

Do attachment and hardiness relate to each other and to mental health in real-life stress?

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ABSTRACT

This study examines the associations among attachment styles, hardiness, and mental health in intensive real-life stress. Four hundred and thirty-four young Israeli men, candidates for service in an elite combat unit, were assessed towards the end of a highly demanding screening process. Secure attachment style was positively associated with overall hardiness, commitment, and control, whereas avoidant and ambivalent attachment styles were negatively associated with these variables. In addition, a secure attachment style, and overall hardiness, commitment, and control were positively associated with mental health and well-being, and negatively associated with distress and general psychiatric symptomatology, whereas avoidant and ambivalent styles were inversely related to mental health and well-being and positively related to distress and general psychiatric symptomatology. Regression models testing the relationship between attachment, hardiness, and mental health suggest that both

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attachment and hardiness are predictors of mental health in real-life stress. Findings are discussed with respect to theories of both attachment and hardiness.

KEY WORDS: attachment • hardiness • stress

It is not the physical demands per se that make these military simulations so difficult. It is the stress that goes with the fact that you have no idea or say in what you are going to do next, and with whom to cooperate, and the feeling that the situation is bringing you to your very limits, both emotionally and physically.

This description was offered by one of the hundreds of young Israeli men who went through a real-life stressful event in a two-day selection process for an elite military unit.

In the search for a better understanding of the enormous variability in the effects of stress, one of the leading questions is which individual differences enable some people to handle stress better than others.

Based on the work of Bowlby (1969, 1982) and Ainsworth, Blehar, Waters, and Wall (1978), a considerable body of research has focused on individual differences in the organization of attachment behaviors and expectations in close relationships, leading to the development of a tripartite typology of secure, avoidant, and anxious-ambivalent styles (Hazan & Shaver, 1987). Several studies in adult samples have shown that an insecure attachment style is related to cognitive and emotional maladjustment. Avoidant and ambivalent people were found to be more anxious and hostile (Kobak & Sceery, 1988), and prone to loneliness (Hazan & Shaver, 1987), physical symptoms (Hazan & Shaver, 1990), and negative affect (Simpson, 1990) compared with their secure counterparts.

In accordance with attachment theory, individuals with different attachment styles were found to relate differently to themselves, to others, and to stressful situations. Ambivalent individuals were found to manifest more negative views of themselves compared with secure and avoidant individuals (Bartholomew & Horowitz, 1991; Collins & Read, 1990), to report less effective coping in stressful situations, and to appraise stress as more threatening and themselves as less capable to cope with it, compared with their secure peers (Mikulincer & Florian, 1995). Avoidant persons were found to rely less on their partners as a source of reassurance in anxiety-arousing situations, and to utilize more distancing coping and less support seeking than secure persons in stressful situations (Mikulincer & Florian, 1995). In addition, several studies have shown the beneficial effect of having a secure attachment style in times of stress. Mikulincer Florian, and Weller (1993) investigated the association between attachment style and distress among individuals who were exposed to Scud missile attacks during the 1991 Gulf War. Their findings indicated that a secure attachment style moderated the traumatic impact, whereas an ambivalent attachment

style predisposed individuals to higher levels of distress and made them more vulnerable in the face of adversity. Following this line of reasoning, Solomon, Ginzburg, Mikulincer, Neria, and Ohry (1998) examined the role of attachment style in the immediate and long-term adjustment of prisoners of war and found that secure individuals reported lower levels of suffering and helplessness, tended to employ active ways of coping, and exhibited better long-term adjustment than their insecure counterparts.

Recently, however, attachment theorists have suggested that although '... attachment theory captures important features of security provision across the life span, it doesn't exhaust them' (Waters & Cummings, 2000, p. 170) and pointed to the importance of examining the role of other resources in managing stress. In this regard, the construct of hardiness is particularly relevant, because it is theoretically defined as 'a resistance resource in the encounter with stressful life events' (Kobasa, Maddi, & Kahn, 1982, p. 169). According to Kobasa et al. (1982), hardiness is composed of three components: commitment, control, and challenge. A high sense of commitment to self-actualization allows people to hold values, goals, and priorities that enable them to judge any situation in the larger context, and in a way that enhances effective coping. Individuals with a strong sense of control are able to choose, independently, effective ways to cope with stressful situations, believing that they are powerful in times of stress. Finally, the role of challenge in one's hardiness derives from the notion that people who respond well to changes are better prepared to meet the unexpected. Furthermore, people with a sense of challenge see change as an opportunity for development and growth, rather than a threat (Kobasa et al., 1982). Hardiness has repeatedly been found to serve as a moderator of the impact of stress on physical and mental health (e.g., Gentry & Kobasa, 1984; Suls & Rittenhouse, 1987; Westman, 1990). In addition, hardiness has been shown to be inversely related to both depression and anxiety (e.g., Allred & Smith, 1989; Drory & Florian, 1991; Florian, Mikulincer, & Taubman, 1995; Funk & Houston, 1987; Rhodewalt & Zone, 1989), and positively related to well-being (Florian et al., 1995; Orr & Westman, 1990).

The current study examined the relations between attachment style, hardiness, and mental health in a stressful situation. The situation chosen for this is a unique one, in that it is a real-life event to which a small number of men are exposed: two days of a demanding selection process for an Israeli elite military unit. This experience consists of extreme conditions of psychological and physical demands and requires rapid adaptation within a short period.

The study had three goals. First, the relationship between attachment and hardiness was explored. Although theoretically the two concepts may seem independent of each other in that the first is an interpersonal concept (Bowlby, 1969, 1982), and the latter is a personality-driven concept (Kobasa et al., 1982), we would expect them to be related nonetheless. According to Bowlby (1980), secure attachment not only promotes interpersonal relations but also enhances coping skills and a sense of personal worth.

Previous research has validated this claim, revealing that, relative to their insecure counterparts, secure individuals have an enhanced sense of control and self-efficacy (Collins & Read, 1990), self-confidence in seeking help (Mikulincer et al., 1993), efficient coping with stressful exposure, and appraisal of stress as less threatening (Mikulincer & Florian, 1995). These resources may serve as the building blocks of hardy traits: a strong sense of control over life adversities and stress, high commitment to self-actualization, and the ability to appraise changes as challenges rather than threats in stressful situations. Based on attachment and hardiness theory and research, our first hypothesis was that individuals with different attachment styles will differ in their associations with hardiness. Specifically, secure attachment will be positively associated with hardiness, whereas an ambivalent style will be inversely associated with hardiness. The second hypothesis relates to avoidant attachment style. Because avoidant individuals are described as self-reliant (Bowlby, 1977), having a tendency to deny inner distress (Kobak & Sceery, 1988; Mikulincer, Florian, & Tolmatz, 1990), ignore negative emotions, affects, and memories (Mikulincer et al., 1990, 1993), and employ distancing and disengagement strategies in times of stress, we hypothesized that an avoidant style will be positively related to hardiness in general and to the control component in particular.

The second goal of the study was to examine the relationship between attachment styles and mental health. Secure individuals have been described as benefiting from an affirmative, constructive, and confident attitude (Bowlby, 1977; Kobak & Sceery, 1988; Mikulincer et al., 1993); better coping (Mikulincer & Florian, 1995, 1999; Solomon et al., 1998); less distress (Birnbaum, Orr, Mikulincer & Florian, 1997); and better mental health (Mikulincer & Florian, 1999; Solomon et al., 1998) than insecure individuals. On the basis of this theory and research, our third hypothesis was that a secure attachment style will be negatively associated with distress and psychiatric symptomatology, and positively with well-being, whereas an ambivalent style will be positively associated with distress and general psychiatric symptomatology and negatively associated with well-being.

The third goal of the study was to examine the relationship between hardiness and mental health in real-life stress. Based on the literature showing that hardiness mitigates the negative effects of stress on mental health (e.g., Allred & Smith, 1989; Drory & Florian, 1991; Florian et al., 1995; Funk & Houston, 1987; Rhodewalt & Zone, 1989), enhancing adjustment and well-being (Blaney & Ganellen, 1990; Hull, Van Treuren, & Vrnelli, 1987; Orr & Westman, 1990), we hypothesized that hardiness will be positively associated with well-being and negatively associated with distress and general psychiatric symptomatology. In addition, the current study also attempted to address former criticism relating to the effect of the challenge component of hardiness on mental health. Because this component was previously found to be weakly related to mental health (Florian et al., 1995; Hull et al., 1987), we aimed to examine whether this finding would be replicated when hardiness and mental health outcomes are measured under stressful circumstances, as suggested by Funk (1992). Finally, the fourth goal of the study

was to investigate whether attachment and hardiness contribute independently to the prediction of mental health outcomes.

Method

Participants

A total of 434 young adults participated in the study. Participants were candidates for service in an elite unit of the Israeli Defense Forces (IDF). All participants were 17-year-old single males, in their senior year of high school. According to the stringent criteria of the IDF early screening system, these persons were selected because they were physically and mentally healthy, intellectually capable, and highly motivated for service in elite combat units. These IDF small units are trained to carry out high-risk special operations. A two-day military simulation served as the setting in which candidates were required to cope with harsh physical demands such as sleep deprivation, continuous running, and carrying heavy loads. In addition, military commanders exposed the candidates to psychological stress in the form of extreme discipline, excessive competition, and constant evaluation by their peers.

Procedure

Permission for conducting the study was obtained from IDF authorities. Participants were informed that the study was not conducted by the military authorities, and about the voluntary nature of their participation in the study. In addition, they were assured that any information that they submitted would not be disclosed to the army authorities. All people approached agreed to participate in the study. Questionnaires were administered to the group towards the end of the second day of the screening process.

Materials

Attachment style. Attachment style was assessed via the questionnaire developed and validated for Israeli populations in Hebrew by Mikulincer and his colleagues (Mikulincer & Erev, 1991; Mikulincer et al., 1990). Participants received 15 statements, five for each attachment style based on Hazan and Shaver's (1987) tripartite typology of secure, avoidant, and ambivalent attachment styles. Participants were asked to state, on a 7-point scale ranging from *not at all* to *very much*, the extent to which each statement applied to them. Each subject received three scores, which were the mean of the items corresponding to each factor, and the attachment style was determined according to the highest score. The frequencies of attachment styles in the current sample were somewhat dissimilar to those found by both Hazan and Shaver (1987) in an American sample and in previous Israeli studies (Mikulincer & Erev, 1991, Mikulincer et al., 1990; Mikulincer & Nachshon, 1991). Eighty-six percent of the participants ($n = 374$) were classified as having a secure attachment style, 6% as having an avoidant attachment style ($n = 28$) and 7% as having an ambivalent attachment style ($n = 32$). This distribution reflects an overrepresentation of the secure attachment style (somewhat similar to that found by Mikulincer & Florian, 1995, in a sample of young Israeli soldiers), due primarily to the rigorous preliminary screening by the IDF. The scale was found to be internally consistent and had high

construct and predictive validity in previous samples (Mikulincer & Erev, 1991; Mikulincer et al., 1990; Mikulincer & Nachshon, 1991). Cronbach's alpha values for the three factors in the current sample were: secure .47, avoidant .54, and ambivalent .60.

Hardiness. Participants completed the Hebrew version (Drory & Florian, 1991) of the third generation Hardiness Scale (Personal View Scale; Maddi, 1987). This self-report questionnaire is composed of 50 items, measuring the hardiness construct as a composite of three moderately interrelated components: commitment (e.g., I am looking forward to my new job), control (e.g., good planning might prevent future problems), and challenge (e.g., ordinary work is boring). Using a 5-point Likert scale ranging from 0 (*not at all true*) to 4 (*completely true*), participants indicated how much they endorsed each item. On this basis a general hardiness score and specific commitment, control, and challenge scores were computed as the mean of the items corresponding to each scale, with higher scores reflecting higher levels of hardiness. Previous studies have found adequate internal consistency for the total scale and the three hardiness subscales (Drory & Florian, 1991; Maddi, 1987; Okun, Zautra, & Robinson, 1988; Williams, Wiebe, & Smith, 1992). In the present study, the Hebrew version of this scale had Cronbach's alphas of .74 for the total of 50 items, .59 for the scale's commitment items, .64 for the control items, and .60 for the challenge items.

Mental Health Inventory (MHI; Veit & Ware, 1983). This multidimensional general questionnaire was constructed from the Rand Health Insurance Study (Veit & Ware, 1983) of adult health status and translated to Hebrew by Florian and Drory (1990). It comprises 38 items, of which 14 are related to well-being and 24 to distress. Participants are asked to rate on a 6-point response scale, ranging from complete confirmation (*all the time*) to complete rejection (*never*), the extent to which the item reflects their emotional reactions over the past two weeks. Two factors were generated from this questionnaire: well-being and distress. Scores on the mental health general score and well-being and distress factors were calculated as the means of the items belonging to each factor. Cronbach's alphas were .91 for the mental health general score, .87 for well-being, and .88 for distress.

SCL-90. This questionnaire is a self-report measure that addresses 90 psychiatric symptoms during the two weeks prior to assessment (R.L. Derogatis, 1977). Participants were asked to rate on a 5-point scale the extent to which they experienced each symptom during the preceding two weeks. A Global Severity Index (GSI) score, which reflects the clinical severity of all symptoms, was computed by averaging each participant's answers to the 90 symptoms, with higher GSI scores reflecting greater severity of psychiatric symptoms. Consistent with findings from previous studies (L. Derogatis & Clearly, 1977; L. Derogatis, Rickles, & Rock, 1976), Cronbach's alpha in this sample was .96 for the GSI score.

Data analysis

The associations between attachment, hardiness, and mental health were examined via a series of bivariate correlations (due to the large disparity in cell sizes for the three attachment styles in this sample, the use of analysis of variance was

inappropriate). Tests of significance were evaluated using the Bonferroni correction. In addition, a series of ordinary least squares (OLS) regressions were conducted to assess the contribution of attachment and hardiness to the variance in the participants' mental health outcomes (mental health general score, well-being, distress, and general psychiatric symptomatology).

Results

Correlational analyses

First, the associations between attachment styles and hardiness were examined. Table 1 shows the bivariate correlations along with means and standard deviations for the three attachment styles scores (secure, avoidant, and ambivalent) with the four hardiness scores (general score, commitment, control, and challenge). Using a Bonferroni corrected significance level of $p < .004$, a significant association was found within the attachment components. Specifically, secure attachment was negatively related to the avoidant and ambivalent attachment styles, whereas an avoidant style was positively related to the ambivalent style. In addition, significant associations were found between the attachment variables and three of the hardiness scores: hardiness's general score, the commitment score, and the control score. Secure attachment was positively associated with the hardiness general score, commitment, and control, whereas avoidant and ambivalent attachment styles were negatively related to the hardiness general score, commitment, and control. Notably, no significant relationship was found between the challenge score and the attachment variables.

Second, the associations between attachment styles and mental health variables were examined. Table 2 shows the bivariate correlations along with means and standard deviations for the three attachment scores (secure, avoidant, and ambivalent) with the four mental health scores (mental health general score, well-being, distress, and general psychiatric symptomatology). Using a Bonferroni corrected significance level of $p < .004$, a significant association was found between the attachment variables and the mental health scores. A secure attachment style was negatively related to distress and general psychiatric symptomatology and positively related to well-being and the mental health general score. Avoidant and ambivalent attachment styles were positively related to general psychiatric symptomatology and distress and negatively related to well-being and mental health.

Third, the associations between hardiness and the mental health scores were examined. Table 3 shows the bivariate correlations for the four hardiness scores (hardiness general score, commitment, control, and challenge) with the four mental health scores (mental health general score, well-being, distress, and general psychiatric symptomatology). Using a Bonferroni corrected significance level of $p < .002$, a significant association was found between the hardiness general score, commitment, and control variables and the mental health general score, distress, and general psychiatric symptomatology. Specifically, the hardiness general score, commitment, and control were positively associated with mental health and negatively associated with distress and general psychiatric symptomatology. Well-being was significantly correlated only with the control component of hardiness. The challenge component of hardiness showed no significant association with mental health.

TABLE 1
Correlations between attachment and hardiness variables

Variable	Secure	Avoidant	Ambivalent	Hardiness G	Commitment	Control	Challenge
Secure	—						
Avoidant		-.39***	-.30***	.23***	.24***	.29***	.00
Ambivalent		—	.41***	-.26***	-.24***	-.26***	-.08
Hardiness G			—	-.34***	-.29***	-.34***	-.13**
Commitment				—	.77***	.74***	.65***
Control					—	.54***	.20***
Challenge						—	.11*
M	24.88	14.06	14.71	106.85	37.51	39.61	29.73
SD	4.50	4.21	4.03	9.28	3.83	4.34	4.82

Note. Hardiness G, General hardiness score.

*p < .05; **p < .01; ***p < .001.

TABLE 2
Correlations between attachment and mental health variables

Variable	Secure	Avoidant	Ambivalent	GSI	Well-being	Distress	Mental health
Secure	—	-.39***	-.30***	-.27***	.22***	-.41***	.42***
Avoidant		—	.41***	.30***	-.28***	.37***	-.37***
Ambivalent			—	.39***	-.25***	.38***	-.39***
GSI				—	-.31***	.59***	-.57***
Well-being					—	.45***	.49***
Distress						—	-.89***
Mental health							—
<i>M</i>	24.88	14.06	14.71	1.26	2.44	47.63	185.31
<i>SD</i>	4.50	4.21	4.03	0.26	0.83	9.99	16.57

Note. GSI, Global Severity Index of the Symptom Checklist 90-R.

* $p < .05$; ** $p < .01$; *** $p < .001$

TABLE 3
Correlations between hardiness and mental health variables

Variable	Hardiness G	Commitment	Control	Challenge
Mental health	.36***	.35***	.39***	.06
Well-being	.16**	.14**	.18***	.03
Distress	-.34***	-.34***	-.38***	-.04
GSI	-.36***	-.35***	-.39***	-.09*

Note. Hardiness G, General hardiness score.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Tests of the relationship between attachment, hardiness and mental health

We conducted four OLS regression analyses to evaluate the relationship between the three attachment styles and the hardiness commitment and control components with the four mental health outcomes (the challenge component was not included due to the nonsignificant associations with mental health scores). The results are presented in Table 4.

This model significantly predicted the four mental health outcomes. For the mental health global score, the model explained 30% of the variance. The partial coefficients for the three attachment styles and two hardiness variables were significant in the expected directions. Secure attachment, commitment, and control were positively associated with mental health, whereas avoidant and ambivalent attachment styles were negatively associated with mental health. For well-being, the model explained 9% of the variance. However, only the partial coefficient of avoidant attachment was significant in the expected direction; avoidant attachment was negatively associated with well-being.

The model explained 29 and 24% of the variance in distress and general psychiatric symptomatology, respectively. The partial coefficients for the three attachment styles and two hardiness variables were significant in the expected directions for distress. Secure attachment, commitment, and control were negatively associated with distress, whereas avoidant and ambivalent attachment styles were positively associated with distress. The partial coefficients for avoidant and ambivalent attachment styles were also positively associated with general psychiatric symptomatology, whereas commitment and control were negatively associated with psychiatric symptomatology.

Discussion

This study has a number of key findings with regard to the associations among attachment, hardiness, and mental health. Generally, the findings on the relationship between attachment and hardiness provided support for our first hypothesis. Specifically, a secure attachment style was found to be positively associated with hardiness, whereas avoidant and ambivalent styles were found to be negatively related to hardiness. These findings are consistent with previous studies that described secure persons as having a

TABLE 4
Regression analyses testing model of attachment and hardiness in relationship to mental health

Predicted outcome: Mental Health Global Score			
Model	$R = .55$	$R^2 = .30$	$F(5,433) = 36.59, p < .001$
Predictors	B	t	p
<i>Attachment</i>			
Secure	.20	4.40	<.001
Avoidant	-.15	-3.24	.001
Ambivalent	-.15	-3.21	.001
<i>Hardiness</i>			
Commitment	.12	2.53	.01
Control	.19	3.86	<.001
Predicted outcome: Well-being			
Model	$R = .30$	$R^2 = .09$	$F(5,433) = 8.34, p < .001$
Predictors	B	t	p
<i>Attachment</i>			
Secure	.05	1.04	.30
Avoidant	-.18	-3.49	.001
Ambivalent	-.07	-1.38	.17
<i>Hardiness</i>			
Commitment	.02	0.41	.69
Control	.08	1.47	.14
Predicted outcome: Distress			
Model	$R = .53$	$R^2 = .29$	$F(5,433) = 34.23, p < .001$
Predictors	B	t	p
<i>Attachment</i>			
Secure	-.18	-3.92	<.001
Avoidant	.16	3.48	.001
Ambivalent	.15	3.24	.001
<i>Hardiness</i>			
Commitment	-.12	-2.36	.02
Control	-.19	-3.69	<.001
Predicted outcome: General Psychiatric Symptomatology			
Model	$R = .49$	$R^2 = .24$	$F(5,433) = 26.20, p < .001$
Predictors	B	t	p
<i>Attachment</i>			
Secure	-.06	-1.283	.20
Avoidant	.12	2.37	.02
Ambivalent	.23	4.78	.001
<i>Hardiness</i>			
Commitment	-.10	-1.99	.05
Control	-.19	-3.61	<.001

strong sense of self-efficacy (Collins & Read, 1990) and high confidence in being able to rely on help from others (Birnbaum et al., 1997; Mikulincer et al., 1993; Mikulincer & Florian, 1999). The findings underscore the enhanced abilities of secure individuals to manage stress effectively, compared with their insecure counterparts.

Unexpectedly, our second hypothesis, that avoidant attachment style will be positively associated with hardiness, especially with the control component, was not supported. Instead, an avoidant style was similar to an ambivalent style in being negatively associated with hardiness and its components. The negative association between an avoidant attachment style and hardiness might be explained by the absence of efficient mechanisms to manage real-life stress, as suggested by previous studies (e.g., Mikulincer & Florian, 1995; Mikulincer et al., 1993).

The findings on the relationship between attachment style and mental health generally supported our third hypothesis. As expected, a secure attachment style was positively related to the general mental health score and to well-being and negatively related to general psychiatric symptomatology and distress. These findings are consistent with previous studies (Brennan, Shaver, & Tobey, 1991; Hazan & Shaver, 1987; Kobak & Sceery, 1988; Mikulincer & Florian, 1995; Solomon et al., 1998; Wagner & Tangney, 1991) that found that secure persons reported better mental health than insecure persons. Interestingly, as with an ambivalent attachment style, an avoidant style was positively related to psychiatric symptomatology and to distress. Our findings differ from those of previous studies that suggested that avoidant individuals have better abilities than ambivalent individuals to reduce distress (Kobak & Sceery, 1988; Mikulincer et al., 1990). The finding does not support the hypothesis that avoidant people would show higher resistance to stress than ambivalent persons, indicating that avoidant and ambivalent attachment styles may predispose persons to high levels of distress, making them more vulnerable in time of stress. These findings confirmed Bowlby's (1980) view that secure individuals are more competent in handling stress and distress than both avoidant and ambivalent individuals.

As expected, hardiness was positively related to mental health and well-being and negatively related to distress and psychiatric symptomatology. This finding is consistent with previous studies (Allred & Smith, 1989; Blaney & Ganellen, 1990; Drory & Florian, 1991; Florian et al., 1995; Funk & Houston, 1987; Hull et al., 1987; Orr & Westman, 1990; Rhodewalt & Zone, 1989), lending additional support to the theory that hardy persons are better able to manage stress and to have better outcomes following exposure to stress than non-hardy persons.

Although both hardiness components of commitment and control were found to be related to attachment styles and mental health, challenge was found to have no significant associations with either attachment styles or any of the mental health variables. These findings add to the criticism that the contribution of challenge to the construct of hardiness is minimal (Florian et al., 1995; Hull et al., 1987), and support Hull et al.'s (1987)

suggestion that the challenge component should be removed from the hardiness construct. This consistent pattern with regard to the challenge component led us to its exclusion from the regression analysis testing the relationships among attachment, hardiness, and the mental health outcomes.

The results of the regression analyses indicate that attachment style and hardiness independently contribute to mental health outcomes. However, the strength and significance of these associations depend on the outcome examined. The three attachment styles and hardiness commitment and control each significantly contributed to the variance in the mental health global score and in overall distress. Only avoidant and ambivalent attachment styles and commitment and control significantly predicted general psychiatric symptomatology, whereas only the avoidant attachment style significantly predicted well-being. The different findings by outcome examined provide further support that hardiness and attachment are distinct constructs with specific and differing relationships with mental health outcomes. For example, secure attachment was not significantly protective against general psychiatric symptomatology in real-life stress, but hardiness commitment and control were protective. In contrast, whereas hardiness was unrelated to well-being, an avoidant style was found to put persons at risk for having lower levels of well-being in real-life stress.

The findings need to be understood within the limitations of the current study. Unfortunately, the internal consistency of the attachment and hardiness scales was lower than those found in previous samples. This relatively low internal consistency would be expected to reduce any 'true' association between attachment and hardiness and the mental health outcomes. In addition, there is the possibility that social desirability played a role in our findings. The elevated prevalence of a secure attachment styles in this sample may reflect participants' desires to succeed in their training and to be accepted. Social desirability would also have resulted in the over-reporting of hardiness and the under-reporting of distress and psychopathology, thus compromising the validity of our findings. Finally, owing to the selection process of the candidates, these findings cannot be generalized to other Israeli young adults or to the general population as a whole.

Despite these limitations, this study provides important information on the roles of attachment style and hardiness in the management of real-life stress. Although both are known to be stress mediators, they were previously examined only independently. The relatively moderate associations between attachment styles and hardiness, and their ability to independently predict mental health suggest that they are independent constructs with differing relationships to mental health. In addition, the fact that the participant's reports were obtained during the exposure to stress reduced some of the retrospective design limitations of former studies, providing stronger evidence that attachment style and hardiness mediate the impact of real-life stress on mental health.

REFERENCES

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
- Allred, K. D., & Smith, T. W. (1989). The hardy personality: Cognitive and physiological responses to evaluative threat. *Journal of Personality and Social Psychology*, *56*, 257–266.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*, 226–244.
- Birnbaum, G. E., Orr, I., Mikulincer, M., & Florian, V. (1997). When marriage breaks up—Does attachment style contribute to coping and mental health? *Journal of Social and Personal Relationships*, *14*, 643–654.
- Blaney, P. H., & Ganellen, R. J. (1990). Hardiness and social support. In I. G. Sarason, B. Sarason, & G. Pierce (Eds.), *Social support: An interactional view* (pp. 297–318). New York: Wiley.
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1977). *The making and breaking of affectional bonds*. London: Tavistock.
- Bowlby, J. (1980). *Attachment and Loss: Vol. 3. Loss*. New York: Basic Books.
- Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*, 664–678.
- Brennan, K. A., Shaver, P. R., & Tobey, A. E. (1991). Attachment styles, gender, and parental problem drinking. *Journal of Social and Personal Relationships*, *8*, 451–466.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, *58*, 644–663.
- Derogatis, L., & Clearly, P. (1977). A confirmation of the dimensional structure of the SCL-90: A study in construct validity. *Journal of Clinical Psychology*, *33*, 981–989.
- Derogatis, L., Rickles, H., & Rock, A. (1976). SCL-90 and the MMPI: A step in the validity of a new self report scale. *British Journal of Psychiatry*, *128*, 280–289.
- Derogatis, R. L. (1977). *The SCL-90 Manual F: Scoring, administration, and procedures for the SCL-90*. Baltimore: The Johns Hopkins University, School of Medicine, Clinical Psychometrics Unit.
- Drory, Y., & Florian, V. (1991). Long-term psychosocial adjustment to coronary artery disease. *Archives of Physical Medicine and Rehabilitation*, *72*, 326–331.
- Florian, V., & Drory, Y. (1990). The Mental Health Inventory: Psychometric characteristics and normative data from an Israeli population. *Psychologia*, *2*, 26–35.
- Florian, V., Mikulincer, M., & Taubman, O. (1995). Does hardiness contribute to mental health during a stressful real-life situation? The role of appraisal and coping. *Journal of Personality and Social Psychology*, *68*, 687–695.
- Funk, S. C. (1992). Hardiness: A review of theory and research. *Health Psychology*, *11*, 335–345.
- Funk, S. C., & Houston, B. K. (1987). A critical analysis of the Hardiness Scale's validity and utility. *Journal of Personality and Social Psychology*, *53*, 572–578.
- Gentry, W. D., & Kobasa, S. C. (1984). Social and psychological resources mediating stress-illness relationships in humans. In W. D. Gentry (Ed.), *Handbook of behavioral medicine* (pp. 87–116). New York: Guilford Press.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*, 511–524.
- Hazan, C., & Shaver, P. R. (1990). Love and work: An attachment-theoretical perspective. *Journal of Personality and Social Psychology*, *59*, 270–280.
- Hull, J. G., Van Treuren, R. R., & Virnelli, S. (1987). Hardiness and health: A critique and alternative approach. *Journal of Personality and Social Psychology*, *53*, 518–530.
- Kobak, R. R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. *Child Development*, *59*, 135–146.

- Kobasa, S. C., Maddi, S. R., & Kahn, S. (1982). Hardiness and health: A prospective study. *Journal of Personality and Social Psychology, 42*, 168–177.
- Maddi, S. R. (1987). Hardiness training at Bell Telephone. In J. Optaz (Ed.), *Health promotion evaluation* (pp. 121–158). Stephens Point, WI: Natural Wellness.
- Mikulincer, M., & Erev, I. (1991). Attachment styles and the structure of romantic love. *British Journal of Social Psychology, 30*, 273–291.
- Mikulincer, M., & Florian, V. (1995). Appraisal of and coping with a real-life stressful situation: The contribution of attachment styles. *Personality and Social Psychology Bulletin, 21*, 406–414.
- Mikulincer, M., & Florian, V. (1999). Maternal–fetal bonding, coping strategies, and mental health during pregnancy: The contribution of attachment styles. *Journal of Social and Clinical Psychology, 18*, 255–276.
- Mikulincer, M., & Florian, V., & Tolmatz, R. (1990). Attachment styles and the fear of personal death: A case study of affect regulation. *Journal of Personality and Social Psychology, 30*, 273–280.
- Mikulincer, M., Florian, V., & Weller, A. (1993). Attachment styles, coping strategies, and post-traumatic psychological distress: The impact of the Gulf-War in Israel. *Journal of Personality and Social Psychology, 64*, 817–826.
- Mikulincer, M., & Nachshon, O. (1991). Attachment styles and patterns of self-disclosure. *Journal of Personality and Social Psychology, 61*, 273–280.
- Okun, M. A., Zautra, A. J., & Robinson, S. E. (1988). Hardiness and health among women with rheumatoid arthritis. *Personality and Individual Differences, 9*, 101–107.
- Orr, E., & Westman, M. (1990). Hardiness as a stress moderator: A review. In M. Rosenbaum (Ed.), *Learned resourcefulness: On coping skills, self-control, and adaptive behavior* (pp. 64–94). New York: Springer.
- Rhodewalt, F., & Zone, J. B. (1989). Appraisal of life change, depression, and illness in hardy and nonhardy women. *Journal of Personality and Social Psychology, 56*, 81–88.
- Simpson, J. (1990). The influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology, 59*, 971–980.
- Solomon, Z., Ginzburg, K., Mikulincer, M., Neria, Y., & Ohry, A. (1998). Coping with war captivity: The role of attachment style. *European Journal of Personality, 12*, 271–285.
- Suls, J., & Rittenhouse, J. D. (1987). Personality and health: An introduction. *Journal of Personality, 55*, 155–167.
- Veit, C. T., & Ware, J. E. (1983). The structure of psychological stress and well-being in general populations. *Journal of Consulting and Clinical Psychology, 51*, 730–742.
- Wagner, P. E., & Tangney, J. P. (1991). *Affective style, aspects of the self, and psychological symptoms*. Unpublished manuscript, George Mason University.
- Waters, E., & Cummings, E. M. (2000). A secure base from which to explore close relationships. *Child Development, 71*, 164–172.
- Westman, M. (1990). The relationship between stress and performance: The moderating effects of hardiness. *Human Performance, 3*, 141–155.
- Williams, P. G., Wiebe, D. J., & Smith, T. W. (1992). Coping processes as mediators of the relationship between hardiness and health. *Journal of Behavioral Medicine, 15*, 237–255.