emphasis on the wholeness of experience, rather than dichotomizing rationality and emotions (Moeller & Stan, 2003).

It is harder to determine whether the specific hardy attitudes and skills coordinate with or violate Buddhist assumptions. The emphasis of hardiness is on using one's beliefs and behaviors in staying involved with people and events, solving rather than being undermined by stressful circumstances, and continuing to learn from these experiences. There is little reason to believe that Buddhism and Daoism would advocate the opposite, namely, alienation, powerlessness, and easy comfort and security. Most probably, Buddhism and Daoism would be more likely to endorse hardy attitudes and behaviors than their opposite. This tentative conclusion is facilitated through recognition that the hardy attitudes include little of the egotism that you are better able to navigate life's problems than are those around you, and combine reason and emotions into wholistic outlooks that evolve over time.

3.2. The role of hardiness across demographics

As to demographics, let us consider sex, age, and socioeconomic status. First, let us compare males and females in their need for hardiness. It is, of course, easy to say that males need hardiness more than females, as the former sex seems traditionally more invested in the struggle for economic, social, and political success than does the latter sex. Even in our culture, however, this sexual distinction tells us little about how stressful is the life of the two sexes. Females certainly experience similar levels of stresses associated with the developmental process. As much as do males, females must, as children, learn to move around and communicate; as adolescents, struggle to find their own lives in terms of careers and relationships; in adulthood, build on or reverse earlier decisions and help others dependent on them to develop; and in old age, find a graceful though painful way of putting all their experiences together into a meaningful whole. There is little conceptual reason to believe that this developmental process is less or more stressful, or that hardiness plays a less important role in managing the stresses, for females than males. The same logic applies for stresses that are ongoing signs of changing times, rather than developmental givens, as there is little reason to believe that these changes affect one sex more than the other.

Nor is there reason to believe that some age categories are more or less stressful times than others. Regarding development, the particular nature of the stresses characteristic of childhood, adolescence, adulthood, and old age certainly differ. But, the level of stressfulness is not likely to differ across these age categories. For example, just learning how to locomote and communicate is likely to be as stressful for you as a child, due to limited cognitive capacities and experience, than is trying out what career is best for you in adolescence and adulthood. And, of course, the imposed stresses of changing times are very likely to find their way to your experience regardless of your age category.

The same appears true when socio-economic class is considered, though this is perhaps more problematic. It may well be argued, for example, that the economically poor lead more stressful lives than their financially advantaged counterparts. It may also be argued that people with minority status are more prone to experiencing stress than are their more socially advantaged counterparts. There is little question that the stresses of the developmental process and of changing times have quite an impact on minorities, especially if the situation is concatenated by discrimination. Nonetheless, whatever the level of

stress is due to socio-economic differences, the role of hardiness is still similarly relevant to how well that stress will be turned to advantage.

It would appear that hardiness is similarly relevant to being resilient under stress across demographic differences. This does not mean, however, that there are not important demographic differences in the level of hardiness that is characteristically learned in the developmental process. It may be, for example, that females are less instilled with hardiness than males, at least in certain cultures. It is also quite possible that the learning conditions important to hardiness development are less consistently available the lower is one's socio-economic level. And, as hardiness development probably takes time to reach fruition, it is possible that younger people show less of this key to resilience than do adults.

3.3. The role of hardiness in individualistic and collectivistic cultures

Important in psychology these days is the comparison of lives within individualistic as opposed to collectivistic cultures. It is certainly worth considering whether there are differences across these two kinds of culture in the levels of stress experienced and of hardiness developed.

It might be argued that there is less stress on people in collectivistic than in individualistic cultures. After all, members of collectivistic cultures minimize the uncertainty of living through defining themselves in terms of their group more than do members of individualistic cultures. Developmentally, however, people in both types of culture have to figure out how to function and get along with each other. It may be that the content of the stresses is different across the two types of culture, but it is not completely certain that the level of developmentally induced stress is also different. And, it is also not so clear that the level of externally induced stress is characteristically different across these culture types. Indeed, it might even be argued that externally induced stresses have a greater disruptive impact on members of collectivistic cultures.

Nor is it clear that there is likely to be a difference in hardiness levels across individualistic and collectivistic cultures. After all, the hardy attitudes involve not only trying to have an influence on outcomes (control), and learning from your experience (challenge), but also staying involved with others and events going on around you (commitment). Further, the hardy skills of coping by solving problems, interacting by deepening patterns of assistance and encouragement, and engaging in self-care to maintain optimal arousal, seem as consistent with collectivistic as individualistic emphases in living. It seems that there is no clear conceptual basis for hypothesizing a difference in characteristic hardiness levels in people across these two types of culture.

Despite the position taken here, it may still be argued that hardiness differs in collectivistic and individualistic cultures. For example, collectivistic cultures appear to emphasize addressing stresses by endurance, patience, humility and flexibility. This may seem to downplay the control, and perhaps the challenge components of hardiness. But, it seems unlikely that one could manage the mental and action dispositions mentioned above, as stresses mount, without beliefs in the importance of controlling one's potentially disruptive emotional reactions, and of the challenge to a deepened understanding that will make one's approach meaningful. After all, endurance, patience, humility, and flexibility are hardly irrelevant reactions to stress in individualistic cultures. In these cultures, if one

reacts by avoidance, impatience, egotism, or rigidity, one is not likely to be very successful in gaining the support and admiration of other people. In short, hardiness should not be construed as a naïve approach to getting ahead at the disregard and expense of those around us.

3.4. Preliminary findings

There appears no clear-cut conceptual basis for differentiating the relevance and role of hardiness across demographic variables and culture types. This does not mean, however, that there is no importance to seeking empirical answers to the universality or relativity of hardiness. At present, there are some preliminary findings that are available, though the emerging picture is not by any means complete.

In the original Illinois Bell study of working adults, there were no differences in hardiness observed across the demographic variables of age, sex, managerial rank, or ethnicity (Maddi & Kobasa, 1984). To date, the major source of relevant data is a study (Maddi, et al., 2004) of 1239 participants ranging in age from 17 to 85 years, socioeconomic status from lower to upper class, and education from high school to advanced degrees. The sample included 753 females (60.8%), and the breakdown of race was: Caucasian, 66.8%; Asian, 22.1%; and all others, 11.1%. All participants completed the HardiSurvey III-R, which measures hardy attitudes, hardy coping, hardy social support interactions, and stress. In the sample as a whole, the reliability and intercorrelation of these variables corresponded to what other research with this measure has shown.

Of particular relevance here are the relationships shown between hardiness and the relevant demographic and cultural variables that were available in this study. As to hardy attitudes, there is a positive relationship to age ($r = .20$, $p < .01$), and education ($r = .19$, $p < .01$), but no relationship with sex ($r = .07$, ns) or race ($r = .06$, ns). Stress was negatively related to hardy attitudes ($r = .10$, $p < .05$), but showed no differences across age, education, sex, or race. The relationships obtained between demographic variables and the hardiness components of commitment, control, and challenge follow the same pattern as those with total hardiness.

At this time, there are many studies of hardiness being carried out in various cultures around the world. The results of a few of these studies are already available. In particular, Kuo and Tsai (1986) reported that, in their sample of Asian immigrants to the U.S., the higher the hardiness level, the more rapid was the ability to cope effectively with the stress of culture-shock, and assimilate into the new society by finding jobs and friends. Similarly, hardiness was positively related to the psychological adaptation of married couples in a sample of Turkish immigrants in Canada (Ataca & Berry, 2002). Further, Lopez, Haigh and Burney (2004) have found that among Latin American immigrants in Australia, hardiness level was negatively related to the level of stress they reported experiencing. These results mirror those concerning U.S. citizens on a two-year work mission in China (Atella, 1989), wherein hardiness level was positively related to the speed at, and level to which their emotional state and performance rebounded after the initial culture shock.

Also relevant are two studies (Florian, et al., 1995; Westman, 1990) concerning Israeli military personnel entering officer-training school. Both studies showed that the higher the hardiness level, the greater the effectiveness in dealing with training stresses,

and graduating successfully. These results are mirrored in a study (Bartone & Snook, 1999) showing that U.S. cadets at West Point Military Academy were more successful in leadership efforts the higher was their hardiness level at the beginning of training.

More complicated are the results of a study (Harris, 2004) comparing African American and Caucasian college students. It was found that the Caucasian subsample had a higher mean hardiness level than the African American subsample. Nonetheless, among the African Americans, hardiness was negatively related to use of drugs, tobacco, and alcohol, supporting previous evidence that hardiness leads to self-care (Weibe & McCallum, 1986). But, hardiness among the African Americans was positively related to personal distress reports of anger, stress, depression, and anxiety, which was the opposite result of that with Caucasians. Harris (2004) suggests that differences in cultural teachings may account for the racial differences found in the relationship of hardiness to personal distress. Perhaps African Americans in the US have a harder time believing that they can influence the societal outcomes going on around them, though, if they are hardy, they do think they can take care of their own health. One possible problem in this study may have been the use of the DRS to measure hardiness. This measure has been validated and used primarily on military samples, though Harris' sample was college students. Further, the DRS is composed primarily of positively-worded items, and there has not yet been sufficient study of its discriminant validity. Another possible problem with this study is that the challenge component of the hardiness measure was deleted, as it showed lower reliability than the other two. As hardiness is conceptualized as an emergent characteristic of the combination of all three Cs (Maddi, et al., 2004), deleting one of them is problematic. It would be helpful for there to be further study of African Americans with regard to stress management through coping and social support interactions.

In addition, there is a study (Ghorbani, et al., 2000) of Iranian business managers, showing that the higher their hardiness level, the better their performance and health despite stressful circumstances. These findings are similar to those obtained on U.S. business managers (e.g., Maddi & Kobasa, 1984; Maddi, 2002).

With one exception, the results of the studies mentioned here do not show cross-cultural differences in the role of hardiness as a facilitator of resilience and enhanced performance under stress. There may be mean differences in hardiness across races or societies, though there is not yet enough evidence to form definite conclusions. At the individual level, however, hardiness level appears to be a factor in resilience under stress across races and societies. Once again, this conclusion is tentative, as more relevant studies are needed.

4. CONCLUSION

There is certainly an accumulation of evidence indicating that hardiness is a key to transforming stressful circumstances from potential disasters into growth opportunities instead. As to the emerging question of whether there are demographic and cultural differences in the role of hardiness, there are only a few relevant findings at this time. Although these available findings suggest little or no demographic or cultural differences in the importance of hardiness in surviving and thriving under stress, much more work needs to be done before a firm conclusion can be reached.

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