



## Personality, stress and mental health: evidence of relationships in a sample of Iranian managers

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### Abstract

Measures of hardiness and the health typology of Grossarth-Maticek and Eysenck (Grossarth-Maticek, R., & Eysenck, H. J. (1990). Personality, stress, and disease: description and validation of a new inventory. *Psychological Reports*, 66, 355–373) were administered to 94 Iranian managers along with scales recording stress and psychopathology. Hardiness displayed expected and sometimes strong linkages with the health types. Control, for example, correlated  $-0.62$  ( $p < 0.001$ ) with the coronary-prone type. Of the hardiness factors, Commitment served as the most reliable predictor of four stress measures, with relationships ranging from  $-0.21$  ( $p < 0.01$ ) to  $-0.36$  ( $p < 0.001$ ). Commitment and Control also predicted lower depression and anxiety, with linkages of  $-0.20$  ( $p < 0.05$ ) to  $-0.44$  ( $p < 0.001$ ). Among the health types, the coronary-prone scale yielded the strongest pattern of results, displaying hypothesized relationships with three of four stress and four of five psychopathology measures. These correlations ranged from  $0.18$  ( $p < 0.05$ ) to  $0.32$  ( $p < 0.01$ ). These data most importantly demonstrated that constructs developed in the West for understanding the role of personality in stress and health apparently have a cross-cultural validity in Iran as well. © 2000 Elsevier Science Ltd. All rights reserved.

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## 1. Introduction

Much contemporary research has emphasized the need to reconsider prominent Western notions about the mind-body relationship (Eysenck, 1990; Pelletier & Herzing, 1996). Cartesian thought at the origins of modern philosophy, along with Pasteur's successful use of germ theory to explain diseases, promoted a belief that mind and body must operate as separate entities (Coe, 1988; McMahon & Sheikh, 1996). Under the influence of this philosophical dualism, the psychological and medical sciences moved away from the more holistic views of the ancient Greeks and the Orient. More recent scientific evidence, however, has supported the older, more holistic conceptualization.

A vast literature, for example, exists on the relationships of personality and stress with physical illness (Friedman, 1990). Indeed, pioneers in this field focused exclusively on physical health (Kobasa, 1979; Kobasa, Maddi & Zola, 1983; Grossarth-Maticek, Eysenck & Vetter, 1988). As the holistic model gained a renewed credibility (Ikemi & Ikemi, 1986; Temoshok, 1990), studies increasingly looked at mental health. Personality characteristics predictive of physical health proved to be predictive of mental health as well (Maddi & Khoshaba, 1994; Schmitz, 1992). Such findings revealed a clear need for extending the domain of so-called psychosomatic disorders to the full range of diseases, for emphasizing the linkage between mental and bodily health, for developing a more integrated and sophisticated relationship between medicine and psychological science, and for placing discoveries about personality and disease within a broader context of research into the healthy and unhealthy personality (Ghorbani, 1996).

As one contribution to this integration, Kobasa (1979) suggested 'hardiness' as a personality construct for explaining resistance and coping in stressful situations. She defined hardiness in terms of an existential approach to personality and used items from a number of previously created instruments to operationalize the concept in a scale that contained three factors. The Control factor made reference to a self-perceived ability to determine what happens in life. A Commitment factor measured belief in the truth, importance and value of who a person is and what he or she is doing. The Challenge component recorded a healthy openness to change rather than a rigid craving for stability. Numerous studies confirmed that hardiness displayed the expected inverse correlations with severity of physical symptoms (e.g., Kobasa, Maddi & Kahn, 1982a; Kobasa, Maddi & Puccetti, 1982b) and with psychopathology (e.g., Maddi & Kobasa, 1984).

Grossarth-Maticek and Eysenck (e.g., 1990, 1991, 1995; Eysenck, 1988) developed a different integrative perspective on psychological and physiological well-being. They devised a questionnaire for measuring personality types which they related to health in specific ways. Their Type 1 proved to be cancer-prone, whereas Type 2 seemed vulnerable to coronary heart disease. Type 3 combined elements of the other two, but this Mixed Type exhibited no obvious physical health liabilities. In contrast, Type 4 operationalized a healthy form of functioning defined by a sense of autonomy. Research demonstrated that these types displayed predictable relationships not only with cancer and coronary heart disease, but with mental health as well (Schmitz, 1992).

Hardiness and the health typology have been related to stress in numerous previous studies (e.g., Kobasa et al., 1982b; Bartone, Ursano, Wright & Ingraham, 1989; Grossarth-Maticek &

Eysenck, 1991; Hills & Noverall, 1991; Wiebe & Williams, 1992; Florian, Mikulincer & Taubman, 1995). The present project extended that earlier research in three basic ways. First, relationships between hardiness and the health typology were examined directly. Within a holistic perspective, the obvious hypothesis was that Control, Commitment and Challenge would correlate inversely with Types 1, 2 and 3 and directly with Type 4. Second, this investigation moved from the earlier research emphasis on physical health to the more recent concern with mental health. The clear expectation was that hardiness and Type 4 would be associated with greater mental health whereas the other three types would yield evidence more suggestive of psychopathology.

Finally, and perhaps most importantly, the cross-cultural validity of these constructs was assessed by administering all scales to a sample of Iranian managers. The use of managers made it possible to examine work-related as well as life-related stress. It was assumed that these two forms of stress would covary directly. The further expectation was that stress would be associated with lower scores on the hardiness and Type 4 measures and with higher scores on psychopathology and the other three health types.

## 2. Method

### 2.1. Participants

The sample consisted of 94 managers who worked for an economic development foundation in Iran. This foundation also had responsibilities for administering charities for the poor and for injured and handicapped war veterans. All managers were males and were married. The average age was 40.1 years (S.D. = 7.1).

### 2.2. Measures

The scales used in this study were Persian translations made by the first author of instruments published originally in English. The adequacy of the translation was assessed in two ways. First, all items were translated from Persian back into English by individuals unfamiliar with the project. These procedures confirmed that translations offered reasonable representations of what had been expressed in English. Second, all items were examined in terms of their influence on internal reliability. Statements associated with a noteworthy reduction in  $\alpha$  were eliminated from the analysis. The Personal View Survey (PVS) served as the measure of hardiness (Ouellette, personal communication). This survey contained 50 statements. Responses were made along a 0–3 Likert scale indicating the degree to which each statement was true of the individual. Thirty-nine of the statements were reverse-scored. The Challenge, Commitment and Control subscales originally contained 17, 16 and 17 items, respectively; but internal reliabilities were improved by dropping one item from each instrument (Challenge,  $\alpha=0.62$ ; Commitment,  $\alpha=0.61$  and Control,  $\alpha=0.70$ ). These factors were scored separately, but they also were combined to yield a total Hardiness value ( $\alpha=0.79$ ).

The first four types of the Short Interpersonal Reactions Inventory (SIRI) were employed to record the health typology (Grossarth-Maticek & Eysenck, 1990). A 'yes' or 'no' reaction was

made to each statement. Types 1, 2 and 3 were assessed with 10 statements each. These items were worded so that a 'yes' response was indicative of the type. The Type 4 subscale included 20 statements, with half reverse-scored. In order to improve internal reliabilities, two items were dropped from Type 1 ( $\alpha=0.51$ ), one from Type 2 ( $\alpha=0.78$ ), two from Type 3 ( $\alpha=0.55$ ) and one from Type 4 ( $\alpha=0.73$ ). As a total Hardiness value was used to summarize the PVS data, so too was a total Unhealthy Type score computed for the health typology. This value was obtained by subtracting the Type 4 items from those measuring the other three types ( $\alpha=0.85$ ).

A number of work-stress and life-stress variables were obtained. The Cooper Work Stress Questionnaire (Cooper & Watt, 1992) measured stressful job events. It presented a list of 37 stressful work-related events. A Stressful Job Events score ( $\alpha=0.89$ ) served as a relatively objective index of work-related stress and reflected the number and frequency of stressful job events experienced during the previous year. Subjects also used a 0–5 rating scale to indicate the degree to which each event was perceived as stressful. A Job Stress Rating ( $\alpha=0.90$ ) offered a more subjective assessment of work-stress and involved a score based upon the product between the frequencies and ratings of these events. Stressful life events were assessed with the Holmes and Rahe (1967) Life Events Rating Scale. This instrument presented a list of 43 stressful life events. A 0–4 scale was employed to assess the perceived stress of each. Once again, a more objective Stressful Life Events score ( $\alpha=0.63$ ) was obtained along with a more subjective Life Stress Rating ( $\alpha=0.64$ ).

Evidence of relative psychological dysfunction was obtained with the 28-item General Health Questionnaire (GHQ-28: Goldberg & Hillier, 1979). A total score served as a broad index of psychopathology ( $\alpha=0.79$ ), but the GHQ-28 also included four subscales of seven items each which measured depression ( $\alpha=0.81$ ), anxiety ( $\alpha=0.63$ ), social dysfunction ( $\alpha=0.65$ ) and complaints of physical symptoms ( $\alpha=0.73$ ). This internal reliability for social dysfunction was produced by dropping one item.

### 2.3. Procedure

An array of psychological and physiological measures was obtained from the managers while they attended a meeting conducted by the foundation. The plan was to use these data in a number of different research projects. The instruments of the present study were included among others within a questionnaire booklet. Responses to all psychological scales were entered directly on the questionnaires. The heart rate, blood pressure and blood measures obtained from the managers did exhibit a few correlations with the psychological constructs of this investigation, and these results did generally support the research hypotheses. However, the number of significant relationships between the two sets of variables was no better than chance; so, these findings are not reported.

Data analysis first centered on correlations among all measures. Because specific predictions were made about all relationships, one-tailed tests of statistical significance were employed. Next, stepwise hierarchical multiple regressions determined the degree to which the more objective measures of stress, the hardiness factors and the four types predicted the other variables. This procedure made it possible to determine if psychological characteristics



Table 2

Intercorrelations among hardiness measures and health types ( $N = 94$ ). \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ 

Variables	2	3	4	5	6	7	8	9
<i>Hardiness Measures</i>								
(1) Control	0.29**	0.60***	0.82***	-0.31**	-0.62***	-0.40***	0.42***	-0.62***
(2) Challenge	–	0.29**	0.75***	-0.28**	-0.33***	-0.20*	0.17	-0.34***
(3) Commitment		–	0.76***	-0.16	-0.44***	-0.28**	0.30**	-0.45***
(4) Hardiness			–	-0.33**	-0.59***	-0.37***	0.37***	-0.60***
<i>Health Types</i>								
(5) Cancer-Prone (Type 1)				–	0.40***	0.43***	-0.27*	0.60***
(6) Coronary-Prone (Type 2)					–	0.53***	-0.54***	0.83***
(7) Mixed Type (Type 3)						–	-0.36**	0.69***
(8) Autonomous (Type 4)							–	-0.82***
(9) Unhealthy Type								–

### 3.1. Multiple regressions

In the multiple regressions, the coronary-prone type ( $\beta=0.04$ ,  $p < 0.01$ ) and Stressful Life Events ( $\beta=0.89$ ,  $p < 0.001$ ) served as significant predictors of Life Stress Ratings (multiple  $r = 0.94$ ,  $p < 0.001$ ). A multiple  $r$  of 0.84 ( $p < 0.001$ ) was obtained for Work Stress Ratings, but the lone significant  $\beta$  was observed with Stressful Job Events (0.77,  $p < 0.001$ ). Type 4 ( $\beta=-0.33$ ,  $p < 0.01$ ) was the lone reliable predictor of total GHQ-28 scores (multiple  $r = 0.48$ ,  $p < 0.001$ ). In the analysis of depression (multiple  $r = 0.62$ ,  $p < 0.001$ ), Commitment ( $\beta=-0.33$ ,  $p < 0.05$ ), Type 4 ( $\beta=-0.35$ ,  $p < 0.01$ ) and Type 3 ( $\beta=0.25$ ,  $p < 0.05$ ) made

Table 3

Correlations of hardiness measures with stress and psychological functioning ( $N = 94$ ). \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ 

Variables	<i>Hardiness Measures</i>			
	Control	Challenge	Commitment	Hardiness
<i>Stress Measures</i>				
Work Stress Rating	-0.20*	-0.25**	-0.36***	-0.34*
Stressful Job Events	-0.05	-0.24*	-0.27**	-0.23*
Life Stress Rating	-0.20*	0.03	-0.31**	-0.19*
Stressful Life Events	-0.10	0.05	-0.21**	-0.09
<i>Psychological Functioning</i>				
Depression	-0.38***	-0.08	-0.44***	-0.37***
Anxiety	-0.30**	-0.11	-0.20*	-0.26**
Social Dysfunction	-0.07	0.10	-0.14	-0.03
Physical Complaints	-0.15	0.05	0.01	0.08
GHQ-28	-0.32**	-0.06	-0.24**	-0.26**

Table 4

Correlations of health types with stress and psychological functioning ( $N = 94$ ). \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ 

Variables	Health Type Measures				
	Type 1	Type 2	Type 3	Type 4	Unhealthy Type
<i>Stress Measures</i>					
Work Stress Rating	0.16	0.32**	0.07	-0.15	0.26**
Stressful Job Events	0.11	0.18*	0.07	-0.07	0.16
Life Stress Rating	0.13	0.27**	0.05	-0.13	0.21*
Stressful Life Events	0.07	0.13	-0.01	-0.06	0.10
<i>Psychological Functioning</i>					
Depression	0.02	0.25**	0.31**	-0.43***	0.38***
Anxiety	0.09	0.23*	0.14	-0.18*	0.24*
Social Dysfunction	0.06	-0.07	-0.07	-0.17	0.08
Physical Complaints	0.16	0.24*	0.15	-0.34**	0.32**
GHQ-28	0.13	0.24**	0.18*	-0.39***	0.36**

expected contributions to the prediction equation. Multiple regressions examining anxiety, physical symptoms and social dysfunction failed to reach conventional levels of significance.

#### 4. Discussion

Within a cultural setting infrequently examined in the past, this investigation supported the renewed emphasis on more holistic understandings of personality, stress and health. Data from an Iranian sample revealed that hardiness as conceptualized by Kobasa (1979) was associated predictably with the health typology of Grossarth-Maticek and Eysenck (1990). These two sets of constructs were developed initially as part of separate research programs designed to clarify the relationship between personality and physical health. In this study, both correlated as expected with various indices of stress. They also exhibited at least some of the hypothesized linkages with psychopathology. Stress, psychopathology and health-related personality characteristics, therefore, displayed integrated patterns of association that were consistent with the holistic model. And again, this was true in a sample from a different culture responding in a different language than examined previously.

Among the correlations for the stress-related variables, Work Stress Ratings were especially important in predicting psychopathology, the health types and hardiness. The finding that the Work Stress Ratings were more predictive than Life Stress Ratings was perhaps unsurprising given that the research participants were managers. The observation that these ratings correlated more strongly than Stressful Job Events with other variables seemed to conform with previous suggestions that subjective more than objective factors determine the effects of stress (e.g., Linville, 1987; Smith, Johnson & Sarason, 1987; Kreitler, Aronson, Berliner, Kreitler, Weissler & Arber, 1995).

Again, health types and hardiness components displayed a clear cross-cultural validity. Among the types, findings for the coronary-prone type were especially noteworthy in that this

construct correlated with three of the four stress scales and with four of the five psychopathology measures. Type 2 and Type 4 also correlated predictably with a number of GHQ-28 variables. Type 1 failed to correlate either with stress or mental health, but this outcome may have partly reflected the fact that this scale exhibited the poorest internal reliability.

Among the hardiness components, Commitment was more predictive than the other two factors. Control and Challenge, nevertheless, displayed at least some expected relationships with stress and/or mental health, and these Challenge data were perhaps relevant to a recent controversy. Hull, Van Trueren and Virnelli (1987) concluded that lower correlations of Challenge with other hardiness components and with other variables suggested a need to eliminate this factor. Orr and Westman (1990) argued that such a recommendation was premature because it was based solely upon the use of older measures of hardiness. Yet, the problem still appeared with the newest, third generation index of hardiness (Florian et al., 1995). Like these previous studies, the present investigation again found that relative to Commitment and Control, Challenge did indeed display an overall weaker pattern of correlations. At the same time, Challenge was at least as effective as Control in predicting stress, and such an outcome seemed to support the ultimate utility of the construct, which nevertheless may need to be operationalized more effectively in the future.

In the multiple regressions, the more objective stress measures, hardiness and health types served as independent variables predicting subjective stress and psychopathology. These data were important for at least three reasons. First, personality sometimes made contributions to the prediction equation beyond those associated with the more objective conditions of stress. Specifically, the coronary-prone type joined Stressful Life Events in predicting Life Stress Ratings. Second, personality sometimes was more important than the objective stress conditions. This was evident in associations of Commitment, Type 3 and Type 4 with depression and of Type 4 with total GHQ-28 scores. Third, the discriminate validity of at least some of these personality measures was documented. One analysis or another suggested the unique importance of Commitment, Type 2, Type 3 and Type 4.

These multiple regressions also may have had an indirect bearing on another recent controversy. Funk (1992) argued that hardiness exerts no unique influence on health and that evidence to the contrary reflects the inverse relationship of hardiness with neuroticism and negative affectivity. This interpretation was supported by demonstrations that linkages between hardiness and health disappeared once negative affectivity was partialled out (Funk & Houston, 1987; Rhodewalt & Zola, 1989). More recent studies, however, have suggested that hardiness is related to, but nevertheless displays important differences from low levels of neuroticism (Williams, Wiebe & Smith, 1992; Maddi & Khoshaba, 1994; Florian et al., 1995). In the present multiple regressions, Commitment exhibited the expected influence on depression in prediction equations in which the four health types also served as independent variables. This was noteworthy because these health types correlate strongly with neuroticism (Schmitz, 1992). Such data, therefore, offered some support for the idea that hardiness cannot be explained away in terms of its covariance with reduced negative affectivity.

Many findings conformed with the hypotheses of this investigation, yet many others failed to reach conventional levels of significance. Some of these failures may have reflected the challenge of translating constructs from one language into another. The lower internal



reliabilities of Type 1 and Type 3, for example, may have been associated with this difficulty. But more than just problems in language may have been involved. Differences in values could have had effects as well. Iran is a country in which collectivistic values figure more prominently in social life than do Western individualistic values (e.g., Kim, Triandis, Kagitcibasi, Choi & Yoon, 1994). Research in the psychology of religion has documented that clearer evidence for expected relationships can appear when constructs reflecting the value systems of contemporary psychology are ‘translated’ into constructs that are more consistent with religious values. And this is true when both the psychological measures and the religions ‘translations’ are expressed in the same language, English (Watson, 1993, 1994). Future research may reveal that methodologies for translating between value systems within a single language may also be useful in translating between value systems across languages.

In summary, this project served as a successful first attempt to demonstrate that scales developed in the West for exploring the influence of personality on stress and health were valid in Iran as well. Refinements in these measures may make these instruments even more appropriate for use with this population and may yield even more compelling evidence in the future. Additional studies also will need to determine how much relationships between hardiness and the health types might be attributable to item overlap and to a sole reliance on a self-report methodology. Still, the broader implications of these data deserve a concluding emphasis. Hardiness and the health types clearly have at least some transcultural relevance.

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