

Sources of Stress, Burnout, and Intention to Terminate Among Basketball Referees

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Questionnaires assessing sources of stress, burnout, and intention to terminate refereeing were returned by 721 of 1500 basketball referees (48%). Exploratory and confirmatory factor analyses revealed five correlated sources of stress factors (Performance Concerns, Fear of Physical Harm, Lack of Recognition, Time Pressure, and Interpersonal Conflict) accounting for 50% of the variance. Referees rated four of the factors as mildly related to their stress, though Fear of Physical Harm was not related to their stress. A structural model hypothesizing that: (a) Performance Concerns, Time Pressure, and Interpersonal Conflict predict burnout, and (b) age and burnout predict intention to terminate refereeing fit the observed data, with a Goodness of Fit Index of .97. Research has consistently indicated that Interpersonal Conflict, Fear of Physical Harm, Time Pressure, and Performance Concerns are sources of stress for sport officials. Burnout in sport officials is consistently related to Performance Concerns, Time Pressure, and Interpersonal Conflict, and burnout is a consistent predictor of intention to terminate.

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In recent years, a number of investigators have examined sources of stress among sport officials. Taylor and Daniel (1987) identified five sources of Stress in a factor analysis of the responses of soccer referees to the Soccer Officials' Stress Survey (SOSS). These sources were Fear of Failure, Fear of Physical Harm, Interpersonal Conflicts, Time Pressures, and Peer Conflicts. Goldsmith and Williams (1992) also identified five sources of stress when they administered a revised SOSS to volleyball and football officials. Three of the sources (Fear of Failure, Fear of Physical Harm, and Time Pressure) were the same as those identified by Taylor and Daniel (1987), and a fourth factor, labeled Verbal Abuse, was similar to Interpersonal Conflict. Rainey (1995a) surveyed baseball and softball umpires with a modified version of the Ontario Soccer Officials' Survey (OSOS), an update of the SOSS. Factor analysis of the umpires' responses provided a four-factor solution, with four correlated factors: Fear of Failure, Fear of Physical Harm, Interpersonal Conflict, and Time Pressure. Stewart and Ellery (1998) administered the SOSS to certified high school volleyball referees and reported the same four factors as Rainey (1995a), though the factors were generated by orthogonal rather than oblique rotations. Thus, there are four sources of stress factors (Fear of Failure, Fear of Physical Harm, Interpersonal Conflict, and Time Pressure) that have emerged consistently among soccer, volleyball, football, and baseball/softball officials.

In a related effort, Anshel and Weinberg (1995) administered a 15-item measure of sources of acute stress to American and Australian basketball referees. Although they did not use factor analysis to evaluate responses, their analysis of individual items revealed some consistencies with studies using the OSOS/SOSS. For example, the three items that basketball referees rated most stressful (making a wrong call, threats of physical abuse, and verbal abuse by coaches) are almost identical to items from the OSOS/SOSS that load on the factors Fear of Failure, Fear of Physical Harm, and Interpersonal Conflict.

A second focus of this research has been to study the consequences of stress for sport officials. Taylor, Daniel, Leith, and Burke (1990) used path analysis to examine burnout as a mediator between sources of stress and intention to terminate. They reported a significant correlation between sources of stress scores and burnout scores among soccer referees. Also, their path analysis indicated that Fear of Failure, Interpersonal Conflict, Role-Culture Conflict, and age predicted burnout, and that age and burnout predicted intention to terminate among soccer officials. Rainey (1995b) examined sources of stress, burnout, and intention to terminate among baseball and softball umpires using structural equation modeling. This analysis produced a model in which Fear of Failure, Interpersonal Conflict, and Time Pressure predicted burnout, and burnout predicted intention to terminate. Thus, burnout was significantly related to intention to terminate in the studies by Rainey (1995a) and Taylor et al. (1990), and Fear of Failure and Interpersonal Conflict were related to burnout in both studies.

The present study had two purposes. The first purpose was to examine sources of stress among certified basketball referees. Based upon the past research, it was hypothesized that four sources of stress (Fear of Failure, Fear of Physical Harm, Interpersonal Conflict, and Time Pressure) would emerge from a factor analysis of basketball referees' responses to a revised version of the OSOS. The second purpose was to further examine the relationships among sources of stress, burnout, and intention to terminate refereeing. Based upon the results of Taylor et al. (1990) and Rainey (1995b), it was hypothesized that three sources of stress factors (Fear of Failure, Time Pressure, and Interpersonal Conflict) would predict burnout and that age and burnout would predict intention to terminate.

Method

Participants

Participants in this study were 721 basketball referees, 664 men and 57 women, certified by the Ohio High School Athletic Association. Their ages ranged from 20 years to 72 years, with a mean of 41.9 years ($SD = 9$ years). Their experience refereeing basketball ranged from 3 years to 49 years, with a mean of 14.4 years ($SD = 8.3$ years).

Materials

The data for this study came from four sections of a five-section questionnaire. The first section requested demographic information, including gender, age, and years of refereeing experience. The second section of the questionnaire was a 31-item version of the OSOS (Taylor et al., 1990). Participants were asked "How much did this (source of stress) contribute to the amount of stress you felt last season?" To respond participants circled a number from 3 (*strongly*) to 0 (*not at all*) for each item. Two items assessing the effects of verbal criticism ("Verbal criticism from players/coaches" and "Verbal criticism from spectators") were added to the 29-item OSOS. The third section of the survey was a 16-item burnout inventory, modified for use in a sport officiating context by Taylor and Daniel (1988) from the Maslach Burnout Inventory (MBI, Maslach & Jackson, 1981). This scale measured the frequency of referees' burnout experiences and asked respondents "How often have you felt this way about refereeing". The referees circled their responses on a 4-point scale ranging from 0 (*never*) to 3 (*often*). The final section of the survey was a three item measure assessing respondents' intentions to continue or quit refereeing at the end of the season (e.g., "How likely is it that you will quit refereeing after this season?"). Referees responded on a 5-point scale ranging from 1 (*definitely will*) to 5 (*definitely will not*).

The questionnaire was accompanied by a letter describing the study and promising

feedback about the results of the study to any participant who requested it. Respondents who wanted feedback were instructed to address an inclosed blank mailing label to themselves and return it with their questionnaire.

Procedures

The questionnaires were mailed in the middle of March to 1500 certified referees. Those surveyed were every-other basketball referee listed in the Ohio High School Athletic Association Officials Directory. By the time of the mailing, the regular season was over, and tournament competition was well under way. The referees answered their questionnaires anonymously. When a questionnaire was received with a return address label, the label and questionnaire were separated immediately to maintain confidentiality of responses.

Results

Questionnaires were returned by 721 referees, 664 males and 57 females, a response rate of 48%. In order to enhance the reliability of the factor solution for the OSOS, an exploratory factor analysis was conducted using the odd numbered cases in the data file, and then a confirmatory factor analysis was conducted using the even numbered cases.

Exploratory Factor Analysis

A principle components factor analysis was conducted using an oblique (oblimin) rotation. The initial extraction yielded seven factors with eigen values of 1.00 or greater. Items not loading at least .40 on some factor, and items loading .40 on two or more factors, were eliminated, as were factors defined by less than three items. Based on these criteria, the oblimin rotation produced a five-factor solution accounting for 50% of the variance. The factors were labeled Performance Concerns, Fear of Physical Harm, Lack of Recognition, Time Pressure, and Interpersonal Conflict. The factor label Performance Concerns replaced the label Fear of Failure used in earlier studies for a factor composed of such items as "Critical decisions during a game", "Maintaining concentration during a strenuous game", and "Making a bad call". It was felt that the label Performance Concerns described the factor better and had fewer negative connotations than Fear of Failure. The five factors were all significantly intercorrelated, with the coefficients ranging from .17 to .28, $p < .05$. Thus, it was decided to retain the oblimin rotation for correlated factors.

The means and standard deviations for each factor, their eigen values, and the percentage of variance accounted for by each factor are reported in Table 1. These data indicate that referees rated Interpersonal Conflict their highest source of stress, though they rated the items

Table 1
Mean Factor Scores and Standard Deviations, Eigen Values, and Percentage of Variance Accounted for by Five Sources of Stress Factors from the Oblimin Rotation

Factors	<i>M^a</i>	<i>SD</i>	Eigen Value	% Variance
Performance Concerns	.99	.63	7.63	24.6
Fear of Physical Harm	.17	.40	2.39	7.7
Lack of Recognition	1.15	.76	1.95	6.3
Time Pressure	1.12	.83	1.89	6.1
Interpersonal Conflict	1.35	.62	1.59	5.1

^aThe response rating scale for items making up each factor was 3 (*strongly*), 2 (*moderately*), 1 (*mildly*), 0 (*did not*).

loading on Interpersonal Conflict as only mild to moderate sources of stress. Furthermore, though three items loaded on the factor labeled Fear of Physical Harm, the referees generally indicated that these items did not contribute to their stress. Cronbach's alpha was computed to assess the reliability of the five factors. The alphas, which were all of adequate magnitude, were: Performance Concerns = .75, Fear of Physical Harm = .77, Time Pressure = .78, Lack of Recognition = .70, and Interpersonal Conflict = .78.

Confirmatory Factor Analysis

Confirmatory factor analysis for correlated factors was then conducted using Lisrel8 (Joreskog & Sorbom, 1993). The initial model specified 22 items loaded on five factors and analyzed the correlation matrix of the items. Lisrel8 estimated the loading of each item on its hypothesized factor, and all loadings not targeted were specified at zero.

The adequacy of Lisrel8 solutions was assessed with four summary statistics: the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the ratio of χ^2/df , and the root mean square residual (RMR), an average of the fitted residuals between the observed and reproduced correlation matrices. Pedhazur and Schmelkin (1991) have stated that GFI's > .9, AGFI's > .8, and RMR's equal to or less than .05 indicate a good fit for a model. Also χ^2/df ratios of 2-3 are considered an indication of a good fit.

The Lisrel8 analysis of the initial model yielded a GFI < .9 and an RMR > .05. A second model was hypothesized by removing two items from the Performance Concerns factor and one item each from the Fear of Physical Harm and Lack of Recognition factors. All four of these

items had very low factor loadings on their respective latent variables. The analysis of the second model produced the following goodness of fit statistics; GFI = .94, AGFI = .91, RMR = .05, and the ratio of $\chi^2/df = 1.8$. The items associated with each factor, and their factor loadings, are reported in Table 2. Based upon the goodness of fit statistics, it was concluded that these factors possessed adequate reliability to be entered into the structural equation models assessing the hypotheses about the relationships among the sources of stress, age, burnout, and intention to terminate refereeing.

Table 2
Factor Loadings for Basketball Referees' Sources of Stress

Sources of Stress Items	Factor Loadings				
	I	II	III	IV	V
<i>Performance Concerns</i>					
Critical decisions	.72				
Maintaining concentration	.71				
Critical games	.70				
Making a bad call	.66				
<i>Fear of Physical Harm</i>					
Assault by coach/spectator		.78			
Threat of assault by player		.77			
Assault by player		.77			
<i>Lack of Recognition</i>					
No recognition for good officiating			.78		
Little recognition for officials			.76		
Not selected for important games			.66		
<i>Time Pressure</i>					
Conflict with family/social demands				.85	
Others wish you spent more time				.81	
Conflict of officiating with work demands				.76	
<i>Interpersonal Conflicts</i>					
Verbal Criticism from players/coaches					-.76
Dealing with excited/hostile coaches					-.69
People protest decision but don't know rules					-.62
Verbal criticism from spectators					-.61
Dealing with abusive players					-.60

Relationships among the Structural Model Variables

Prior to assessing the hypothesized structural model, a preliminary analysis was conducted to assess the first-order correlations among the variables involved in the structural model: age, the five sources of stress factors, burnout, and intention to quit refereeing. The correlations are reported in Table 3. These figures indicate that burnout was significantly correlated with age and all of the sources of stress factors. The negative correlation between age and burnout is consistent with the findings of Taylor et al. (1990) and Rainey (1995b). Age was also very modestly, but significantly, associated with intention to quit refereeing. However, only two of the sources of stress factors, Performance Concerns and Interpersonal Conflict, were significantly related to intention to quit refereeing, and the correlations are quite small.

Assessing the Fit of the Predicted Structural Model

Given the pattern of first order correlations, it was deemed appropriate to test the hypothesized structural model, which slated that Performance Concerns, Time Pressure, and

Table 3
**First-order Correlations among Age, Burnout, Intention to Quit Refereeing,
 and Five Sources of Stress Factors**

Age	Burnout	Quit	Performance	Harm	Lack	Time	Conflict
Age	-.12**	.08*	-.03	.01	.02	-.22***	-.06***
Burnout		.24***	.44**	.16***	.31***	.32***	.53***
Intention to Quit			.08*	.06	.06	.02	.11**
Performance Concerns				.20***	.28***	.28***	.51***
Fear of Harm					.14***	.13***	.25***
Lack of Recognition						.25***	.42***
Time Pressure Interpersonal Conflict							.28***

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

Interpersonal Conflict would predict burnout and that burnout and age would predict intention to quit refereeing. No Lack of Recognition Factor had been hypothesized for this study. However, Taylor et al. (1990) identified a variable, which reflected lack of recognition for officials, that they labeled Role-Culture Conflict. Since their Role-Culture Conflict factor predicted burnout, Lack of Recognition was entered into the current model along with the other sources of stress factors as a predictor of burnout.

The attempt to fit the hypothesized model was not completely successful. Lack of Recognition did not significantly predict burnout. An alternative model was tested in which Lack of Recognition predicted intention to terminate refereeing, but this model also did not fit the data. Lack of Recognition was removed from consideration, and a model was tested in which Performance Concerns, Time Pressure, and Interpersonal Conflict predicted burnout, and burnout and age predicted intention to terminate refereeing. The regression weights for all of these variables were significant, and the Goodness of Fit Statistics were as Burnout follows: GFI = .97 AGFI = .96 RMR = .03, and $\chi^2/df = 1.6$. Based upon the standards proposed by Pedhazur and Schmelkin (1991), it was concluded that the fit of this model is adequate. The model is pictured in Figure 1.

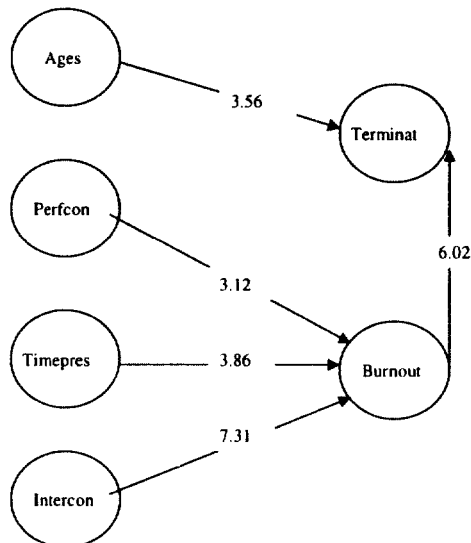


Figure 1. Supported structural model (with t 's, all p 's < .05) for sources of stress, age, burnout, and intention to terminate among basketball referees.

The two structural equations for this model, with their standard regression coefficients, standard errors, corresponding *t*'s, and variance accounted for are reported below:

$$\text{Burnout} = .18 \times \text{Performance Concerns} + .15 \times \text{Time Pressure} + .46 \times \text{Interpersonal Conflict} \quad R^2 = .44$$

	(.06)	(.04)	(.06)
<i>t</i> =	3.12	3.86	7.31

$$\text{Intention to Terminate} = .26 \times \text{Burnout} + .13 \times \text{Age} \quad R^2 = .08$$

	(.04)	(.04)
<i>t</i> =	6.02	3.56

The mean, standard deviation, and Cronbach alpha for each of the latent variables in this model (except for age) are reported in Table 4.

Discussion

The first hypothesis, that four factors would emerge from a factor analysis of the referees' responses to the revised OSOS, was partially supported. Fear of Failure (renamed Performance Concerns), Fear of Physical Harm, Interpersonal Conflict, and Time Pressure did emerge. These factors are consistent with those reported by Stewart and Ellery (1998) and Rainey (1995a), and they are very similar to those reported by Taylor and Daniel (1987) and Goldsmith

Table 4
Means, Standard Deviations, and Cronbach's Alphas for Latent Variables in the Supported Model

* Latent Variables	<i>M</i>	<i>SD</i>	<i>Alpha</i>
Performance Concerns	3.85	2.47	.75
Time Pressure	3.34	2.49	.78
Interpersonal Conflict	6.72	3.13	.78
Burnout	15.42	6.27	.83
Intention to Quit	3.97	2.26	.96

*Number of items: Performance Concerns = 4; Time Pressure = 3; Interpersonal Conflict = 5; Burnout = 16; Intention to Quit = 3.

and Williams (1992). However, a fifth factor, labeled Lack of Recognition, also emerged from the factor analysis. The three items loading on this factor reflect the referees' concerns about not receiving adequate acknowledgment for their efforts and accomplishments, and this factor received the second highest mean rating from the basketball referees. The results of this study are also consistent with the earlier studies in that the mean ratings for all five sources were relatively low. Performance Concerns, Interpersonal Conflict, Time Pressure, and Lack of Recognition were all rated as only "mild" sources of stress, and Fear of Physical Harm was essentially identified as a factor that "did not" contribute to the referees' stress.

The second hypothesis, that Performance Concerns, Interpersonal Conflict, and Time Pressure would predict Burnout scores, and that age and Burnout would predict Intention to Terminate, was supported. The three sources of stress factors did predict Burnout, accounting for 44% of the variance in Burnout scores. These results are fairly consistent with past research. Fear of Failure (Performance Concerns) and Interpersonal Conflict were significant predictors of Burnout among both baseball/softball umpires (Rainey, 1995b) and soccer officials (Taylor et al., 1990), and Time Pressure was a significant predictor of Burnout for the baseball/softball umpires (Rainey, 1995b). In this sample, Fear of Physical Harm and Lack of Recognition were not reliable predictors of Burnout (nor of Intention to Terminate). The failure of Fear of Physical Harm to predict burnout is consistent with the findings of both Rainey (1995b) and Taylor et al. (1990). Thus, three studies have now suggested that concerns about being physically harmed by participants and fans do not contribute to the burnout of sport officials, despite the fact that a number of studies have reported that sport officials are sometimes assaulted (Rainey, 1994b; Rainey & Duggan, 1998). Of the three sources of stress, Interpersonal Conflict was by far the strongest predictor of burnout (Beta = .46). This was also true among baseball/softball umpires (Rainey, 1995b; Beta = .48), and among soccer officials Interpersonal Conflict was the second strongest predictor (Taylor et al., 1990; Beta = .21). It appears that hostile encounters with players, coaches, and fans are consistent contributors to the burnout experienced by sport officials.

The second part of the structural model hypothesis was also supported, as burnout and age were significant predictors of intention to terminate refereeing. Together these variables accounted for a very modest 8% of the variance in intention to terminate. Rainey (1995b) and Taylor et al. (1990) also reported that Burnout was a very modest predictor of intention to terminate, so three studies have now supported models in which burnout is a mediating variable between sources of stress and termination intentions. All three studies have also reported that age is inversely related to burnout. However, Rainey (1995b) reported that age did not predict terminations intentions. In contrast, Taylor et al. (1990) and the current study both found that age predicted intention to terminate. This pattern of results suggests that age may

be a more important factor in termination for sport officials whose duties involve a great deal of movement (such as soccer and basketball officials) than for sport officials whose duties are relatively more stationary, such as baseball or softball. Finally, consistent with both Taylor et al. (1990) and Rainey (1995b), the absolute scores for burnout and intention to terminate were very low among the basketball referees. On the average, the referees reported that the 16-burnout experiences on the revised MBI “rarely” affected them, and only 3% of the referees reported an average frequency for burnout experiences of “sometimes” or “often”. Similarly, the mean response to questions about terminating refereeing was between “unlikely” and “definitely will not”, and less than 4% of the referees stated that they “likely” or “definitely” would quit refereeing.

Conclusions and Directions for Future Research

Based upon the current study and four prior studies (Taylor & Daniel, 1987; Goldsmith & Williams, 1992; Rainey, 1995a; and Stewart & Ellery, 1998) it appears that Performance Concerns, Interpersonal Conflict, and Time Pressure are mildly related to the stress experienced by a variety of sport officials. A fourth issue, Fear of Physical Harm, is consistently identified, but the officials deny that it contributes to their stress. Based upon the current study and two other studies (Taylor et al., 1990; Rainey, 1995b), Performance Concerns, Interpersonal Conflict, and Time Pressure appear to regularly contribute to the burnout experiences of sport officials, though the officials have consistently characterized their burnout experiences as “rare”. Finally, the same three studies suggest that these rare burnout experiences contribute in a very modest way to the intentions of sport officials to terminate their officiating activities, and most officials surveyed have reported that they intend to continue officiating. When added to the fact that other studies report that the actual magnitude of stress experienced by most sport officials is low (Rainey, 1994a; Rainey & Winterich, 1995; Stewart & Ellery, 1996; Rainey & Hardy, 1997), one could conclude that stress, burnout, and intention to terminate are not concerns for sport officials.

This conclusion may well prove to be true, but it may also be premature. First, the number of studies reported, and the number and variety of sport officials surveyed, are still quite small. It is possible that stress and burnout are more significant problems among officials from other, unsampled sports, for example ice hockey, lacrosse, rugby, gymnastics, or others. Second, investigators have consistently reported that there are a minority of officials in every group who report high magnitudes of stress (Rainey, 1994a; Rainey & Winterich, 1995; Rainey & Hardy, 1997) and frequent burnout experiences and/or a high likelihood of termination (Taylor et al., 1990; Rainey, 1995b; and the current study). Third, it is possible that the identified sources of stress and/or burnout may be related to unfortunate consequences other than

termination. For example, it seems plausible that these variables may be related to satisfaction, somatic symptoms, and even performance.

With these questions in mind, there are a number of directions for future research. First, it is still worthwhile to examine sources of stress and burnout among sport officials from other sports and other cultures. Sources of stress may be more salient and burnout more common in other settings. Second, much could be learned about stress and burnout among sport officials by designing effective methods for identifying the minority of officials who do experience significant stress and burnout and providing prevention or intervention programs to help them. Finally, future studies should examine the possible relationships between stress, burnout, and other negative consequences, such as reduced satisfaction, somatic complaints, and impaired performance.

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