

Early Experiences in Hardiness Development

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Personality hardiness has emerged in research as an important buffer in the stress-illness relationship. Little, however, is known about the antecedents in early experience. Based on conceptualizations in existential psychology and research on the resilient child, the present study tested hypotheses implicating stresses, compensatory family standards and self-perception, and parental stimulation as formative influences for hardiness in adulthood. Responses to life review interview questions given by managers previously selected to be low or high in hardiness were coded blind for the early experience variables hypothesized. The study demonstrated adequate interscorer agreement on early experience coding. Correlation and regression analyses demonstrated the expected prevalence of compensatory family standards and self-perceptions in high- versus low-hardiness participants but failed to show any differences regarding stresses and parental stimulations. Discussion of these results centers on the developmental importance of compensatory effort.

Recent research on health and illness suggests that the personality style of hardiness buffers against the debilitating effects of stressful circumstances. This study was an initial investigation of early experiences that may facilitate the development of hardiness.

Building on Kobasa's (1979) retrospective study of the characteristics differentiating managers uniformly high in stress but differing in level of illness, Kobasa, Maddi, and Kahn (1982) did a prospective study on personality hardiness. Hardiness was defined as the following three related beliefs concerning the interaction between self and world: commitment, control, and challenge. Persons strong in the sense of commitment expect to be able to make whatever they are doing seem interesting and worthwhile

through their resourcefulness (instead of feeling bored and empty). Those strong in a sense of control believe that they can influence the direction and outcome of what is going on around them through their own efforts (as opposed to feeling like the victims of circumstance). Finally, persons high in a sense of challenge believe that their lives are most fulfilled when they are growing and developing through learning from experience (rather than wishing for easy comfort and security).

In their study, Kobasa et al. (1982) found that hardiness has a prospective buffering effect; it protects wellness more as stresses

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mount. Specifically, Kobasa et al. combined a longitudinal design (in which hardiness and stressful events were measured at Time 1 and illness was measured at Time 2, 1 year later) with a statistical control for illness (at Time 1). It appeared unlikely, therefore, that hardiness was merely the mental reflection or result of illness symptoms. The importance of hardiness as a stress buffer was studied by Kobasa, Maddi, Puccetti, and Zola (1986), who compared the relative effectiveness of this personality style with physical exercise and social support. Although it was clear that having more buffers helped to decrease the likelihood of severe illness symptoms over a 1-year prospective period, hardiness emerged as giving twice the protection of either physical exercise or social support.

Hardiness also appears to protect or enhance performance under stress. For example, Maddi and Hess (1992) showed that hardiness measured in the summer positively predicted basketball performance of varsity high school players throughout the fall and winter season. Furthermore, Westman (1990) found that hardiness positively predicted successful graduation of male and female military personnel from a grueling officer training program.

Some subsequent studies have focused on mechanisms whereby hardiness has its stress buffering effect. Maddi and Hightower (1999) found that when attempting to cope with stressful circumstances, hardy persons operated transformationally by analyzing the problem, formulating possible solutions to it, and carrying those solutions out. In contrast, nonhardy persons operated regressively, wishing the problem would just go away and detaching themselves from it. Similarly, Weibe and McCallum (1986) found that as hardiness increased, the likelihood of experiencing life changes as stressful decreased. In addition, as stresses mounted, hardiness increased the likelihood of engaging in potentially beneficial health practices, such as physical exercise.

If transformational coping is indeed a mechanism whereby hardiness has a buffering effect, then hardy persons should show less strain, that fight-or-flight mobilization of bodily resources in response to the dangers posed by stressful circumstances (Maddi & Kobasa, 1984). Prolonged strain is presumed to have an exhausting and debilitating effect that predisposes one to wellness breakdown (Selye, 1976). Of relevance, Allred and Smith (1989) reported that, in response to a stressful task, hardy persons showed a pattern of heart rate and blood pressure suggestive of less passive reactivity and more active coping. This was consistent with the finding (Maddi, 1999) that hardy persons were less susceptible than nonhardy persons to high blood pressure over a period of 7 years.

Successful attempts to teach hardiness to people suggest that this personality style is learned. Maddi (1987) initially developed a hardiness training program that uses three interconnected coping techniques to help people transform disruptive changes into less stressful experiences by exploring their cognitive, emotional, and action responses to them. The aim of this coping training is to set stressful events into a broader perspective so that they do not seem so terrible after all and to take decisive, rather than evasive, actions toward them. If these efforts fail, the emphasis shifts to accepting the events as unchangeable, in a manner that minimizes bitterness and self-pity. Feedback from these various coping efforts deepens the generalized belief that commitment, control, and challenge mark hardiness.

Using a waiting list control group, Maddi (1987) reported that hardiness training increased personality hardiness while simultaneously decreasing subjective (Hopkins Symptom Checklist total score) and objective (blood pressure) signs of strain. This pattern of results persisted over a 6-month follow-up period. Although this study suggested some sort of effectiveness for hardiness training, its design did not permit much

refinement of understanding. Attempting to go beyond these findings, Maddi, Kahn, and Maddi (1998) compared hardiness training with both a relaxation–meditation training condition and a placebo–social support control. On similar dependent variables to those used by Maddi (1987), the hardiness training condition appeared more powerful than either of the other two. These findings increase confidence in the learnability of hardiness but tell us little about how this lifestyle develops in early life.

In developing hypotheses concerning the early experiences that lead to hardiness, it is important to recognize the roots of this concept in existential psychology (e.g., Frankl, 1960; Kierkegaard, 1954; Kobasa & Maddi, 1977; Maddi, 1988; May, 1958). These roots emphasize the developmental value of stressful experiences as long as they lead to compensatory meaning and striving. Tournier's (1982) concept of creative suffering expressed this emphasis. Similarly, Kobasa and Maddi (1977) discussed the ideal condition for the development of hardiness as a rather nurturant period of childhood giving way to the more individualized development of adolescence, in which youngsters must find their own way in a period marked by social and biological changes on an unprecedented scale for them. Garmezy's (1986) work on resilient children added to this picture of stresses interpreted constructively and the role of family intactness, support, and standards despite socioeconomic disadvantage.

Building on and borrowing from the sources just mentioned, the milieu hypothesized to foster hardiness can be described. One variable is that the family's situation increases the likelihood of experiencing stressful changes and conflicts. Relevant here are such matters as poverty, immigrant status, chronic physical or mental illness of a parent, and the like. This casts a wider net than did Garmezy (1986), who concerned himself more exclusively with socioeconomic disadvantage. After all, even a middle-class or wealthy family may encounter stress-

ful circumstances through such conditions as serious illness, death, and divorce. The important variable is the likelihood of disruptive changes and conflicts rather than socioeconomic disadvantage per se (though the latter is a frequent context for the former).

For hardiness to ensue, the family's reaction to the frequent stressful circumstances must be to develop a compensatory sense of standards that becomes an organizing principle—a justification for existence. Presumably, not all families experiencing frequent stresses respond in this fashion. Indeed, the majority of such families probably become disintegrated and defeated.

Another important ingredient of hardiness development presumably enters the picture when a family that has devised a compensatory standard to cope with frequent or chronic stresses nominates one of the children to be the one to fulfill the standard. This chosen youngster, because of the requirement of being special, becomes cut off from easy camaraderie, not only within the family, but also within broader society. Although such youngsters may have a few intimates (perhaps who share their sense of special calling), they may feel and appear socially isolated.

However isolated the chosen youngster may feel, the special status stimulates a transcendence of present circumstances in favor of something regarded as greater than himself or herself. One form that this sense of transcendence takes is the drive to discern the meaning in experience rather than taking it at face value. Thus, the chosen youngster learns to evaluate experience through a personal process of reflection, rather than passively accepting what everyone thinks about it. Also, the present tends to have significance for the youngster only when understood in terms of the past and future. This is because the chosen child must chart progress toward fulfilling the compensatory goals.

Another aspect of this sense of transcendence is that the chosen youngster comes to

view reversals as an occasion to learn something of value for later efforts. He or she has good reason (the necessity of compensating for the family's problems) to keep trying. Thus, the punishment inherent in failures does not lead to avoidance of the unsuccessful circumstances. Rather, the youngster does what he or she can with the failure (i.e., learns from it) in order to prepare better for similar circumstances in the future. In this preparation, the youngster is bolstered by the belief that he or she is indeed chosen for greater things. This belief leads to persistence in the face of adversity.

The position taken here would seem at variance with the studies (e.g., Caplan & Douglas, 1969; Lloyd, 1980; Roy, 1985; Tennant, Hurry, & Bebbington, 1982) suggesting that early parental loss is fertile ground for adult psychopathology. It should be recognized at the outset, however, that some relevant studies (e.g., Crook & Eliot, 1980; Hopkinson & Reed, 1966; Pitts, Meyers, & Brooks, 1965) have failed to find a relationship between early loss and later mental illness. One problem is pervasive methodological shortcomings to studies in this area, rendering sure conclusions difficult (cf. Crook & Eliot, 1980).

Furthermore, the position taken here on the development of hardiness emphasizes not the mere occurrence of stressful circumstances, such as parental losses, but rather a particular familial response to them that emphasizes compensatory standards and supports a particular family member in fulfilling those standards. In general, studies of loss and subsequent pathology have not considered whether some families respond to stressful circumstances differently than others and whether within families some youngsters have a different developmental trajectory than others. Among the few studies approaching relevance to the present position is that of Brier et al. (1988), which showed that adult psychopathology had a greater likelihood in participants whose families responded to parental loss by a

worsened quality of home life. Where home life was not appreciably damaged by parental loss, psychopathology did not seem to develop in the children. This finding is consistent with Garmezy's (1986) report that socioeconomically disadvantaged youngsters did not show developmental handicaps but rather remained resilient as long as their families remained intact and well functioning.

In the context of the two studies just mentioned, the present position concerning the developmental milieu of hardiness appears possible to consider. Accordingly, the hypotheses of the present study can now be stated as follows:

Hypothesis 1: In early life, persons subsequently high in hardiness frequently experienced stressful changes and conflicts. Specifically, these stressful circumstances may have included (a) the emotional or physical absence of one or both parental figures, (b) poverty, (c) immigrant status, and (d) mental or physical illness of one or both parental figures.

Hypothesis 2: In early life, persons subsequently high in hardiness experienced from one or both parental figures the sense that they were chosen to fulfill standards seen as compensatory for the family's problems. Specifically, this sense of standards may have involved (a) appeals to the child for help, (b) expressed admiration toward the child for superior qualities, and (c) explicit nomination of the child for the compensatory role.

Hypothesis 3: In early life, persons subsequently high in hardiness received stimulation from their parental figures that awakened their sense of possibility. Of specific relevance are such experiences as (a) trips, (b) educational events, (c) games that stimulate fantasy, (d) efforts at upward mobility, and (e) an emphasis on reading.

Hypothesis 4: In early life, persons subsequently high in hardiness felt the necessity of striving for compensatory goals, which led them to reflect on and evaluate their experience in a manner that lent per-

spective and transcendence. Specifically, they (a) appreciated the value of intimate rather than merely available or conventional relationships, (b) learned to look beyond the obvious to underlying meanings, and (c) developed a time perspective linking the present to the past and future.

Method

The data for the present study came from the first sample followed in the Chicago Stress Project, a 1975-1986 longitudinal study of lower-, middle-, and upper-level managers at Illinois Bell Telephone (Maddi & Kobasa, 1984). Specifically, life review interviews were conducted by two experienced female interviewers who knew nothing about the participants except their company and managerial role and were unaware of the hypotheses of this study. In addition, the hardiness levels of the participants were unknown to Deborah M. Khoshaba until she had completed all interview scoring done in this study.

Participants

The sample from which a subsample was interviewed was selected to be representative on demographic variables of age, education, gender, marital status, income, and job level of the management corps at Illinois Bell Telephone at the time (1975). Accordingly, invitations to participate in the longitudinal study were tendered to 275 managers, with their Medical Director's encouragement to participate, and 259 returned their initial questionnaires completed. These participants were tested by questionnaire every year for the next 12 years, during which period attrition—which was mainly due to transfers, retirements, and job terminations—reduced the sample to 117. The reduced sample was still representative of the management corps on the demographic variables already listed.

In 1978, a subsample was selected for interviewing. Resources and time available dictated that between 30 and 40 participants be interviewed. The subsample of potential interviewees was selected at random from the upper and lower thirds of the distribution of hardiness scores obtained in the most recent testing of the sample of

what was then 181 managers. As there were only one and two women in the high and low thirds of the hardiness distribution groups, respectively, it was decided not to consider gender in this study.

Accordingly, 20 participants from each of the high and low thirds of the hardiness distribution were selected in order to produce high- and low-hardiness groups that were comparable on age, education, marital status, income, and job level. On being approached to participate, 13 participants in the high-hardiness group and 15 participants in the low-hardiness group agreed to participate on the grounds that their anonymity would be protected and that they could decline to answer questions or terminate the interview at any time. The videotaping of one participant was a failure, resulting in a final subsample of 12 in the high-hardiness group and 15 in the low-hardiness group, though both groups remained comparable on the demographic variables mentioned above.

Hardiness Measure

Approximately 3 months before the interviews, participants had completed the Personal Views Survey II, a hardiness questionnaire that includes 50 rating-scale items (Maddi, 1996). A factor analysis of the items confirmed the presence of the following three interrelated factors: Commitment, Control, and Challenge (Bartone, 1989). Several estimates of internal consistency (coefficient alpha) have been in the .70s for Commitment, Control, and Challenge subscales and in the high .80s for the total hardiness score (Maddi, 1998). Estimates of stability over a 3-week period showed correlations in the .60s for Commitment, Control, and Challenge subscales and of .71 for the total hardiness score (Maddi, 1998).

Content Analysis of the Life Review Interviews

Requiring approximately 30 minutes, the life review interviews began with a general question concerning remembrances of early family and other social experiences. This was followed by requests for the best and worst things about the participant's relationship with mother, father, brothers, sisters, and same- and opposite-sex

friends. Then Coddington's (1972) scale was administered orally, with its emphasis on the occurrence or absence of acute and chronic family stresses, such as accidents, illnesses, financial troubles, parental separations or divorces, parental remarriages, deaths, chronic worsening of mood, family relocations, and school changes. The developmental part of the interview encouraged the participants to reconstruct from early memories the best and worst things that happened to them, their main satisfactions and disappointments, estimates of whether and how much they had changed since early family life, and what changes they would like to make in the future.

Through intense scrutiny of two interviews, a content analysis scoring system was devised to quantify each of the four hypothesized early experience variables. Included were several scoring categories relevant to each of the four variables. Each scoring category required a judgment score ranging from 0 (*not present*) to 2 (*strongly present*), which facilitated quantification without introducing too many possibilities for interpretation. The scoring categories for the variables are described below.

Acute or chronic stresses. A wide range of occurrences were relevant to the first hypothesis, and, for simplicity, all were given equal weight, though a scored instance was regarded to preclude scoring of other occurrences. In order for an occurrence to be scored, it was necessary that the participant have actually experienced disruption of some sort as a function of the occurrence. Accordingly, the relevant scoring categories and criteria were as follows:

1. Loss of mother: Participant remembers disruptive loss of mother through death, divorce, or institutionalization.

2. Loss of father: Participant remembers disruptive loss of father through death, divorce, or institutionalization.

3. Mother physically absent: Participant remembers mother as being away from the home characteristically or regularly for the largest portion of the day, with this being disruptive of family life.

4. Father physically absent: Participant remembers father as being away from the home characteristically or regularly for the largest portion of the day, with this being disruptive of family life.

5. Mother emotionally absent: Participant remembers mother as characteristically being

emotionally unavailable, despite physical presence.

6. Father emotionally absent: Participant remembers father as characteristically being emotionally unavailable, despite physical presence.

7. Physical illness of mother: Participant remembers one or more diagnosed illnesses of mother that were severe enough to be disruptive of family life.

8. Physical illness of father: Participant remembers one or more diagnosed physical illnesses of father that were severe enough to be disruptive of family life.

9. Mental illness of mother: Participant remembers one or more diagnosed mental illnesses of mother that were severe enough to be disruptive of family life.

10. Mental illness of father: Participant remembers one or more diagnosed mental illnesses of father that were severe enough to be disruptive of family life.

11. Poverty or financial reversal: Participant remembers a characteristic insufficiency of funds for vital goods, such as food, clothing, lodging, or essential transportation, or some family reversal that produced such insufficiency where there was enough money before.

12. Household moves: Participant remembers a frequency of household moves that was disruptive in one or more ways.

13. School transfers: Participant remembers a frequency of school transfers that was disruptive in one or more ways.

14. Loss of sibling: Participant remembers disruption attributable to losing a sibling through death, family breakup, or institutionalization.

15. Loss of a good friend: Participant remembers disruption attributable to losing a good friend through death, household move, family breakup, or institutionalization.

16. Other: Scorer must specify.

Compensatory family standards. The crux of this hypothesis was that the participant experienced pressure toward compensatory effort by direct appeals from parents, who felt that this particular child could transcend familial disruptions through adherence to high standards. Thus, the relevant scoring categories and criteria were as follows:

1. Transcendence of parental limitation: Participant remembers parents stating their inability to function adequately and remembers such state-

ments as being made in a fashion that encouraged the participant toward compensatory effort.

2. *Admiration toward child:* Participant remembers one or both parents admiring him or her for behaviors that brought recognition or improved the quality of family life.

3. *Appeal to the child for help:* Participant remembers one or both parents appealing to him or her for help with family difficulties.

4. *Compensatory work:* Participant remembers that because of the family's difficulties, he or she had to work in order to get needs met.

5. *Other:* Scorer must specify.

Parental stimulation. The third hypothesis concerned family activities that could stimulate the child's sense of possibility through exposure to a breadth of experience and encouragement—to see such experiences as potentiality rather than chaos. Hence, the relevant scoring categories and criteria were as follows:

1. *Fantasy games:* Participant remembers that it was characteristic for family to play games that stimulated or required imagination, such as storytelling or constructing things.

2. *Educational trips:* Participant remembers that it was characteristic for family to take trips, whether long or short, that aimed at increasing information and learning by encountering novelty.

3. *Signs of upward mobility:* Participant remembers family as characteristically striving to improve social, financial, or educational status.

4. *Educational experiences:* Participant remembers a characteristic family emphasis on learning from day-to-day experiences, by interpreting and judging them rather than merely having them.

5. *Encouragement of reading:* Participant remembers being regularly encouraged to read, by direct instruction or by example.

6. *Other:* Scorer must specify.

Compensatory self-perception. The fourth hypothesis concerned evidence that the participant's interpretation of stresses led to compensatory effort. What was important here was that, through experienced stresses and associated family standards, the participant actually became more self-reflective, appreciative of compensatory possibilities, inclined toward serious relationships, and cognizant of how the past, present, and future interconnect meaningfully. Accordingly, the relevant scoring categories and criteria were as follows:

1. *Social isolation:* Participant remembers feeling different from others as a function of experienced stresses and family standards.

2. *Saliency of meaning and growth:* Participant remembers feeling a deepened sense of life's meaning and his or her psychosocial growth because of experienced stresses and family standards.

3. *Time link:* Participant remembers having an explicit sense of the tie between past, present, and future events because of experienced stresses and family standards.

4. *Chosen status:* Participant remembers feeling like the person who would redeem the family through accomplishments.

5. *Reflective capacity:* Participant remembers having been rendered more thoughtful or self-reflective by the experience of stresses and family standards.

6. *Appreciation of friendship:* Participant remembers having become especially appreciative of friendships or relationships of trust and support inside or outside the family because of experienced stresses and family standards.

7. *Other:* Scorer must specify.

The general procedure for scoring was for the scorer to view the entire life review first, while being free to stop the tape and make notes whenever that seemed helpful. Then the scorer assigned a rating between 0 to 2 for each of categories relevant to the four hypothesized variables as outlined above. Scorers were free to review the videotape as often as they thought necessary in order to be sure of their scoring.

For purposes of determining interscorer agreement, 6 interviews were selected at random from the 27 available. The particulars of the scoring system were discussed in as much detail as necessary with another scorer, who was also sophisticated in psychology. This other scorer worked independently from Deborah M. Khoshaba in actually scoring the protocols. On all of the six protocols, each scoring category forming part of a hypothesized variable was scored from 0 to 2 by each scorer. For each scoring category, the six pairs of scores were correlated, with the resulting estimates of interscorer agreement in an adequate range from .86 to .97.

Results

Each of the four variables of this study concerned an aspect of early experience hy-

pothesized to influence the level of personality hardiness in adulthood. In evaluating the internal consistency reliability of these variables, we obtained coefficient alphas of .73, .85, .93, and .88 for acute or chronic stresses, compensatory family standards, parental stimulation, and compensatory self-perception, respectively. As measured, these four variables appeared to have sufficient consistency to be considered further.

The first step was to determine the relationship of each of the proposed early experience variables with adult hardiness. Table 1 contrasts the mean values of each of the early experience variables in the high-hardiness and low-hardiness groups. Results of a one-way analysis of variance indicated that the stresses, compensatory family standards, and compensatory self-perception variables discriminated the groups in the expected direction at better than the .05 level of significance.

To understand the results better, the four early experience variables were intercorrelated (see Table 2). Stresses, compensatory family standards, and compensatory self-perception showed substantial intercorrelation, as would be expected if these variables participated in a joint development effect. However, the parental stimulation variable, uncorrelated to compensatory self-perception and compensatory family standards, actually showed an unexpected negative correlation with stresses.

The final step was a simultaneous regression using stresses, compensatory family

Table 2
Intercorrelations of Stresses, Parental Stimulation, Compensatory Self-Perception, and Compensatory Family Standard Variables (N = 27)

Variable	1	2	3	4
1. Stresses	—			
2. Parental stimulation	.34*	—		
3. Compensatory self-perception	.47**	.27	—	
4. Compensatory family standards	.56**	.01	.54**	—

* $p < .05$. ** $p < .01$.

standards, compensatory self-perception, and parental stimulation in the attempt to account for the dependent variable, high versus low hardiness. The value of this analysis was twofold. First, it automatically purified each early experience variable of the effects of the others, giving a clear estimate of its ability to discriminate the high-hardiness group from the low-hardiness group. Second, the analysis showed the combined effectiveness of these purified variables to discriminate the high-hardiness and low-hardiness groups.

The results of this simultaneous regression appear in Table 3. Consistent with previous analyses, the parental stimulation variable was not discriminative. What was new, however, is that when the stresses variable was purified of the others, it did not discriminate high-hardiness and low-hardiness groups. In contrast, the compensatory fam-

Table 1
Early Experience Variables as Predictors of Personality Hardiness

Variable	Mean score		F(1)	p
	High-hardiness group (n = 12)	Low-hardiness group (n = 15)		
Stresses	5.17	3.60	3.84	.02
Compensatory self-perception	3.00	0.80	2.60	.05
Parental stimulation	2.00	1.73	1.19	.75
Compensatory family standards	2.33	0.53	3.42	.03

Table 3

Multiple Regression of Stresses, Compensatory Family Standards, Compensatory Self-Perception, and Parental Stimulation as Predictors of Personality Hardiness (N = 27)

Variable	R^2	ΔR^2	β	$F(3, 26)$	p
Stresses	.05	.05	.22	1.27	.27
Compensatory family standards	.31	.27	.62	5.49	.01
Compensatory self-perception	.32	.01	.10	3.77	.01
Parental stimulation	.32	.00	.02	2.63	.06

ily standards variable was the major discriminator, followed by compensatory self-perception. It should be remembered that the scoring system for compensatory family standards and compensatory self-perception incorporated whatever stressful circumstances occurred in early experience. That fact was not changed by the statistical purification of variables inherent in simultaneous regression. Thus, this pattern of results was consistent with the notion that what discriminates high from low hardiness is not the mere fact of stressful circumstances but, rather, the compensatory reaction of the family in the form of standards and of the individual through interpretation of stresses.

Discussion

Taken together, the results of this study support the second and fourth hypotheses but not the first and third. These results suggest that it is not the mere fact of stressful circumstances in early life that contributes to the development of personality hardiness but, rather, when the family and the individual respond to such circumstances in a compensatory manner. Specifically, the family beleaguered by acute and chronic stresses must pin their hopes on one (or more) of the children to transcend the morass. This very likely involves attempts to convince the child of his or her special abilities and talents that will lead to strength and achievement. The child (or children) must accept this nomination by preparing for the compensatory role. Most likely, the child feels that life

is demanding a transcendent effort. This interpretation heightens the overall meaning of life for the youngster.

These early beginnings may mark one route by which people can emerge with the attitudes of commitment, control, and challenge that form hardiness. Far from being discouraged or overwhelmed by stressful circumstances in adulthood, the person having experienced the sort of early life just mentioned will regard the circumstances as vital and important (sense of commitment), as capable of being influenced through effort (sense of control), and as an occasion to grow through what is learned (sense of challenge). It is understandable that someone having transcended a stressful early life in the manner identified in this study would be able to turn the stresses of adulthood to advantage, resisting wellness breakdown and becoming more effective in the process.

The findings of this study are perhaps also relevant to the understanding of resilient or invulnerable children (Anthony & Cohler, 1987; Garmezy, 1986). Research on such children has thus far focused on demographic characteristics, concluding that children who come from intact, well-functioning families can survive such disadvantages as poverty and minority status with minimal decline in academic and social performance. The disadvantages qualify as acute and chronic stresses by the present definition. Perhaps what intact or well-functioning families do is provide for some or all of the children a set of compensatory standards that stimulate a compensatory self-perception that deepens the meaning of life for the

youngster. Furthermore, if data in studies of invulnerable children were available, they might show that the individual children within families are affected by the acute and chronic stresses of disadvantage differently, depending on whether or not they are chosen by their parents for the compensatory role.

One hypothesis of this study that received no empirical support concerned parental stimulation of cognitive functioning in the youngster by such means as encouraging reading, playing fantasy games, and taking trips. Early parental stimulation did not discriminate high from low hardiness in the adult participants. The parental stimulation variable negatively correlated with the stresses variable and did not correlate with the compensatory family standards and compensatory self-perception variables. It appears that parental stimulation was not a reaction to stressful circumstances. Indeed, stressful circumstances may have inhibited it, which suggests that parents stimulate their children at times when family life is good and there is little misfortune. In contrast, compensatory family standards and self-perceptions are ways of rendering family misfortune meaningful. If future research corroborates this study, that part of Maddi and Kobasa's (1984) theorizing about the development of hardiness emphasizing family stimulation may need reformulation.

The methodological limitations of this study indicate the need for additional research before definite conclusions are reached. A major limitation is the retrospective design in which adult participants with already formed hardiness levels reminisced about their early family experiences. It is possible, of course, that what this study treated as formative early experiences are, in reality, no more than another sort of reflection of high or low hardiness. Perhaps adults high in hardiness interpret their early years in terms of stresses that they transcended, though this may not be what actually happened. Nonetheless, the present study was a

justifiable first step. The next step, which is so much harder to take that it virtually required the first step to be promising, would be a longitudinal study that observes the relevant experiences of youngsters as they happen and determines by following these youngsters whether those early events predict adulthood hardiness levels.

Another methodological limitation of the present study dictates caution in generalizing the findings. After all, there were only 27 participants in the study, and all were men. Once again, as a first step, the study may be justifiable. But it remains for future research to determine the stability of the findings and whether they can be generalized to adults in other occupations and across gender lines. It may emerge that the present results mark one route to adulthood hardiness but that there are others. Nonetheless, the growing importance of the hardiness variable suggests some value for this first study of its developmental course.

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