

Personal and situational factors that predict coping strategies for acute stress among basketball referees

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The aim of this study was to establish the ways in which coping style and situational appraisals are related to the consistency of using approach and avoidance coping strategies for skilled Australian basketball referees ($n = 133$) after three game-related stressful events. The events, 'making a mistake', 'aggressive reactions by coaches or players' and 'presence of important others', were determined from previous research on sources of acute stress among basketball officials. Our findings indicated that: referees exhibited consistent avoidance, but not approach, coping styles; they used more avoidance than approach strategies; and they perceived stress to be positively correlated with approach, and negatively associated with avoidance, coping strategies. These findings suggest that individual differences exist in perceptions of stress (i.e. situational appraisals), controllability and coping styles among moderately and highly skilled basketball referees. The implications for teaching cognitive and behavioural strategies for effective coping with acute stress in basketball officiating are discussed.

Keywords: Acute stress, basketball, coping, coping style, sport, referees.

Introduction

Acute stress in sport refers to short-term, time-limited events such as receiving a 'bad' call from the referee, or making a physical or mental error (Anshel, 1990, 1996). Previous research has repeatedly shown that the inability to deal effectively with acute stress is detrimental to both the performance and personal satisfaction of sports competitors (e.g. Mace and Carroll, 1986; Anshel, 1990).

One group of sports participants who have received surprisingly little attention from researchers, however, is basketball referees. They often experience various forms of acute stress during a single contest, such as making an error or dealing with verbal abuse. The extant literature in this area has consisted primarily of descriptions of demographic and biological characteristics (e.g. Quain and Purdy, 1988) and, to a lesser extent, studies of sources of stress (e.g. Purdy and

Snyder, 1985; Taylor and Daniel, 1988; Goldsmith and Williams, 1992; Kaissidis and Anshel, 1993; Anshel and Weinberg, 1995). However, research examining the coping process in this group is almost non-existent.

Researchers have suggested that coping with stress is a rather complicated process, dependent on both situational and personal factors (e.g. Parkes, 1986; Carver *et al.*, 1989). Situational factors refer to the objective features of the event. They are 'related to the immediate nature of the stressful transaction, which was the specific focus of the individual's coping attempts' (Parkes, 1986). However, events are not necessarily inherently stressful; instead, it is the individual's interpretation that causes stress, a process referred to as 'cognitive appraisal'.

Cognitive appraisal is the first stage of the coping process, forming the link between the stressor and the individual's coping response (Folkman and Lazarus, 1985; Folkman *et al.*, 1986a). Findings from previous, non-sport research have shown that situational appraisals influence the individual's selection of coping

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responses (Folkman *et al.*, 1986a, b). In support of this view, Terry (1991) concluded that an individual's perception of a stressful event (i.e. situational appraisal) is more important than its objective characteristics. This is particularly the case in response to perceptions of situational controllability (Lazarus and Folkman, 1984).

Folkman *et al.* (1986a), for example, found that participants used confrontational, problem-solving, positive reappraisal and accepting responsibility coping strategies in changeable events. When the event was not changeable, participants used more distancing and escape-avoidance patterns. Results from similar studies (e.g. Folkman and Lazarus, 1985; Carver *et al.*, 1989) suggest that, in general, controllable events are associated with active coping efforts. Incidents often require vigilance for awareness and proper action, whereas in uncontrollable events, avoidance coping (e.g. immediately attending to the next task) is preferred (Roth and Cohen, 1986). It appears that no published study has examined situational factors in predicting selected coping strategies in response to acute stress in sport, particularly among sports officials.

Another factor that affects the coping process is coping style, a disposition that reflects the preference and selection for using certain types of coping strategies (Holahan and Moos, 1987; Carver *et al.*, 1989; Hock, 1993). McCrae (1992) and Miller (1992) suggest that dispositional differences in coping manifest themselves only under certain situational conditions, such as highly stressful events. For example, Phipps and Zinn (1986) demonstrated that the psychological and self-reported symptoms associated with coping styles are only evident if there is perceived high threat. Thus, it would appear that coping style is more likely to influence events that are highly stressful and uncontrollable, both of which characterize basketball officiating.

Two popular frameworks with which researchers have studied coping styles are (1) approach and avoidance (Krohne and Hindel, 1988; Krohne, 1993; Anshel, 1996) and (2) monitoring and blunting (Miller, 1987, 1990). An *approach* coping style (also referred to in the literature as vigilant-nonvigilant, approach-avoidance, repression-sensitization, reducers-augmenters and denial-intrusion; see Roth and Cohen, 1986, for a review) refers to behavioural, cognitive and emotional activity directed towards the threat or its cognitive and emotional inner interpretations. *Avoidance* coping, on the other hand, refers to activity directed away from the threat, such as remaining on task, or, from a cognitive perspective, discounting the source of stress (e.g. 'the coach is having a bad day').

Monitoring refers to the extent to which an individual is alert for and sensitized to threat-relevant informa-

tion. Medical patients, for instance, who feel less stressed upon learning about their forthcoming medical procedure, are demonstrating a monitoring coping strategy. *Blunting* refers to preferring distraction or avoiding information related to the source of stress (Miller, 1987, 1990). Blunters would prefer to know as little as possible about medical procedures and, in general, do not have a need for information. Individuals characterized by a blunting coping style are more likely to report lower levels of stress compared with individuals with a monitoring or approach coping style (Miller and Mangan, 1983; Miller, 1990). While the approach and avoidance coping styles have received limited attention in the extant sport psychology research literature (Krohne and Hindel, 1988; Anshel, 1996), the concept of monitoring and blunting coping styles has been ignored.

One area of scientific inquiry among non-sport researchers has been the interaction between personal (coping style) and situational factors that predict an athlete's selection of coping strategies following stressful events during the contest. The trait and interactional models have formed the conceptual framework for examining this issue in general psychology (for reviews, see Aldwin, 1994; Krohne, 1996). Supporters of the trait model argue that dispositional factors tend to explain an individual's stable and consistent use of coping response. The approach and avoidance, and monitoring and blunting, coping styles are examples of such dispositions.

The situational-mediating model assumes that appraisal shapes the effects of personal factors on coping, so that situational characteristics form a primary predictor of coping strategies (Singer and Davidson, 1991; Terry, 1991). For example, Fleishman (1984) and Holms *et al.* (1986), when examining coping responses to everyday life stressors, found that the type and the characteristics of the stressor appeared to be the best predictors of the individual's coping responses as opposed to personal characteristics. Thus, personal dispositions can only affect the selection of coping strategies through appraisal of the event.

Finally, the interactive model suggests that coping is a result of the interactions between personal dispositions and situational appraisals. A number of authors (e.g. McCrae and Costa, 1986; Parkes, 1986; Terry, 1991) have argued that, because coping is theoretically regarded as a mediator of the relationship between stress and well-being, factors that predict stress outcomes should also be able to predict coping responses. Support for the interactional model of stress and coping would be apparent if appraisals were constantly changing as each event develops. This would result in different coping responses between events. If the trait model is supported, however, then personal disposi-

tions (i.e. approach and avoidance coping styles) would predict consistent coping responses across different stressful events.

Studying the processes associated with successful coping may provide useful information for referees in improving coping skills and reducing chronic stress, burnout and drop-out, significant problems in sports officiating (Schultheis *et al.*, 1987; Weinberg and Richardson, 1990). In addition, identifying the individual's coping style will assist researchers in designing intervention programmes that complement or match the participant's coping preferences, as opposed to the less desirable strategy of trying to alter the individual's coping style (Krohne, 1993). Finally, the need for situation- and profession-specific approaches in the study of stress has been emphasized in the coping literature (e.g. Roth and Cohen, 1986; Krohne, 1988; Aldwin, 1994). In sport, according to Krohne (1988), 'it seems highly unlikely that one and the same training programme will serve the needs of athletes (and sports arbiters) in different fields. Instead, research and application have to proceed along the lines of a sport-specific approach'.

The aim of this study was to evaluate the extent to which basketball referees exhibit consistent (i.e. preferred) coping responses across a range of acute stressful events, testing the trait and interactional models of coping. In particular, the key research question was to examine the role of situational appraisals (i.e. perceived stress and perceived control) and coping style (approach-avoidance, monitoring-blunting) as predictors of coping responses following three highly stressful game-related events for skilled basketball referees. The relationships between coping style, situational appraisals and coping responses were also examined.

Methods

Participants

Psychological inventories were sent to basketball referees' associations in all Australian states, with a letter of support from the National Australian Basketball League, asking each association to administer the survey to its adult members (aged 18 years and over) who were categorized as highly skilled, or Level 1, according to the Australian Basketball Referees' Association. Thus, all referees were experienced at officiating at the same level of competition, reflecting similar types and intensities of acute stress.

Follow-up telephone calls were made to each organization as a reminder to return the survey. Altogether, 133 of the 350 (38%) basketball officials returned the survey. These rates compare favourably (i.e. 10-50%)

with those found in mailed surveys using follow-ups (Patton, 1990). The respondents were aged 18-53 years (mean \pm s: 29.2 \pm 10.0) and had served as basketball referees for 4.6-12.8 years (8.5 \pm 7.4). As indicated earlier, despite the extensive ranges in age and experience in the sample, all participants were designated as Level 1, indicating their ability to referee the games of highly skilled athletes. In the survey, the participants were instructed to 'tell us how you respond to certain game-related stressful events that you have experienced'. All surveys were completed anonymously.

Materials

The inventory used in this study to ascertain coping style (monitoring-blunting) was the Miller Behavioural Style Scale (MBSS; Miller, 1987). The MBSS, a general (non-sport) coping style instrument, conceptualizes coping styles as monitoring and blunting. These coping styles reflect a person's preferences for seeking information or distancing themselves from information about the nature of and the potential impact of four hypothetical naturalistic stressful events.

The MBSS consists of 32 items, from which the two subscales of monitoring and blunting are derived. For example, one of the stressful scenarios in the MBSS is: 'Vividly imagine that you are afraid of the dentist and have to get some dental work done. Which of the following would you do?' Response items include, among others, 'I would ask the dentist exactly what s/he was going to do', and 'I would take a tranquilliser or have a drink before going'. The MBSS has good predictive validity, with a test-retest correlation of approximately 0.80 over a 3 month period (see Miller, 1990, for a review of this literature). This instrument also provides a basis for concurrent validity for inter-individual comparisons of the participants' approach and avoidance coping styles, as recommended by Cohen (1987).

The Coping Style Inventory (CSI; see Kaissidis, 1993, for a complete psychometric description; see also Kaissidis and Anshel, 1993) was used to measure the basketball referees' appraisals and coping responses in acute stressful events. The purpose of the CSI was to assess simultaneously perceived controllability, perceived stress intensity and coping responses of basketball referees during acute stress in a game.

To control inter-individual variations in the stressful events upon which individuals inferred their responses, participants were presented with standard realistic scenarios of events that occur during competitions. However, rather than respond to hypothetical scenarios, a limitation in the extant coping research (Aldwin, 1994), the referees were asked to respond only to events that they had *actually* experienced and their use

of coping strategies following each of these stressful events. That there were no missing data indicated that all participants had experienced each of the stressful events used in this study. In addition, the participants' degree of perceived stress and controllability were obtained for each event, as suggested by Krohne (1988).

Specifically, the first scale of the CSI measures the degree of perceived intensity and control for the selected events. Participants were asked to indicate the intensity of each of the three situational stressors they had experienced on a scale of 1 (not at all stressful) to 5 (very stressful). To measure perceived control over each event, participants were asked to rate on a scale of 1 (not at all true) to 5 (very true) the degree to which 'I feel that usually I can do something about it'. The second segment of the CSI assessed the referees' choice of approach or avoidance coping strategies during stressful game-related events.

The three stressful events included in this study to trigger the participants' coping responses reflected the findings of Anshel and Weinberg (1995) and Kaissidis and Anshel (1993): 'making a mistake, such as a wrong call or a block versus charge', 'experiencing aggressive reactions by coaches or players, such as insults or threats or physical abuse', and 'becoming aware of the presence of important others, such as supervisors, media, parents, or friends'. In both studies, these had been found to be highly stressful for Australian sports officials. In addition, the use of three standard stressful events, rather than asking participants to recall their coping strategies on personal past stressful experiences, allowed for between-participants and within-participants comparisons across the three events, as suggested by Cohen (1987). Still, since the referees were asked to indicate how they actually responded to each of these stressful events, it was assumed that their responses were based on real, not hypothetical, events and coping reactions.

Eight coping items, four approach coping strategies and four avoidance coping strategies, depicted the referees' typical responses to each of the stressful events. An example of approach coping was, '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 included 'I try to get on with the game as quickly as possible' and 'I try to concentrate on what I have to do next'. Participants were asked to recall each of the three stressful events and then to indicate on a scale of 1 (not at all true) to 5 (very true) the number that described the extent to which they used each strategy. Kaissidis and Anshel (1993) reported high construct and predictive validity and high internal consistency of the items (alphas = 0.81 and 0.83 for approach and avoid-

ance scales, respectively). The alphas for the present study were 0.79 and 0.84, respectively.

Results

The data analyses were based on three sets of variables: (1) correlations between the personal disposition of monitoring and blunting coping styles; (2) examining the appraisals of perceived control and stress intensity for the three stressful events; and (3) comparisons between participants' actual approach and avoidance coping responses to the three stressful events. Since the approach and avoidance coping strategies were considered distinct dimensions, separate tests in each dimension were used to examine the related hypotheses. The alpha level for all statistical comparisons was set at 0.05.

The means and standard deviations of participants' scores on monitoring and blunting coping styles, perceived control, stress appraisals, and approach and avoidance coping during the three stressful events are shown in Table 1. A perusal of the means shows that the most controllable event, 'aggressive reactions by coaches or players', was also rated the most stressful, followed closely by the stressor 'making a mistake'. Average coping scores for both groups revealed that referees used more avoidance than approach coping during officiating.

Correlations between personal dispositions, situational appraisals, and approach and avoidance coping responses are summarized in Table 2. Relationships between coping styles and coping strategies indicated that monitoring and approach coping, which were conceptually related, and blunting and avoidance coping, also conceptually related, were not highly correlated ($r = 0.09$ and 0.13 , respectively; $P > 0.05$). Perceived stress was moderately but significantly correlated with the use of approach coping strategies ($r = 0.33$, $P < 0.01$). Similarly, perceived control was also moderately but significantly correlated with approach coping ($r = 0.27$, $P < 0.05$). Perceived controllability was unrelated to stress appraisal across situational appraisals ($r = 0.01$, $P > 0.05$).

Relationships between coping style and situational appraisals indicated that perceived control was related, again albeit moderately, to monitoring ($r = 0.40$, $P < 0.05$). This suggests that high monitors (i.e. individuals who tend to seek information about the source of stress) were more likely to perceive events as highly controllable compared with low monitors. High monitors also reported higher degrees of stress, as shown by the correlation between monitoring and perceived stress ($r = 0.41$, $P < 0.05$).

Table 1 Means and standard deviations (unranked) of situational appraisals, coping responses and personal dispositions

Variable	Event 1 (‘making a mistake’)	Event 2 (‘aggression’)	Event 3 (‘presence of others’)	Pooled means
Situational approaches				
Perceived control	2.98 ± 1.17	3.68 ± 1.07	2.84 ± 1.30	3.16 ± 0.76
Perceived stress	2.80 ± 1.00	2.93 ± 1.15	2.45 ± 1.10	2.74 ± 0.80
Coping responses				
Avoidance	3.83 ± 0.66	3.79 ± 0.69	3.81 ± 0.84	3.81 ± 0.62
Approach	2.45 ± 0.56	2.45 ± 0.62	2.27 ± 0.70	2.39 ± 0.51
Coping style				
Monitoring				10.50 ± 2.54
Blunting				7.01 ± 2.52

Note: Numbers of subjects (*n*) varied slightly because of missing data: maximum = 133, minimum = 100.

Appraisals across events

A one-way repeated-measures multivariate analysis of variance (MANOVA) was used to compare participants’ appraisals of perceived control and perceived stress appraisals across the three stressful events. The assumptions underlying MANOVA include homogeneity of variances. As a preliminary test of robustness, sample variances for each dependent variable were compared across segments using Box’s *M*-test, which is sensitive to variance deviations from the normal distribution (Tabachnick and Fidell, 1989). Tabachnick and Fidell contend that homogeneity should only be rejected at significant levels (e.g. $P < 0.001$), and only when sample sizes are notably discrepant, or when cells with smaller samples produce larger variances and covariances than cells with larger samples. Howell (1987) argued that ‘if the largest variance is not more than four or five times the smallest, the analysis of variance is more likely to be valid’. Box’s *M*-test for homogeneity of dispersion matrices met the criteria for

computing the multivariate analyses of variance in this study, confirming homogeneity of variance-covariance matrices.

The MANOVA was significant (Wilks’ lambda = 0.59; $F_{2,131} = 12.15$, $P < 0.001$). Univariate analyses revealed that ‘aggressive reactions by coaches or players’ was perceived to be significantly more controllable than both ‘making a mistake’ ($F_{1,132} = 5.68$, $P < 0.01$) and ‘presence of important others’ ($F_{1,132} = 6.84$, $P < 0.001$). Referees perceived the stressor ‘presence of important others’ to be as controllable as ‘making a mistake’ ($F_{1,132} = 0.96$, $P > 0.05$; see Table 1 for descriptive statistics).

For the perceived stress dependent variable, univariate analyses indicated that ‘presence of important others’ was markedly less stressful than both ‘making a mistake’ ($F_{2,132} = 2.97$, $P < 0.004$) and ‘aggressive reactions by coaches or players’ ($F_{2,132} = 3.98$, $P < 0.001$). Level of stress was not significant between the stressors ‘making a mistake’ ($F_{1,132} = 1.24$, $P > 0.05$) and

Table 2 Correlations between situational appraisals, coping style and coping responses

	Monitoring	Blunting	Perceived stress	Perceived control	Avoidance	Approach
Coping style						
Monitoring						
Blunting	-0.13					
Situational appraisals						
Perceived stress	0.41 ^c	0.01				
Perceived control	0.40 ^c	0.05	0.01			
Coping responses						
Avoidance	0.11	0.13	-0.15	0.11		
Approach	0.09	0.13	0.33 ^c	0.27 ^a	-0.25 ^b	

Note: Numbers of subjects (*n*) varied slightly because of missing data: maximum = 133, minimum = 96.

^a $P < 0.05$, ^b $P < 0.01$, ^c $P < 0.001$ (two-tailed tests).

'aggressive reactions by coaches or players' ($F_{2,132} = -1.32, P > 0.05$).

Coping responses

The basketball officials' coping strategies following each of the three stressful events were measured using the CSI's approach and avoidance scales. Two separate one-way analyses of variance were computed on these data, with approach and avoidance coping strategies serving as the dependent variable in each analysis.

To assess whether the participants were consistent in their use of approach coping strategies across events, within-subject comparisons on the repeated measures for approach coping in the three events were carried out. The main effect of situation was non-significant ($F_{2,131} = 0.19, P > 0.05$), suggesting that basketball officials were consistent in their use of approach coping responses.

Within-subject comparisons on the repeated measures across the three events revealed no significant differences in the referees' use of avoidance coping responses ($F_{2,131} = 0.71, P > 0.05$). Thus, referees were consistent in their use of avoidance coping strategies across the three sources of acute stress (see Table 1 for descriptive statistics for both analyses of variance).

Predicting the use of coping strategies

To examine the effects of personal dispositions and situational appraisals on the referees' coping responses, two separate hierarchical regression analyses were computed to predict the use of approach and avoidance coping, respectively. Personal variables were initially entered first in accordance with the contention of Laz-

arus and Folkman (1984) that they underlie appraisal and coping choices. Situational appraisals for controllability and intensity of stress were entered in the second step, since approach and avoidance coping were used consistently across events, and regressions of personal and situational variables were performed on each coping style across the three events rather than on each event separately. A residual analysis indicated that no assumptions underlying regression analysis were violated.

Predicting approach coping

When personal dispositions were entered first, personal and situational factors contributed significantly to predicting the referees' use of approach coping strategies, explaining 22% of the variance ($P < 0.01$). In particular, personal factors predicted 14% of the variance in approach coping ($P < 0.01$), while situational appraisals added 8% unique variance ($P < 0.01$). Perceived stress and monitoring were the only other significant predictors of approach coping ($P < 0.01$; see Table 3).

To assess whether personal dispositions or situational appraisals more strongly predicted approach coping, or whether this finding was an artifact due to the order in which each set of variables was entered (Jobson, 1991), an additional regression analysis was performed. Situational appraisals and personal dispositions were entered first and second, respectively (Table 4). While the overall and predictive values of situational and personal variables were similar to the first regression, situational appraisals were better predictors of approach coping, explaining 15% of the variance, followed by personal factors (8%). These findings suggest that the order in which each set of variables is entered in the regression partially determines their predictive value.

Table 3 Hierarchical regression analysis predicting approach and avoidance coping for basketball referees ($n = 133$): Dispositions entered first

Predictor	Approach		Avoidance	
	Step 1	Step 2	Step 1	Step 2
Coping style				
Blunting	0.05	0.07	0.25 ^a	0.23 ^a
Monitoring	0.23 ^a	0.19	0.10	0.02
Situational appraisals				
Perceived control		0.06		0.30 ^b
Perceived stress		0.30 ^b		-0.18
<i>R</i>	0.38	0.48	0.33	0.47
<i>R</i> ²	0.14 ^b	0.22 ^b	0.11	0.22 ^b
<i>R</i> ² increment after step 2		0.08 ^c		0.11 ^c

Note: All entries are standardized regression (β) coefficients.

^a $P < 0.05$, ^b $P < 0.01$ (two-tailed test); ^c $P < 0.01$ (significant increment in R^2).

Table 4 Hierarchical regression analysis predicting approach and avoidance coping for basketball referees ($n = 133$): Appraisals entered first

Predictor	Approach		Avoidance	
	Step 1	Step 2	Step 1	Step 2
Situational appraisals				
Perceived control	0.11	0.06	0.32 ^b	0.30 ^b
Perceived stress	0.37 ^c	0.30 ^b	-0.22 ^a	-0.18
Personal dispositions				
Blunting		0.07		0.23 ^a
Monitoring		0.19		0.02
<i>R</i>	0.39	0.48	0.39	0.47
<i>R</i> ²	0.15 ^b	0.23 ^b	0.15 ^b	0.22 ^b
<i>R</i> ² increment after step 2		0.08 ^d		0.07

Note: All entries are standardized regression (β) coefficients.

^a $P < 0.05$, ^b $P < 0.01$, ^c $P < 0.001$ (two-tailed test); ^d $P < 0.01$ (significant increment in R^2).

Predicting avoidance coping

Similar to predicting approach coping, the regression analysis with personal factors entered first yielded a significant proportion of avoidance coping variability (22%, $P < 0.01$). Specifically, personal factors predicted 11% of the variance ($P > 0.05$), while situational factors added 11% unique variance ($P < 0.01$). Blunting and perceived control were the only significant predictors of avoidance coping (see β coefficients in Table 4).

A second regression analysis, in which situational appraisals were entered first followed by personal factors, accounted for 22% of the variance. As shown in Table 4, a greater proportion of the total variability was explained by situational factors (15%) than by personal dispositions (7%). Thus, situational appraisals, compared with personal dispositions, were better predictors of avoidance coping strategies when appraisals were entered in the first step of the regression.

Discussion

The present study examined the extent to which basketball referees showed consistent (preferred) coping responses across three events in which acute stress was experienced, and the relationships between situational appraisals and personal dispositions on the coping responses of basketball referees. It was hypothesized that participants would exhibit low consistency in their coping responses across events. This hypothesis was partially confirmed, as the referees used approach and avoidance coping responses consistently across the three events. This finding is supported by other studies

in the general psychology literature, which report variability in participants' appraisals and coping responses in different situations (Lazarus and Folkman, 1984; Orr and Westman, 1990; McCrae, 1992). One possible limitation in predicting a person's use of coping strategies is the stressor's characteristics. According to McCrae (1992), the type of stressor, controllability, and chronicity and severity of the stressor may influence the individual's selection of a coping strategy. However, perhaps the most powerful predictor of coping is the individual's appraisal of the stressor (Lazarus and Folkman, 1984).

'Aggressive reactions by coaches or players' was appraised by the referees to be the most controllable event. This result supports Kaissidis and Anshel (1993), who found that basketball referees usually coped with the stress of abusive coaches and players by taking 'appropriate' action, such as penalizing the offending party. In a related finding in this study, 'aggressive reactions by coaches or players' was rated by the referees as the most intense source of stress. This suggests that approach, rather than avoidance, coping strategies might be more effective in dealing with stressors perceived to be highly controllable, at least in sports officiating.

Pooled mean scores for approach and avoidance indicated that referees used more avoidance than approach coping during officiating. This finding also supports Kaissidis and Anshel (1993), who found that avoidance responses such as 'ignore', 'avoid arguing', 'sell the call' and 'get on with the game' were used most often by referees following selected sources of acute stress. Examples of avoidance coping strategies used 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', while 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)'.

Significant correlations were found between coping style, situational appraisals and (approach and avoidance) coping responses. With regard to relationships between appraisals and coping responses, perhaps the referees' anticipation of experiencing certain stressors during the game, as shown in previous studies (e.g. Goldsmith and Williams, 1992; Kaissidis and Anshel, 1993; Anshel and Weinberg, 1995), results in focusing energy selectively towards stressors perceived as relevant, intense or unanticipated (Wilson, 1985). Wilson concluded from his review of research that anticipating intense somatic arousal should induce avoidance of threat-related cues, a strategy intended to control feelings of fear or anxiety. Krohne (1993) lists 'anticipation of negative events' as an example of vigilant coping, similar conceptually to the use of approach coping in this study. Thus, in support of the extant coping literature, it appears that basketball referees use both approach and avoidance coping in response to stressful events during the game.

The non-significant correlations in this study between monitoring and approach coping, and between blunting and avoidance coping, support Miller's (1990) claim that the MBSS monitoring and blunting scales are unrelated to trait measures such as repression-sensitization (commensurate with avoidance and approach coping, respectively). Thus it appears that coping styles measured by the MBSS are distinct from the approach and avoidance construct.

The finding that perceived stress was moderately related to both monitoring coping style and to approach coping supports in part Miller's (1990, 1992) contention that monitors and vigilant copers experience more stress than blunters and non-vigilant copers. Carver *et al.* (1989) found similar relationships between monitoring and stress and suggested that, 'perhaps monitors, as part of their vigilance, are especially alert to any distress emotions they are experiencing'. Madden *et al.* (1990) also found that highly stressed basketball players often use more approach strategies than avoidance, although the application of approach and avoidance coping strategies may be a function of the type of stressful event (Anshel, 1996).

The current findings also show that personal dispositions and situational appraisals were moderately correlated, thus indicating that the two sets of variables are not independent. These correlations appear to support the interactional theory of coping (Lazarus and Folkman, 1984), which postulates that personal and situa-

tional factors are interdependent and that transactions between these factors influence the process of coping.

Average scores over the three stressful events indicated that basketball referees used more avoidance than approach coping. Correlations between situational appraisals and coping responses for basketball referees indicated that high perceived stress was positively related to approach coping and negatively related to avoidance coping. Taken together, these findings suggest that avoidance coping (e.g. ignoring or discounting unpleasant comments, moving on to the next task) may be a more adaptive strategy in acute sports-related events, at least for basketball referees.

Previous studies have also supported the notion that avoidance is a more effective coping strategy in reducing stress, particularly in the short term (Mullen and Suls, 1982; Roth and Cohen, 1986; Krohne, 1988). Roth and Cohen (1986), for example, argued that avoidance acts like a breather, providing time to plan the next coping strategy. In sport settings, Krohne and Hindel (1988) found more avoidance and less approach coping strategies, and lower state anxiety, among elite table tennis players than athletes who used the reverse coping pattern. Anshel (1996) found that avoidance coping tendencies were more closely allied with acute stressors that could be described as being low in controllability (e.g. coach reprimand, cheating opponent) than with more highly controllable stressors (e.g. making a physical error). As indicated earlier, Madden *et al.* (1990) found that highly stressed basketball players relied more heavily on coping strategies, such as increased effort and resolve and seeking social support (all problem-focused coping), than participants with low perceived stress. As Madden *et al.* argue, it is possible that using approach coping activities may increase the level of arousal of an already highly aroused individual, common in sports officials (Quain and Purdy, 1988; Weinberg and Richardson, 1990), thus impeding performance.

Although others have shown that approach coping may sometimes be a more efficient coping strategy than avoidance (e.g. Billings and Moos, 1982; Endler and Parker, 1990), the results of the present study support the notion that avoidance coping for basketball officiating may be more effective in reducing overall perceived stress intensity than approach coping. This conclusion is supported by the present finding that greater use of approach coping was significantly related to increased perceived stress. This suggests that, while basketball referees may feel compelled to use approach coping during the game (e.g. giving a technical foul to the coach for inappropriate behaviour), avoidance coping may prove more beneficial for improved coping effectiveness. For example, referees who can ignore, or psychologically distance themselves from, sources of

improper comments from others, will usually feel less stressed and continue to attend to relevant cues more effectively than referees who feel compelled to react to, and be distracted by, every harsh statement directed towards them during the game (Krohne, 1988; Weinberg and Richardson, 1990). Sometimes, however, use of the 'correct' type of coping strategy is a function of situational characteristics. Miller (1990) recommended that teaching a variety of coping skills, improving an individual's ability to identify critical situational factors and then adapt to them, should be an important component of stress management in sport. The effectiveness of stress management interventions based on referees' coping tendencies awaits further research.

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