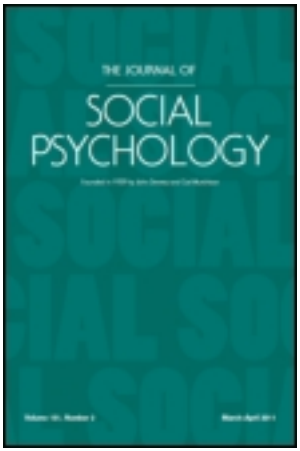

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Psychological Predictors of Coping Responses Among Greek Basketball Referees

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Psychological Predictors of Coping Responses Among Greek Basketball Referees

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ABSTRACT. The authors examined the effects of situational appraisals (perceived control and intensity), coping styles (monitoring and blunting), and personal dispositions (optimism and self-esteem) on the approach and avoidance coping responses of skilled Greek basketball referees (N = 162) and the consistency of their responses following 3 game-related stressful situations. In an effort to clarify the variables involved in coping and to consider the theoretical principles both within and beyond sports, the authors replicated an earlier study among Australian basketball referees (A. Kaissidis-Rodafinos, M. H. Anshel, & A. Porter, 1997). The results were equivocal: The Greek referees were not consistent in using avoidance and approach coping responses across situations. Approach coping was more predictable than avoidance coping in accounting for both situational and personal variables.

SPORTS OFFICIALS, compared with other sports participants such as athletes and coaches, have received attention from researchers (Kaissidis-Rodafinos, Anshel, & Porter, 1997; Kaissidis-Rodafinos, Anshel, & Sideridis, 1998). Findings from the preceding studies indicated that during games, sports referees often experience various forms of acute (short-term, time-limited) stress, the intensity of which varies as a function of age and culture (Kaissidis & Anshel, 1993). Other researchers have demonstrated that the inability to deal effectively with

The battery of tests used in this study is available from the first author.

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acute stress can be detrimental to both the performance and the personal satisfaction of sports participants (Anshel, 1990; Anshel, Brown, & Brown, 1993; Mace & Carroll, 1986). In view of such findings, several researchers (Aldwin, 1994; Krohne, 1988; Roth & Cohen, 1986) have repeatedly stressed the need for situation- and profession-specific approaches in the study of stress and coping.

Coping with stress, usually defined as the process by which an individual consciously responds to stressful situations, is affected by both situational and personal variables (Carver, Scheier, & Weintraub, 1989; Parkes, 1986). Situational variables refer to the objective features, or characteristics (i.e., the type, controllability, chronicity, and severity), of the stressful event (McCrae, 1992). Personal variables refer to dispositions that reflect the individual differences in a person's tendency to use certain types of coping strategies in situations that are perceived as stressful.

Situations and events are not inherently stressful; rather, the individual's interpretation or cognitive appraisal of the situation causes stress. According to Lazarus and Folkman (1984), cognitive appraisal, the first stage of the coping process, forms the link between the stressor and the individual's coping response. Terry (1991) has argued that the individual's perception of the stressful situation (i.e., situational appraisal) is more important than the situation's objective characteristics.

One popular framework within which researchers in sport psychology have studied coping is by the distinction between *approach* and *avoidance* coping responses (Anshel, 1996; Anshel & Kaissidis, 1997; Kaissidis-Rodafinos et al., 1997; Krohne, 1993; Krohne & Hindel, 1988). An approach coping style refers to behavioral, cognitive, and emotional activity directed toward the threat, whereas an avoidance coping style refers to similar activity directed away from the threat (Roth & Cohen, 1986). Another common framework in nonsport literature is the distinction between *monitoring* and *blunting* coping styles (Miller, 1987, 1990). Monitoring refers to the extent to which an individual is alert for and sensitized to threat-relevant information, whereas blunting reflects a person's preference for distraction and avoidance of information related to the source of stress.

In nonsport research (e.g., Billingsley, Waehler, & Hardin, 1993), a personal disposition that has received only scant attention in association with the coping process is *optimism,* the tendency to expect positive outcomes and always to "look for the silver lining in every cloud." In the general psychology literature, optimism has been found to be negatively related to anxiety (Lee, Ashford, & Jamieson, 1993) and positively related to problem-focused coping strategies (Amirkhan, Risinger, & Swickert, 1995; Strutton & Lumpkin, 1992), whereas pessimism has been linked to emotion-focused coping (Strutton & Lumpkin).

The selection of coping strategy may also be influenced by the individual's self-esteem. Self-esteem has been found to be negatively related to avoidance-focused coping (McCall & Struthers, 1994), to be positively related to active strategies in dealing with problems (Keller, 1987), and to mediate perceived stress (Pearlin & Schooler, 1978). In addition, substantial research has indicated

that high self-esteem is characteristic of elite sports performers (Dwyer & Carron, 1986; Hoffman, 1986; Mahoney, 1989). Thus, self-esteem may be a resource for effectively dealing with the intensive and acute stress in sports refereeing.

The question of whether situational or personal variables are more influential in sports officials' selections of coping responses remains largely unexplored in the sport psychology literature. Three models—trait, situational, and interactional—have formed the conceptual framework for examining this issue in general psychology (Aldwin, 1994; Krohne, 1996). Supporters of the trait model argue that individuals tend to exhibit stable and consistent coping responses across situations and over time because of the influence of personal dispositions (Krohne, 1988; Miller, 1987, 1990; Roth & Cohen, 1986). Proponents of the situational, or mediating, model assume that situational characteristics are the primary predictors of coping strategies (Singer & Davidson, 1991; Terry, 1991, 1994). Finally, the interactive model suggests that coping is a result of the transactions between personal dispositions and situational appraisals (Lazarus & Folkman, 1984). Research evidence regarding the importance of personal versus situational variables as determinants of coping behavior has been equivocal.

In sport psychology, the results of a rare examination of the consistency of coping strategies among Australian basketball referees (Kaissidis-Rodafinos et al., 1997) indicated the consistent use of approach and avoidance coping responses across three game-related situations involving acute stress. The prediction of coping responses on the bases of personal and situational variables was moderate and partially dependent on the order in which each set of variables was entered in the regression equation. Thus, prediction of coping responses on the foregoing bases did not strongly support any of the proposed models of coping. It was also evident that the basketball officials used more avoidance strategies than approach strategies for all three stressful situations. Finally, perceived stress was positively correlated with approach coping strategies and negatively associated with avoidance coping strategies. The foregoing findings suggest that individual differences existed in perceptions of stress and of controllability (i.e., situational appraisals) as well as in coping styles among the skilled basketball referees who participated in the study.

Researchers have argued for the innumerable theoretical and practical benefits of comparative, cross-cultural studies (Duda & Allison, 1990). This type of research has been well established in the general psychology literature, illustrating cross-cultural differences both in cognitive and behavioral domains and in personality characteristics (see also Kaissidis-Rodafinos, Anshel, & Sideridis, 1998). However, cross-cultural research is notably absent in regard to coping in sports. Such studies could have direct implications for the development of stress management programs.

In the present study, therefore, we aimed to clarify the variables involved in coping and to consider the theoretical principles both within and beyond sports by replicating the earlier study among Australian basketball referees (Kaissidis-

Rodafinos et al., 1997). Specifically, we evaluated the extent to which skilled Greek basketball referees exhibited consistent (i.e., preferred) coping responses following three highly stressful game-related situations. In addition, we examined the degree to which personal dispositions (i.e., monitoring style vs. blunting style, optimism, and self-esteem) and situational appraisals (i.e., perceived stress and perceived control) predicted the participants' coping responses.

Method

Participants

At their annual national referee conference in Olympia, Greece, officials of the Greek Basketball Referees Association administered psychological inventories (completed anonymously) to 241 certified sports referees. A total of 162 referees (68%) returned the surveys. All referees participated in national divisions—that is, in organized, competitive basketball games at the intermediate or the advanced level, for which both referees and players receive remuneration. The respondents (age range = 19–47 years; $M = 33.9$, $SD = 5.2$) were experienced at officiating (mean years of service = 8.9, $SD = 3.8$).

Materials

The battery of inventories in the present study consisted of the Greek translation of the English versions used for the Australian referees (Kaissidis-Rodafinos et al., 1997), with the addition of two scales measuring optimism and self-esteem. To ensure that the Greek versions were conceptually equivalent to the English versions, bilingual speakers translated the inventories back into English, following the procedure suggested by Berry (1969). All basic principles of linguistic differences, similarity of content, and functionality of the surveys were followed. In the survey, the participants were instructed, "Tell us how you respond to certain game-related stressful events that you have experienced." To promote candor and validity in the responses, we allowed the participants to complete all surveys anonymously.

The inventories included the Miller Behavioral Style Scale (MBSS; Miller, 1987), the Life Orientation Test (LOT; Scheier, Weintraub, & Carver, 1986), the Rosenberg Self-Esteem Scale (SES; Rosenberg, 1965), and the Coping Style Inventory (CSI; Kaissidis-Rodafinos et al., 1997). These instruments measured self-reports of monitoring and blunting coping styles; optimism; self-esteem; and perceived stress, perceived control, and the consistency of approach and avoidance coping responses, respectively. According to data in the present study, Cronbach's $\alpha = .65$ and .59 for the Monitoring and Blunting subscales of the MBSS, respectively, and .55 and .45 for the LOT and the SES, respectively.

CSI

The CSI (Kaissidis-Rodafinos et al., 1997) was developed to measure the individuals' appraisals (perceived stress intensity and perceived controllability) simultaneously with their coping responses (approach and avoidance) across a series of game-related situations involving acute stress, as suggested by Krohne (1988). Following Aldwin's (1994) and Cohen's (1987) recommendations to control for interindividual variations in the stressful situations from which individuals inferred their responses, we gave the participants in the present study standard scenarios of events commonly experienced by basketball officials during competitions. The three scenarios, designed to trigger coping responses, reflected experiences previously reported by basketball officials (Kaissidis & Anshel, 1993; Kaissidis-Rodafinos, Anshel, Tsorbatzoudis, & Sideridis, 1998): "making a mistake, such as a wrong call or a block versus charge" (hereinafter referred to as "making a mistake"), "experiencing aggressive reactions by coaches or players, such as insults or threats of physical abuse" ("aggressive reactions"), and "becoming aware of the presence of important others such as supervisors, media, parents, or friends" ("awareness of others"). In both studies (Kaissidis & Anshel; Kaissidis-Rodafinos, Anshel, Tsorbatzoudis, et al., 1998), these incidents had been found to be highly stressful for Greek and Australian basketball officials. Because the referees in the present study were asked to indicate how they actually responded to each of these stressful events, we assumed that their responses were based on actual, not hypothetical, situations and coping reactions.

Specifically, we used the first subscale of the CSI (Kaissidis-Rodafinos et al., 1997) to measure the degree of perceived stress and perceived control for each of the three types of stressors. On a Likert-type scale ranging from 1 (*not at all stressful*) to 5 (*very stressful*), the participants indicated the intensity of each of the three situational stressors they had previously experienced. To measure perceived control over each situation, we asked the participants to rate on a Likert-type scale (1 = *not at all true,* 5 = *very true*) the degree to which "I feel that usually I can do something about it."

The second subscale of the CSI assessed the referees' choices of approach or avoidance coping strategies during stressful game-related situations. Eight coping items (four reflecting approach strategies and four reflecting avoidance strategies) depicted the referees' typical responses to each of the stressful events. Examples of approach coping items were "I tend to review my actions, thinking about whether I was right or wrong on the call" and "I tend to think about it and get distracted or upset." Sample avoidance coping items were "I try to get on with the game as quickly as possible" and "I try to concentrate on what I have to do next."

We also asked the participants to recall each of the three stressful situations and then to indicate on a Likert-type scale (1 = *not at all true,* 5 = *very true*) the extent to which they used each strategy. In the present study, intra-item reliability was high on both measures ($\alpha = .90$ and .89 for the Approach and Avoidance

TABLE 1
Means and Standard Deviations (Unranked) of Ratings of Situational Appraisals, Coping Responses, and Personal Dispositions, by Stressor (N = 158)

	Stressor							
	Making a mistake		Aggression		Awareness of others		Pooled average	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Situational appraisals								
Perceived control	2.49	1.32	3.61	1.23	3.05	1.31	3.05	0.93
Perceived stress	2.69	0.91	2.62	1.05	2.57	1.09	2.64	0.74
Coping responses								
Avoidance	4.09	0.74	4.07	0.76	3.89	0.78	4.01	0.71
Approach	22.1	0.73	2.16	0.74	2.06	0.74	2.13	0.68
Coping styles								
Monitoring							11.59	2.72
Blunting							6.19	2.60
Personal dispositions								
Optimism							30.1	4.29
Self-esteem							8.72	1.24

Note. N varies because of missing values.

subscales, respectively). Similar reliabilities (α = .79 and .84 for the Approach and Avoidance subscales, respectively) were reported in the previous study (Kaissidis-Rodafinos et al., 1997).

Results

We based data analyses on three sets of variables: (a) personal dispositions (optimism, self-esteem, and monitoring vs. blunting coping style); (b) situational appraisals (perceived control and perceived stress intensity); and (c) coping responses (approach and avoidance). In the analyses, we examined the combined effects of personal dispositions and situational appraisals on approach and avoidance coping strategies across the three selected sources of acute stress (for all statistical comparisons, α = .05). For the means and standard deviations of the participants' subscale ratings for monitoring and blunting coping styles, perceived control, perceived stress, and approach and avoidance coping responses to the three stressful situations, see Table 1.

Correlations

Correlations between personal dispositions, situational appraisals, and approach and avoidance responses are summarized in Table 2. The findings indi-

TABLE 2
Correlations Between Situational Appraisals, Personal Dispositions, and Coping Responses Among Greek Basketball Referees (N = 158)

Variable	1	2	3	4	5	6	7	8
Personal dispositions								
1. Optimism	—							
2. Self-esteem	.28***	—						
3. Monitoring style	−.28***	.06	—					
4. Blunting style	−.03	−.08	.01	—				
Situational appraisals								
5. Perceived stress	−.37***	−.18*	.30***	−.04	—			
6. Perceived control	.04	.01	.21**	.03	.08	—		
Coping responses								
7. Avoidance	.09	−.01	−.08	.14	−.15	.18*	—	
8. Approach	−.31***	−.26***	.31***	.20*	.42***	.29***	−.05	—

Note. N varies because of missing values.
*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

cate several significant, albeit very moderate, relationships between these variables. Specifically, the use of approach responses was positively correlated with perceived stress, perceived control, and monitoring style, rs = .42, .29, and .31, respectively; and negatively correlated with optimism and self-esteem, rs = −.31 and −.26, respectively; all ps < .001. The measure of avoidance responses did not reveal strong correlations with any of the variables. These results suggest that the participants who tended to use more approach responses reported more perceived control over the situation, more perceived stress, less optimism, and less self-esteem.

In terms of situational appraisals, perceived controllability was unrelated to perceived stress, $r = .03$, $p > .05$. Perceived stress was negatively correlated with optimism, $r = -.37$, $p < .001$, and with self-esteem, $r = -.18$, $p < .05$; and positively correlated with monitoring, $r = .30$, $p < .001$. Perceived control was positively related to blunting, $r = .21$, $p < .01$. Intercorrelations among personal dispositions included the correlations between optimism and self-esteem, $r = .28$, and between optimism and monitoring, $r = -.28$, both ps < .001. Taken together, these data suggest that the referees with high scores for optimism and self-esteem reported less perceived stress, whereas the opposite was true for those with high scores for monitoring style, who reported higher perceived stress.

Approach and Avoidance Responses

To examine whether these Greek referees used approach and avoidance coping responses to a different extent, we calculated two-tailed paired t tests between

average approach and avoidance coping scores. The results revealed that the participants used significantly more avoidance responses than approach responses while officiating at games, $t(161) = -23.85$, $p < .001$. Subsequent paired t tests, with Bonferroni adjustments to minimize the chance of Type II error, revealed that this tendency was due to the use of significantly more avoidance responses than approach responses to each of the three specific stressors, $t(161) = -22.86$, -22.56, and -22.12, respectively; $p < .001$.

Consistency Across Situations

We used one-way repeated measures analyses of variance (ANOVAs) to compare the participants' perceived stress, perceived control, and approach and avoidance coping responses across the three stressful situations. Because one assumption underlying ANOVA includes homogeneity of variances (a preliminary test of robustness), we compared sample variances for each dependent variable across segments by using Box's M test (Tabachnick & Fidell, 1989). Tabachnick and Fidell contended that homogeneity should be rejected only at highly significant levels (e.g., $p < .001$), only when sample sizes are notably discrepant, or when cells with smaller samples produce larger variances and covariances than do cells with larger samples. Howell (1987) argued that "if largest variance is no more than four or five times the smallest, the analysis of variance is more likely to be valid" (p. 287). Box's M test for homogeneity of dispersion matrices met the criteria for computing the ANOVAs in the present study, confirming homogeneity of variance–covariance matrices.

Perceived stress. To examine the extent to which the participants' perceptions of the three stressful situations varied in intensity, we computed ANOVA within-subject repeated measures comparisons for the three stressful situations. The results indicated that the participants considered the three events—making a mistake, aggressive reactions, and awareness of others—to be of equal stress intensity, Wilks's lambda = 0.99, $F(2, 160) = 0.81$, $p > .05$.

Perceived control. We used a statistical procedure identical to that just described to investigate the degree of controllability for each of the three stressful events, as perceived by the participants. The results revealed a significant Wilks's lambda (0.67), $F(2, 160) = 39.58$, $p < .001$. Subsequent paired two-tailed t tests with Bonferroni adjustments indicated that the participants perceived making a mistake as the least controllable event, followed by awareness of others and aggressive reactions. All three events differed significantly from each other on perceived controllability. Specifically, the participants interpreted aggressive reactions as significantly more controllable than both making a mistake, $t(162) = -8.92$, $p < .001$, and awareness of others, $t(162) = 4.72$, $p < .001$. They perceived awareness of others as significantly more controllable than making a mistake, $t(162) = -4.62$, $p < .001$ (see Table 1 for descriptive statistics).

Coping responses. We measured the officials' coping responses to each of the three stressful situations by using the Approach and Avoidance scales of the CSI (Kaissidis-Rodafinos et al., 1997). To examine whether they were consistent in their use of approach and avoidance coping responses across situations, we carried out two sets of one-way repeated measures ANOVAs (one for approach and one for avoidance) for the three stressful situations.

For approach, the main effect of situation was significant, Wilks's lambda = .94, $F(2, 160) = 5.28$, $p < .01$. This finding suggests that the participants were not consistent in the use of approach coping responses across situations. Subsequent paired two-tailed t tests with Bonferroni adjustments revealed that they reported using significantly fewer approach responses to the stressor awareness of others than to either of the other two stressors, making a mistake, $t(161) = 3.18$, $p < .01$, and aggressive reactions, $t(161) = 2.44$, $p < .05$.

The main effect of situation was also significant in the case of avoidance, Wilks's lambda = .84, $F(2, 159) = 14.72$, $p < .001$. The finding just noted, similar to that for approach responses, indicates that the officials were not consistent in their use of avoidance coping responses across situations. Subsequent paired two-tailed t tests with Bonferroni adjustments revealed that the participants reported using significantly fewer avoidance responses to the stressor awareness of others than to either of the two other stressors, making a mistake, $t(160) = 4.71$, $p < .001$, and aggressive reactions, $t(160) = 4.87$, $p < .001$.

Regression Analyses

Because we considered approach and avoidance coping responses distinct dimensions, we used separate tests on each dimension to examine the related hypotheses. Thus, to assess the effects of personal dispositions and situational appraisals on the referees' coping responses, we computed two hierarchical regression analyses, one on approach and one on avoidance coping. Personal variables (monitoring vs. blunting style, optimism, and self-esteem) were entered first. According to Lazarus and Folkman (1984), personal variables underlie appraisal and coping choices. Situational appraisals (perceived control and perceived stress) were entered in the second step. We performed regressions of personal and situational variables separately on the basis of the participants' respective mean scores for approach and avoidance across the three situations rather than on each situation. A residual analysis indicated that assumptions underlying regression analysis were met (Howell, 1987).

Approach responses. When personal dispositions were entered first, personal and situational variables significantly contributed to predicting the referees' use of approach responses, explaining 35% of the total variance, $p < .001$. In particular, personal variables explained 22% of the variance in approach responses, $p < .001$, whereas situational appraisals added 13% unique variance, $p < .001$.

Although all personal dispositions initially emerged as significant predictors of approach coping, the effect of monitoring and optimism disappeared in Step 2 when perceived control and stress were added to the equation (Table 3). This finding suggests that personal dispositions and situational appraisals shared common variance.

To examine whether personal dispositions were more effective than situational appraisals in predicting approach responses or whether that finding was an artifact attributable to the order in which each set of variables was entered (Jobson, 1991), we performed an additional regression analysis, with situational appraisals entered first and personal dispositions second (R^2s in Table 4). Although the overall predictive values of situational and personal variables were similar to those in the first regression, situational appraisals explained 24% of the variance, and personal variables added 10% in this analysis. These findings suggest that the order in which each set of variables was entered in the regression clearly determined their predictive value.

Avoidance coping. A hierarchical regression analysis with personal variables entered in Step 1 revealed that these variables were not significant in the prediction of avoidance responses. Situational appraisals added a small, yet significant

TABLE 3
Hierarchical Regression Analysis for Variables Predicting Approach and Avoidance Responses, by Order of Entry, Among Greek Basketball Referees (N = 158)

	Dispositions first				Appraisals first			
	Approach		Avoidance		Approach		Avoidance	
Variable	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Personal dispositions								
Blunting style	.18*	.17**				.19**		
Monitoring style	.27**	.14				.17*		
Optimism	−.17*	−.12				not in equation		
Self-esteem	−.21**	−.17*				−.20**		
Situational appraisals								
Perceived control		.23***		−.16*	.25***	.22***	−.16*	
Perceived stress		.29***		.19*	.40***	.32***	.19*	
R	.47	59		.24	.49	.58	.24	
R^2	.22***	.35***		.06**	.24***	.34***	.06*	
R^2 increment after Step 2		.13††				.10†		

Note. N varies because of missing values. All entries are standardized regression (β) coefficients. *$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed. †$p < .01$, one-tailed. ††$p < .001$, one-tailed (significant increment in R^2).

TABLE 4
Regression Analysis for Variables Predicting Approach and Avoidance Responses Among Greek Basketball Referees: Method Enter (N = 158)

Predictor	Approach	Avoidance
Situational appraisals		
Perceived control	.23***	.20**
Perceived stress	.29***	−.13
Personal dispositions		
Blunting style	.19**	.12
Monitoring style	.14	−.07
Optimism	−.12	.06
Self-esteem	−.17*	−.03
R	.59	.29
R^2	.35***	.08*

Note. N varies because of missing values. All entries are standardized regression (β) coefficients.
*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$.

($p < .01$), 6% of explained variance (see β coefficients in Table 3). An alternative regression analysis with situational appraisals entered first and personal variables second showed similar results.

A final analysis with variables entered by the statistical program based on their predictive value (*method enter*) revealed results similar to those produced by the hierarchical regression analyses for the prediction of approach and avoidance responses (see Table 4). In this analysis, however, it was evident that the situational variables explained more variance than personal variables.

Discussion

In the present study, we replicated Kaissidis-Rodafinos et al.'s (1997) study with Australian basketball referees by examining the extent to which the Greek referees reported consistent (preferred) coping responses (approach and avoidance) across three stressful situations that they had previously experienced. We also investigated the effects of situational appraisals (perceived stress intensity and perceived control) and personal dispositions (optimism, self-esteem, and monitoring and blunting coping styles) on their coping responses. The results indicated that the participants were not consistent in their approach and avoidance coping responses across the three situations. This pattern has emerged in previous studies, in which participants' appraisals and coping responses varied across different types of stressful events (Lazarus & Folkman, 1984; McCrae,

1992; Orr & Westman, 1990). Yet, the present results contradict those in the study among Australian referees (Kaissidis-Rodafinos et al., 1997), in which the participants' coping responses were relatively consistent across three stressful events. The equivocal nature of previous findings regarding the consistency of coping responses may reflect both cross-cultural differences as well as the complexity of the process of coping.

The prediction of coping responses based on personal and situational characteristics was moderate for approach (35% of the total variance) and weak, albeit significant, for avoidance (6% of the variance). The same variables in the Kaissidis-Rodafinos et al. (1997) study explained 22% of the variance in both approach and avoidance responses among the Australian referees. Taken together, these findings suggest that other considerations, which have not been accounted for, may be important in determining approach and avoidance coping for basketball referees, especially among the present Greek sample.

From a psychometric perspective, it is noteworthy that the order in which each set of variables was entered in hierarchical regression analyses determined its strength as a predictor of coping responses, supporting Jobson's (1991) caution about interpreting hierarchical regression findings. Indeed, in the present study as well as in that of Kaissidis-Rodafinos et al. (1997), initial statistical analyses indicated that personal variables were better predictors of coping responses than were situational appraisals. However, additional analyses in which the order of entry of each set of predictors was reversed showed the opposite result—that is, that situational appraisals were better predictors of coping responses than were personal variables. Thus, researchers must be cautious when applying these statistics to examine theoretical models that predetermine the order in which the variables should be entered in a regression, because their findings may be artificial effects of the entry order of the variables in the hierarchical analyses.

In the present findings, personal dispositions and situational appraisals were also moderately correlated, thus indicating that these two sets of variables were not independent. Similar correlations were reported in the study among Australian referees (Kaissidis-Rodafinos et al., 1997), as well as in a number of other studies in general psychology (e.g., Lazarus & Folkman, 1984; McCrae & Costa, 1986; Parkes, 1986; Terry, 1991).

Perceived control differed as a function of the type of stressful event. In particular, the Greek referees perceived aggressive reactions as the most controllable event, confirming similar findings among Australian referees (Kaissidis-Rodafinos et al., 1997). Making a mistake was perceived as the least controllable stressor. On the other hand, perceived stress intensity did not vary as a function of the type of stressful event. This result differed from those of Kaissidis-Rodafinos et al. (1997), in which the Australian referees considered awareness of others to be markedly less stressful than making a mistake and aggressive reactions. A possible interpretation of this discrepancy is that the Australian referees may be low self-monitors when compared with the Greek officials—that is, they may be less

interested in their impressions on significant others and, therefore, less affected by their presence. Further research is needed to examine the efficacy of this plausible, yet untested, explanation.

The mean scores for the three stressful situations indicated that the present Greek referees used more avoidance than approach responses during the game, as did the Australian referees (Kaissidis-Rodafinos et al., 1997) and players (Anshel & Kaissidis, 1997). Kaissidis and Anshel (1993) found that Australian referees often used avoidance responses (e.g., "ignore," "avoid arguing," "sell the call," and "get on with the game") following similar selected sources of acute stress. Examples of avoidance strategies in the present study included "I try to get on with the game as quickly as possible" and "I try not to think about it," whereas approach strategies included "I tend to review my actions, thinking whether I was right or wrong on the call" and "I tend to explain my actions to the coach(es) or the player(s)." Although we did not determine coping effectiveness for each response, it appears that avoidance was a more popular choice in the repertory of the Greek participants in the present study.

Correlations between situational appraisals and coping responses for basketball referees indicate that high perceived stress was positively related to both the approach coping response and the monitoring coping style. This finding supports those of Kaissidis-Rodafinos et al. (1997) with Australian referees and is similar to those in Madden, Summers, and Brown's (1990) study, in which highly stressed basketball athletes often used more approach than avoidance responses. Carver et al. (1989) contended that "perhaps monitors, as part of their vigilance, are especially alert to any distress emotions they are experiencing" (p. 276). Taken together, the findings just noted lend credence to Miller's (1990, 1992) contentions that monitors and vigilant copers experience more stress than do blunters and nonvigilant copers.

On the one hand, the finding that optimism and self-esteem were negatively correlated with approach responses indicates that the referees with high scores in those dispositions used approach responses less than did the ones with lower scores. In related research, optimists and persons with high self-esteem have been shown to rely more on problem-focused coping than on emotion-focused coping (Amirkhan et al., 1995; McCall & Struthers, 1994; Strutton & Lumpkin, 1992). However, these past studies did not refer to acute time-limited stressful situations. On the other hand, consistent with at least one previous (nonsport) investigation (Lee et al., 1993), the negative correlation in the present study between optimism and high perceived stress suggests that the referees' positive outlook reduced their perceived stress intensity. Because optimism can be learned (Seligman, 1990), referees may benefit from interventions that encourage greater optimism (e.g., "look at the bright side"), provided that they do not ignore situations that require their immediate attention and active intervention.

The present study was not without limitations. Several researchers have argued that the context in which coping responses are examined may influence

the findings. Miller (1992) and McCrae (1992) have suggested that dispositional differences in coping manifest themselves only under certain situational conditions, such as highly stressful events. Similarly, in one sport example, Phipps and Zinn (1986) demonstrated that the physiological and self-reported symptoms associated with coping styles were evident only under high-threat situations. More recently, Anshel (1996) found that adolescent athletes exhibited coping responses (e.g., approach and avoidance) as a function of eight types of events that respondents indicated were "highly stressful." Thus, it would appear that coping style is more likely to influence situations that are highly stressful and uncontrollable. Future research is needed to replicate these findings by comparing participants' use of coping strategies following extremely high (as opposed to moderate) perceived stress intensity. Finally, regression results must be interpreted cautiously in light of the low internal reliabilities found for some of the psychometric scales in the present study.

In summary, the equivocal consistency of present and past findings regarding the predictive value of personal versus situational variables suggests the need for further studies in which both general and situation- or problem-specific coping styles are considered. On the other hand, consistent with previous findings in sport psychology, results from the present study support the notion that avoidance coping for basketball officials may be more common than approach coping and may be associated with reduced perceived intensity of acute stress. Indeed, we found that greater use of approach coping was significantly related to increased perceived stress. This finding implies that, although basketball referees may feel compelled to use approach responses during their games (e.g., by giving technical fouls to coaches for inappropriate behavior), avoidance responses may be more adaptive than approach responses. However, both types of responses may be needed for optimal performance in sport. Miller (1990) recommended that effective stress management should consist of (a) teaching a variety of coping skills and (b) improving the individual's ability to identify critical situational variables and then to adapt to the situation. The applicability of Miller's (1990) recommendation with reference to sports participants, particularly referees, awaits further research.

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