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Abstract: With governments in many western countries implementing sport policy programs directed at increasing levels of participation, stress is being placed on the capacity of sport systems to provide sufficient numbers of appropriately accredited officials. However, with declining numbers of officials, particularly early career officials, sport organisations are also facing management problems in relation to the retention of existing officials. Using a quasi-experimental 2 x 2 field-based research design this study explored the efficacy of organisational support aimed at increasing retention of early career sports officials. The research addressed two questions: (1) Do stressors of officiating, commitment and organisational support predict the intention of early career officials to continue officiating? And, (2) What is the efficacy of organisational support in increasing the intention of early career officials to continue officiating? The results support previous research that stressors and commitment explain intention to continue. Intention to continue was found to be a stable construct that was not influenced by an organisational support program. Despite significant zero-order relationships between organisational support and intentions to continue, organisational support explained no additional or unique variance above that explained by commitment and stressors of officiating. The results provide the basis for further research as well as insights for developing organisational support and retention strategies for sports officials.

All corrections have been made in the revised manuscript:

1. Pg 7 line 26 - remove "for" from the sentence: "...they neglected to control for years experience as an official."
2. Pg 9 line 22 - font difference in quotation marks used is Mowday et al. (1982) quote.
3. Pg 12 line 10 - remove or explain "..." before quote.
4. Pg 17 line 23 - remove "a" from the sentence: "...along with a details about financial outlays..."

Sports officials' intention to continue[1]

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Highlights:

- Examines stress, commitment and organisational support amongst early career sports officials.

- Tests the efficacy of an organisational support program in relation to intention to continue.

- Using quasi-experimental design finds that stressors and commitment explain intention to continue.

- Perceived organisational support does not explain any additional or unique variance in intention to continue.

Sports Officials' Intention to Continue

Governments in many parts of the world including, but not limited to Australia, Canada, the United States, the United Kingdom and many parts of Europe have sport policy goals and programs designed to encourage increased levels of participation in sport and physical activities. Axiomatically, policies and programs aimed at encouraging higher levels of participation, particularly in organised and competitive sport, require greater capacity within the sport delivery system. Because sports officials[1] have a central role in organised and competitive sport they are important to the achievement of such policy goals. In turn, sports officiating is a significant management problem for most sport organisations in that almost without exception, organised competitive sport requires appropriately accredited and trained officials to officiate at predetermined times and locations in order for sporting competitions to proceed and hence participation opportunities to be delivered effectively.

Having a sufficient number of sports officials to meet the demand for increased levels of participation in organised competitive sport can be achieved through any one or a combination of three actions. First, recruitment of additional sports officials where sport managers work at attracting more people to take on roles as sports officials. Second, improving productivity where sport managers negotiate increases in the workload of current sports officials by allocating more games per official or allocating fewer officials per game. Finally, increased retention where sport managers concentrate their efforts on reducing average rates of attrition and increasing the career length of current sports officials through improved training and organisational support strategies.

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[1] For the purpose of this study a sports official was operationally defined as "any person who controls the actual play of a competition by using the rules and laws of the sport to make judgments on rule infringement, performance, time and score. Officials play a key role in ensuring the spirit of the game and/or event is observed by all" (SPARC, 2012). The term sports official is often used interchangeably with terms such as referee, umpire or judge, for example. Sports official is used as a broad and inclusive term in this study. For accuracy when quoting published research or when referring to a particular sport in which the term sports official is not widely used it is substituted by a more precise or culturally appropriate term such as referee or umpire.

Statistics on organised sport and physical activity provide an opportunity to explore the impact of policies aimed at increasing participation in organised sport at a national level. For example, the Australian Bureau of Statistics (ABS) (2010) reported that approximately 4.5 million people (26% of the population) aged 15 years and over participated in organised sport and physical activity. This does not include those aged less than 15 years who participate in junior (youth) or school sports. The ABS (2011) estimated that almost 1.7 million children aged 5 to 14 years participated in organised sport outside of school hours. Though slightly lower than earlier surveys the proportion of the population who participated in sport and physical activity in 2010 is consistent at 27% with similar surveys in 2001, 2004 and 2007. Further, with an increasing population the number of people involved in organised sport has been increasing in real terms. Of the 4.5 million organised sport participants in 2010, almost 1.6 million were involved on non-playing roles (9% of the population aged 15 years and over) of which 313,000 were officials. A challenge for a growing sport system and consequently for those managing sport is the need for more officials to facilitate participation in organised competitive sport.

Having an adequate number of sufficiently trained and experienced sports officials is an important issue for sport organisations particularly when the average career length of many officials is relatively short. The ABS (2010) reported that more than half of all officials (51.9%) were involved for less than five years. Further, less than one-third of officials (27.2%) have 10 years or more experience. These statistics suggest that the retention of officials is a problem for the sport system and this is borne out by other evidence. ABS (2004) statistics on the number of active officials within the Australian sport system revealed a decline of 21.2% from 1993 to 2004 from 435,800 active officials to 335,400. Officiating numbers appear to have declined further with the ABS reporting 313,000 officials in 2010. Similar concerns are evident in North America. In Canada, the number of adult Canadians who volunteered as referees, officials or umpires decreased 15% to 800,000 in 2005 after it peaked at 937,000 in 1998 (Statistics Canada, 2008). According to Deacon, McClelland and Smart (2001) 30% of officials in the Canadian Hockey

Association quit each year, as do two thirds of first year soccer officials in the province of Manitoba. In a survey by the National Association of Sport Officials (Sabaini, 2001) in the US, 85% of high school sports administrators reported a decline in the number of sports officiating registrations in their State.

Sports officials are an essential element in the quality of most sporting contests. They provide a setting for competition, facilitate the engagement of individual players and, importantly enhance the process of fair play (Grunska, 2002). Through their engagement in sporting contests and their authority to influence the course of a game, sports officials directly influence, positively or negatively, the quality of the sporting experience both for players and spectators. Though often maligned by participants, spectators and the media it is difficult to imagine sporting contests without sports officials. In broad terms sports officials facilitate involvement in physical activity and resultant health and social benefits for participants. Furthermore, many of the skills learned through becoming a sports official contribute indirect social and economic benefits. Currently active sports officials and the many thousands more who no longer officiate have received training that is as applicable to broader society as it is to the sporting field. Sports officials receive training and learn through experience to make decisions under pressure; manage and resolve interpersonal conflict; understand, interpret and apply rules in an equitable and fair manner; and develop skills in managing stress and their own emotions (Cuskelly & Hoye, 2004).

One does not need to search the print, broadcast and online news media extensively or spend a great deal of time observing sporting contests, either at a community or the professional level, to find examples of sports officials facing some form of abuse. Ironically, individuals choose to become involved in sports officiating usually with full knowledge that they are likely to be subjected to verbal abuse, threats and intimidation, and at times, physical confrontation and in extreme cases, physical violence. Kellett and Shilbury (2007) found that sports officials routinely reframe abuse and consider abuse as a normal part of their role. Further, they found no evidence that abuse contributes to attrition amongst officials. Research by Cuskelly and Hoye (2004) found

evidence of higher turnover rates amongst sport officials with the least experience. Higher rates of turnover amongst less experienced officials was attributed to such officials often being younger than more experienced officials and having less knowledge of the rules and their application. As a result, younger and less experienced officials are more likely to be verbally abused and intimidated (Folkesson et al., 2002) by players, coaches and spectators and may experience higher levels of stress (Kaissidis & Anshel, 1993).

The purpose of this study was to examine the efficacy of organisational support strategies aimed at increasing the retention of early career sports officials. Early career officials were the focus of this study because most sports officials quit within the first five years of becoming initially accredited (Cuskelly & Hoye, 2004). Focussing on early career officials was considered important because organisational support strategies designed to increase retention are likely to have the greatest impact with the least experienced officials. In contrast, management strategies aimed at increasing the productivity of current officials or recruiting more officials, though likely to alleviate shortages of sports officials, may lead to other problems. Recruiting new officials would tend to exacerbate the abuse problem faced by younger or less experienced officials and increasing the workloads of current officials may lead to burn out and increased turnover.

REVIEW OF RELATED LITERATURE

Over the past three decades sports officiating research has focussed predominantly on explaining the performance of officials or the intentions of officials to terminate their involvement. Sports officiating performance research has examined the decision-making skills of officials (see MacMahon, Helsen, Starkes & Weston, 2007), factors affecting the physiological and cognitive performance of sports officials (see Larsen & Rainey, 1991; Rainey & Schweickert, 1991; Helsen & Bultynck, 2004; Plessner & Haar, 2006; MacMahon & Starkes, 2008; Mahoney, Devonport & Lane, 2008; Guillen & Feltz, 2011) with a particular focus on the personalities and attitudes of officials (see Alker, Straub, & Leary, 1973; Fratzke,1975; Mitchell, Leonard , & Schmitt, 1982;

Phillips, 1985 ; Ittenbach & Eller, 1988; Quain & Purdy, 1988; Brand & Ness, 2004;

Mascarenhas, Collins & Mortimer, 2005; Balch, & Scott, 2007; Auger et al., 2010;).

Intention to leave officiating is the line of research which motivated this study. Since the

late-1980s a growing body of research has focussed on stress and intention to leave amongst

sports officials. The germination for much of this research was a study by Taylor and Daniel

(1988) who investigated sources of stress amongst soccer officials in Canada. Subsequent studies,

particularly by Rainey and colleagues, have demonstrated that stress is a predictor of burnout and

burnout explains intention to terminate among sport officials (Taylor et al., 1990; Schmidt &

Stein, 1991; Rainey, 1994, 1995a, 1995b; Anshel & Weinberg, 1996; Rainey & Duggan, 1998;

Rainey & Hardy, 1999). However, the burnout hypothesis explains either a small or non-

significant amount of variance in intention to leave suggesting that an alternative approach to

explain stay or leave intentions amongst sports officials may be required. In researching age-

group swimmers, Raedeke (1997) found that a commitment perspective goes beyond the notion

that burnout is a simple consequence of chronic stress. Commitment is an important factor in

predicting intention to stay or leave and it has been shown to positively predict intention to stay in

a variety of organisational settings (eg., Meyer & Allen, 1997), including voluntary sport

organisations (eg., Cuskelly & Boag, 2001). Commitment has also been used to explain

individuals' participation in sporting activities through the sport commitment model (Carpenter &

Scanlan, 1998; Scanlan et al., 2003). However, aside from a study by Van Yperen (1998),

commitment has not been not been used to explain sports officials intentions to stay or leave.

In order to address retention problems amongst early career sports officials, it was

considered timely to bring two significant but separate lines of research inquiry together through

a field based quasi-experimental research design. Sports officiating is clearly a stressful activity

and the negative aspects of stress, over the longer term, are likely to negatively influence

intentions to continue. In contrast, sport commitment is likely to have a positive influence on

intentions to continue officiating. Sport organisations that are better prepared to manage the

negative consequences of stress and build on the more positive aspects of commitment though appropriate training and support programs may achieve better outcomes in the retention of early career officials.

Stress and stressors of officiating

Stress is experienced by most sports officials and may be associated with the physiological, cognitive and emotional demands of the act of officiating. Before examining the stressors of officiating it is important to understand the concept of stress particularly from an occupational perspective. A widely quoted definition of work related stress is "the adverse reaction people have to excessive pressures or other types of demand placed on them at work" (HSE, 2012). It is important to acknowledge that not all forms of stress are negative; stress is a part of life that individuals experience constantly and it may not always have negative connotations. Two terms are used to describe different types of stress; eustress, describing positive stress (Selye, 1978), and distress, describing negative stress (Little, Simmons & Nelson, 2007). The perception of stress by an individual is derived from their cognitive appraisal of an event and their response to it. Some individuals will minimise problems and not have any negative effects from the distress they are under. Stress, therefore, "is unwanted pressure and is manifest when we feel that a situation is out of our control, or when we feel unable to cope with the event. It is a subjective experience that is 'in the eye of the beholder'" (Weinberg, Sutherland & Cooper, 2010, p. 71).

Weinberg et al. (2010) describe response-based, stimulus-based and an interactive model of work stress. They discuss five key characteristics of the interactive model which include cognitive appraisal (an individual's perception of situation or event), experience (previous exposure or conditioning and training to cope), demand (the product of actual and perceived demands, and actual or perceived ability to meet that demand), interpersonal influence (the presence or absence of other people or work colleagues and their influence on perceptions of stress) and a state of stress (a mismatch between perceived demand and one's ability to meet that

demand, coping processes and the consequences of applying coping strategies). Weinberg et al.

(2010, p. 69) argued further that "situations are not inherently stressful, but are potentially

stressful, and it is necessary to take account of: the source of stress (stressor), the mediators or

moderators of the stress response . . . [and] . . . the manifestation of stress".

Sports officials are likely to experience "work" stress often associated with highly

demanding occupations and as reported by Kellett and Shilbury (2007) routinely face verbal

abuse. In order to understand the manifestation of stress and how sports officials might cope with

stressful situations it is important to be able to identify and understand the source and magnitude

of stress and its impacts. Over the past two decades, most research on the subject of sports

officials and stress has focussed on understanding sources, coping strategies and the impacts of

stress, particularly turnover or intention to terminate.

Taylor and Daniel (1988) were amongst the first researchers to identify sources of stress

which they labelled stressors of officiating in their widely cited study of soccer officials in

Canada. The instrument developed for that study, the Ontario Soccer Officials' Survey (OSOS)

has been used and refined in many subsequent studies. Taylor et al. (1990) built on this work and

incorporated burnout as a mediating variable in a process model explaining the direct and indirect

links between stressors and turnover intentions amongst sports officials. During the mid to late

1990's, Rainey and colleagues published a number of studies which focussed predominantly on

sources, ratings and the magnitude of stress experienced by sport officials as well as burnout and

consequences such as intention to terminate (Rainey, 1994, 1995a, 1995b, 1999; Rainey &

Winterich, 1995; Rainey & Hardy, 1997, 1999; Rainey & Duggan, 1998). Stewart and Ellery

(1996, 1998) and Stewart et al. (2004) have also researched sources and magnitude of stress using

the OSOS and their findings have been consistent with many other studies. Other research has

considered age and level of certification of officials in relation to stress. As alluded to earlier,

Kaissidis and Anshel (1993) found that adolescent officials were more stressed than adult

officials, however, they neglected to control years experience as an official. Dorsch and

Paskevich (2007) studied the influence of certification level on the sources and intensity of stressful events and found evidence that lower level officials experience less stress than higher level officials. Importantly, they concluded that long-term exposure to high levels of stress could lead to termination from officiating and that training and support programs need to take into account differences in stressful experiences faced by officials with different levels of certification.

With some variation, as might be expected across a wide range of sports officiating and research contexts, the most frequently identified stressors of officiating include: (1) Time pressure where the official has to keep up with the competing responsibilities of devoting enough time to their family or significant others, while still finding enough time to prepare themselves to officiate; (2) Lack of recognition of officials in society at large, as well as lack of recognition for good officiating performances from the individual's own club or association; (3) Fear of physical harm from players or spectators; (4) Performance concerns, being able to make the correct decisions at the right time in games; and, (5) Interpersonal conflict with co-officials, players and team coaches (Taylor et al., 1990; Anshel & Weinberg, 1996).

It was argued earlier that sports officials expect to experience varying degrees and levels of stressful events. In the absence of effective coping strategies and management support, officials may experience problems coping with high levels of occupational stress, particularly sports officials with the least officiating experience. Voight (2009) reported that the primary stress coping strategy used by sports officials was asking fellow officials what they did; a form of social or perhaps organisational support. The extent to which stressors are perceived to be negatively affecting their officiating experience is likely to impact negatively on their intention to continue. Rather than pursue the issue of stress in relation to intention to terminate this study took an alternative approach. The question was whether organisational support strategies can mitigate the potentially negative impacts of stress and improve the intention of sports officials to continue participating.

Commitment

The retention of early career sport officials is not only a function of mitigating the negative consequences of the omnipresent stressors of officiating. Commitment has long been studied in the context of management and organisational behaviour research and has been found to be a predictor of retention in occupational settings, (eg., Mowday, Porter & Steers, 1982; Rusbult & Farrell, 1983; Meyer & Allen, 1997; Hatcher, 1999; Dam, 2005, Harman et al., 2007) and voluntary sport organisations (eg., Cuskelly & Boag, 2001; Cuskelly, 2004; Hoye, 2007; Sakires, Doherty & Misener, 2009) as well as job performance, citizenship behaviour and absenteeism in a variety of settings (eg., Meyer & Allen, 1997; Carbery et al., 2003; Fuller et al., 2003). Commitment is therefore likely be an important factor in the retention of sports officials. Before examining the commitment of sports officials it is important to define and describe the broader concept of commitment which has been recognised and studied in the social sciences for five decades. The ground-breaking work of Kelman (1958) and Becker (1960) explored the notion of commitment in social settings. Later research has focussed on organisational commitment in order to better understand and explain the behaviour of employees (Mowday, Porter & Steers, 1982; Myer & Allen, 1997). Commitment is important to understanding the retention of sports officials, not least because it helps delineate the conditions under which commitment is likely to develop and the consequences of high or low levels of commitment. Sports officials engage in consistent lines of activity through their involvement in officiating and are likely to feel somewhat compelled to continue officiating through various social mechanisms.

Mowday, Porter and Steers (1982) took an attitudinal approach in applying their conceptualisation of commitment to an organisation as "the relative strength of an individual's identification with and involvement in a particular organization" (p. 27), which can be characterised by (a) a strong belief in and acceptance of the organisation's goals and values; (b) a willingness to exert considerable effort on behalf of the organisation; and, (c) a strong desire to maintain membership in the organisation (p. 27). Meyer and Allen (1991) proposed a three-

component model of organisational commitment. Affective commitment embodies the notion that individuals become committed because they *want to*. Continuance commitment develops as a result of *having to* become committed due to a lack of alternatives or the sacrifice of a high level of sunk costs that might be incurred in leaving an organisation. Normative commitment is a sense of feeling *obligated* to be committed. Reichers (1985) brought the behavioural and attitudinal approaches together. In proposing a developmental model, Reichers argued that psychological attachments to the organisation tend to occur in the very early stages after organisational entry and behavioural linkages emerge over time. In later stages, structural variables such as investments, sunk costs and lack of opportunities elsewhere (cf. Becker, 1960), act in concert with behavioural and psychological linkages to further strengthen the individual's attachment to the organisation. Behavioural and attitudinal conceptualisations of commitment within the context of work organisations are applicable to understanding the retention of sports officials. However, such frameworks are directed at understanding behaviours in organisational settings and ignore the nature of and commitment to sport as an activity.

Scanlan, Carpenter and colleagues developed the Sport Commitment Model (SCM) in order to explain participation in sport activities (Scanlan et al., 1993b) which built on their earlier work (Scanlan et al., 1993a). Schmidt and Stein (1991) integrated sport commitment into a model which differentiated between athletes who continue their participation from those who drop out and others who burnout. The SCM proposed that sport commitment is determined by sport enjoyment, involvement alternatives, personal investments, social constraints, and involvement opportunities. The SCM has be applied and empirically tested in various sport and physical activity settings including youth sport participants (Scanlan et al., 1993b), football, soccer and volleyball players (Carpenter et al., 1993), elite youth cricketers (Carpenter & Coleman, 1998), elite amateur sports participants (Scanlan et al., 2003), exercise participation (Alexandris et al., 2002), sport coaches (Raedeke et al., 2002), adult tennis players (Casper, Gray & Stellino, 2007), recreational tennis players (Casper & Stellino, 2008) and masters swimmers (Young & Medic,

2011). A study of competitive gymnasts (Weiss, Weiss & Amorose, 2010) found partial support for the SCM but concluded that additional determinants and consequences of commitment be considered in future research. These studies all provide empirical evidence to support the efficacy of SCM. The five SCM determinants have all been found to predict commitment, however, sport enjoyment, personal investments and (lack of) involvement opportunities tend to be the most consistent and strongest predictors.

The SCM has largely been researched in the domain of sport psychology in understanding the determinants of commitment and explaining stay or leave behaviour amongst athletes and sport participants. The SCM is essentially concerned with factors that attract individuals to an activity, the availability and attractiveness of alternate activities and the constraints or investments acting to constrain them from ceasing involvement. Because much of the focus on the stay or leave behaviour on sports officials has concentrated on burnout, turnover and turnover intentions there are very few studies which have considered retention or intention to continue. Van Yperen (1998) investigated the applicability of the SCM to predict stay or leave behaviour of volleyball referees. He found that intention to quit mediated the link between enjoyment and involvement alternatives and stay/leave behaviour. Van Yperen concluded that retaining more referees in volleyball required enhancing affective responses to officiating, largely by ensuring fairness in promotions and the allocation of games and importantly being more diligent in the training and mentoring of referees. Commitment has been a focus of two other studies of sports officials. Gray and Wilson (2008) researched the relationship between organisational commitment, perceived relatedness to fellow officials (based on Self Determination Theory (Deci & Ryan, 2002)) and continuance intentions amongst Canadian track and field officials. They reported that the officials were minimally committed to the organisation (Athletics Canada) but had a strong sense of commitment to their sport and the role of being an official and that perceived relatedness predicted continuance intentions after controlling for commitment and demographic variables. An earlier study by Furst (1991) used a career contingency model and

found that, amongst several other constructs, commitment to sport and the relationships developed as an official were important factors in collegiate sports officials continuing participation.

The stress and commitment research reviewed here suggests that retention rates amongst sports officials might be improved through the provision of organisational support for officials. Such support may help officials deal with the negative impacts of the stressors of officiating while building a stronger sense of commitment to officiating.

Perceived organisational support

Grounded in organisation support theory, Eisenberger et al. (1986), defined perceived organisational support (POS) as an individual's "global beliefs about the extent to which the organization cares about their well-being and values their contributions" (Eisenberger et al., 1986, p. 501). Eisenberger et al. (2001) investigated the role of reciprocation in the relationships of POS with employees' organisational commitment and job performance and found that POS was positively related to employees' felt obligation to care about the organisation's welfare and to help the organisation reach its objectives. A meta-analysis of 167 published studies found that POS had a strong positive effect on job satisfaction and organisational commitment; a moderate, positive effect on employee performance; and a strong, negative effect on intention to leave (Riggle, Edmondson & Hansen, 2009).

Organisational support has been the subject of several studies in sport management which have focussed on coaches but tended to ignore retention or intention to continue. Using a POS framework, Kim and Cunningham (2005) found that affective commitment was positively associated with the job satisfaction of intercollegiate coaches. Dixon and Sagas (2007) found evidence of direct and indirect effects between POS, work-family conflict and job-life satisfaction. Also researching sport coaches, Rocha and Chelladurai (2011) found that affective commitment was a mediator between organisational support and performance. While not directly

linked to the subjects of this study (sports officials) these results suggest that POS is a significant predictor of outcomes important to sport organisations including commitment, satisfaction and job performance. Further, Rainey (1999) identified the need to investigate the mediating effect of organisational support in the relationship between stressors of officiating and the stay or leave decisions of officials.

Of direct relevance to this research was a study of Australian Football League (AFL) umpires by Kellett and Warner (2011). Using a sense of community framework they reported a number of themes that impacted, positively or negatively, on the development of a sense of social community amongst sports officials, including a lack of administration consideration, inequity, competition and common interest. Kellett and Warner concluded that sense of community is an important factor in retaining AFL umpires. While our research took a management approach (organisational support) the Kellett and Warner study raised an important point about the less formalised forms of support which may be available to sports officials through processes driven by sports officials rather than those responsible for managing sports officials.

It has been argued that commitment and stress impact directly, though in opposite directions, on intention to continue officiating. Further, organisational support is a factor in ameliorating the negative influence of stress and building on the positive influence of commitment on intention to continue. Therefore the research addressed two questions: (1) Do stressors of officiating, sport commitment and organisational support predict the intention of early career officials to continue officiating? And, (2) What is the efficacy of organisational support in increasing the intention of early career officials to continue officiating?

METHOD

In order to address the research questions the study was conducted in three interrelated phases: (1) Development of an organisational support program and survey; (2) A pilot study; and, (3) A time-lagged quasi-experimental field based study (main study). The research was approved by the

Human Research Ethics Committee of the first author's University to ensure that data collection and storage protocols, participant confidentiality, and voluntary participation were managed in accordance with current ethical standards for university research.

Phase 1 Organisational support program and survey development

In phase 1 we drew on the literature review, a small panel experts and focus groups with current referees (sports officials) in the sport of rugby to explore the concepts of the stressors of officiating, sport commitment and organisational support from both theoretical and practical perspectives. The aim of phase 1 of the study was: (1) To develop a survey instrument suitable for on-line administration with currently practicing referees; and, (2) To design an organisational support program for early career referees (ECRs).

Participants

There were two separate groups of participants in phase 1—an expert panel and focus group participants. The expert panel members (n = 6) were drawn from State Rugby Union organisations. Participants were employed as Referee/Coach Education Managers. To obtain an external perspective an individual with considerable experience and working professionally in a sport officials' development role for the Australian Sports Commission (ASC) was also recruited to the panel. The focus group participants were currently practicing rugby referees (n =12). Care was taken to ensure that participants selected for the focus group represented both male and female perspectives and varying levels of officiating experience.

Instruments and procedures

Each prospective panellist or focus group participant was contacted initially via email by the Australian Rugby Union (ARU) to provide them with information about the research and request their participation or refusal to participate. Using email a research team member contacted those who agreed to participate to explain the rationale for study, secure their involvement and

negotiate a time to conduct a telephone interview. A total of six telephone interviews (average 40 minutes duration) and two focus groups each over a 90-minute period were conducted in the course of consultation. The interviews and focus groups were recorded via digital voice recorder and transcribed. Interview items collected views on current issues relevant to the retention of ECRs, especially with regard to stressors, commitment to officiating and elements of organisational support thought to influence intention to continue refereeing. These included retention strategies, monetary and staffing resources allocated towards retention strategies, planning, implementation and evaluation of retention strategies.

Data interpretation

Combined with items developed in previous studies (see measures section) the data gathered through the expert panel and focus group interviews were used to inform the development of a survey instrument which was pilot tested in phase 2 of the study. To identify and consolidate themes and commonalities the panel interview and focus group transcripts were analysed using a constant comparison method (Glaser & Strauss, 1967). The measurement scales included in the survey instrument were stressors of sports officiating, sport commitment, POS and intention to continue (ITC) refereeing. A number of demographic and refereeing experience items were also developed in consultation with staff from the ARU.

Phase 2 Pilot study

The purpose of the pilot study phase was to refine the overall design of the survey instrument and the reliability of sub-scale items. Prior to implementing the survey the expert panel were asked to review the survey instrument and comment on face validity of the various items which comprised the measurement scales. Participants for Phase 2 were drawn from rugby referees accredited for less than five years at the time of the study. The sample was drawn from the South-east Queensland region of Australia. Per ethics protocols, individuals aged 15 to 18 years were

allowed to take part in the survey, provided they and their parent or legal guardian jointly signed

an informed consent form. A total of 110 ECRs were invited to participate in the pilot study, of

which a total of 64 referees responded and 58 (53%) provided useable data. Due to the small

number of cases, reliability analysis was used to examine and adjust the wording of or delete

scale items found to be unreliable.

Phase 3 Time-lagged quasi-experimental field (main) study

The main study was a quasi-experimental field-based research design with a sample of ECRs

conducted over a six-month period with the cooperation of the ARU. The within-subjects factor

was time (pre and post organisational support) and the between subjects factor was group

assignment (organisational support and control). Details of the participants, measures, procedures

and data analysis techniques are provided below.

Participants

The study participants were initially recruited by the ARU using a similar approach to that used in

the pilot study but excluded participants from South-east Queensland. The ARU interrogated their

national referees' database and identified a sampling frame of ECRs who could potentially

participate in the study. ECRs were operationally defined, for the purpose of this study, as

individuals who were actively practicing referees and who had achieved their initial accreditation

as a rugby referee no more than five years prior to the commencement of the study. Because the

design of the study included an organisational support program targeting ECRs only regions

where there was a sufficient number of such referees (minimum n = 12) were considered for

inclusion in the sample. A further condition of participation in the study was an agreement by the

regional referees' association to provide a mentor for the duration of the study. Following

agreements being negotiated, referees' associations were randomly designated as "organisational

support" or "control" groups and the ARU arranged the recruitment of study participants.

Organisational support program

The organisational support program was designed to be delivered by group mentors who were contacted initially by the ARU and invited to attend an information session regarding the study. At these sessions the aims of the study were explained as well as the purpose of the organisational support program and the role of mentors. A research team member and a staff member from the ARU facilitated sessions. Mentors (n = 15) participated in a three hour workshop which provided more details about the study and facilitated the development of mentorship skills along with training in a range of support strategies they could provide to ECRs. The workshop trained mentors in: (1) actively listening to ECRs experiences; (2) providing advice for dealing with specific scenarios (e.g., abuse from spectators, anxiety about performance); (3) encouraging ECRs to reflect on their own performance in relation to critical situations; and (4) facilitating resolution of conflict or stressful situations which might be experienced by ECRs. Finally, mentors were instructed to initiate weekly contact with their assigned ECRs and to be available to them by phone, email or in person. The mentors were supported by a research team member and were contacted at least twice during the study to monitor progress and address any problems that may have arisen in relation to their mentoring role.

Measures

Sport commitment, stressors of officiating and POS were considered independent variables and the dependent variable was ITC refereeing. A survey instrument designed for the study collected data on the respondents' age, gender, education and employment (demographics) and details (refereeing background) about their refereeing qualifications, initial reasons for becoming and continuing as a rugby referee, along with details about financial outlays and time expenditure related to refereeing.

Measurement of the stressors of officiating was based on the OSOS (Taylor & Daniel, 1988) and subsequent modifications by Rainey (1999), and Rainey and Hardy (1999). Stressors were measured using 29 items and a five point Likert-type scale (1 = "Not at all'' 2 = "Slightly"; 3 = "Mildly", 4 = "Moderately", 5 = "Strongly"). Five subscales were designed to measure the extent to which the following factors contributed to perceived stress levels: (1) Time pressure; (2) Lack of recognition; (3) Fear of physical harm; (4) Performance concerns; and, (5) Interpersonal conflict. Examples of scale items were: "Others wish you spent more time with them instead of refereeing"; "Dealing with abusive players"; and, "Maintaining concentration during strenuous games".

Commitment to rugby refereeing was measured using a scale based on the sport commitment questionnaire (SCQ) (Scanlan et al., 1993b) and subsequently adapted to sports officiating by Van Yperen (1998). A total 17 items and five point Likert-type scales which varied depending upon the wording of particular groups of items (for example, 1 = "Never" to 5= "Very often"; 1 = "Strongly disagree" to 5= "Strongly agree"; 1 = "Not at all" to 5= "Very much") were used to measure commitment to rugby refereeing. The SCQ subscales measured the extent to which the following factors contributed to commitment: (1) Enjoyment; (2) Involvement alternatives; (3) Personal investments; (4) Involvement opportunities; and, (5) Social constraints. Examples of scale items: "Do you ever think that activities other than refereeing are more interesting?"; "Do you enjoy refereeing rugby?"; and, "I feel I have to continue refereeing rugby so that people won't think I'm a quitter".

POS was measured using the short-form (six item) scale adapted from Eisenberger et al. (1986) by Eisenberger et al. (2001) to ensure that POS was addressed within the context of the ECRs referees' association. Five additional items drawn from the expert panel and focus group interviews supplemented this scale. POS was measured using a seven point Likert-type scale (1 = "Strongly disagree" to 7 = "Strongly agree"). Scale items included statements such as "The

referees' association strongly considers my goals and values in refereeing" and "The referees' association provides me with sufficient on-field support". There were no subscales.

ITC officiating was used as a proxy measure of retention. A total of eleven items based on the Theory of Planned Behaviour (Ajzen, 1991, 2005) were used to assess ITC which was designed as a composite index of attitudinal and behavioural intention. Attitudinal measures were a series of eight statements measured (5 points across the scale) as semantic differentials. For example, "For me to continue refereeing past the end of this season would be (valuable/worthless; possible/impossible; enjoyable/unenjoyable)". Behavioural measures were more direct and used a five-point Likert-type scale (1 = "Strongly disagree" to 5 = Strongly agree") with three statements such as "I want to continue refereeing past the end of this season". There were no ITC subscales. Similar, though not identical, items have been used in other research with sports officials, notably, Gray and Wilson (2008).

Procedures

A total of 242 ECRs agreed to participate in the main study after two follow-ups by the ARU. All 242 participants were enrolled in the study and assigned to either an organisational support or control group. The organisational support sample included 133 ECRs who were assembled into groups of between 6 and 10 participants and assigned a mentor. They were briefed about the study via a short powerpoint presentation delivered via email including the importance of completing both the pre and post surveys. The mentors were asked not to reveal the exact purpose of the organisational support program which was designed to influence the perceptions of organisational support amongst the ECRs. The control group participants included 109 ECRs who were not assigned a mentor. However, the control group participants were briefed about the study using the approach outlined above. At the commencement of the competitive season all 242 ECRs were invited to complete a pre survey on-line and were given the opportunity to opt out of the study at this point. None of the referees contacted chose to withdraw from the study. Follow-

up reminder email messages were distributed two weeks and four weeks after the initial survey

distribution. The participants were asked to provide their year of birth and their mother's pre

marriage name when completing the pre survey to enable post survey responses to be matched to

pre survey responses on a case-by-case basis. Both the pre and post surveys included the four

scales outlined in the measures section. The pre survey also included demographic and refereeing

background information. Study participants were offered a chance to enter into a draw for

licensed merchandise provided by the ARU as an incentive to encourage them to complete and

submit both the pre and post surveys. The estimated time to complete each survey was 15 to 20

minutes using a reliable internet connection. Details about the pre and post survey response rates

are provided in Table 1. In summary the overall pre survey response rate was 58.7% (142 of 242

participants) the overall (useable data) post survey response rate was 42.1% (102 of 242

participants).

[INSERT TABLE 1 ABOUT HERE]

Data treatment and analysis

An exploratory factor analysis (EFA) using maximum likelihood extraction and oblique rotation

was utilised to identify underlying dimensions in the measurement scales. The decision to use

maximum likelihood extraction and oblique rotation is consistent with the recommendations of

Conway and Huffcutt (2003) particularly where the focus is on latent constructs. Because the

sample size was small (n=100) EFA was only used only when the case to variable ratio was at

least five and "communalities [were] 60 or greater" (Worthington & Whittaker, 2006, p. 817).

Latent factors were selected on the basis of a scree slope and an Eigen value of greater than one.

This approach was used with ITC (11 items), POS (11 items) and sport commitment (17 items).

EFAs were run for the pre survey data and items which had factor loadings equal to or greater

than 0.5 were retained. Items that loaded at greater than 0.4 on a second factor (cross-loading items) were dropped as were items which loaded at less than 0.3 on all factors. All items retained from the pre survey EFAs were used in post survey EFAs to cross-validate underlying factor dimensions. Factor loading matrices have been omitted due to space but are available from the authors. For ITC (single factor), POS (single factor) and sport commitment (5 factors) six, eight and seventeen items, respectively, were retained from the pre survey EFA and all loaded at greater than 0.5 on the post survey data. The factor score loadings for each of the pre and post survey EFAs were used to compute weighted (by factor score loading) mean scores for each case for both pre and post survey data. Because the stressors of officiating scale failed the minimum case, the item ratio criteria (29 items and 102 cases), it was not able to be factor analysed as a complete scale.

Hierarchical multiple regression analysis was used to test for significant predictors of ITC with separate regression models for the organisational support and control groups. Prior to running the regression models Pearson r correlation coefficients were computed and only those variables with a significant correlation coefficient ($p<.05$) with the DV (post survey ITC) were included in the regression models. The order in which the IVs were entered was considered important because the DVs and IVs were measured on two occasions and time was the within subjects factor. Because we were interested in explaining unique variance in post survey ITC, pre survey ITC was entered first. The pre survey IVs (sport commitment, stressors of officiating and POS) were entered next. Other than the within subjects factor there was no compelling reason to control the order of entry of these variables so they were entered simultaneously. Similarly, all post survey IVs (sport commitment, stressors of officiating and POS) were entered simultaneously in the final step of the hierarchical regression models. The logic behind entering POS simultaneously with the other IVs was to assess whether POS explained a significant level of unique variance in the DV.

Prior to running separate regression models for the organisational support and control groups 2 x 2 repeated measures ANOVAs were used to examine whether there were significant differences in the ITC and POS scores between the groups over time. The within-subjects factor was time (2 levels—pre and post survey), and the between subjects factor was group assignment (2 levels—organisational support and control). Statistical significance was set at $p<.05$.

RESULTS

The mean age of the ECRs was 29.7 years (SD=13.2 years) and ranged from 15 to 56 years, 92% were male and most were either employed full time (50%), or full time students (44%). Half of the respondents (50%) had completed some form of post high school education. Almost all respondents (91%) were involved in rugby as a player prior to becoming a referee, and 77% were currently touch judges (colloquially known as linesmen) in addition to being a referee. The ECRs self-reported a mean of 47 hours per month (SD=37.1 hours) in all rugby refereeing related activities (which included meetings, training and travel) and refereed a mean of 1.7 (SD=0.91) games per week. Self-reported annual personal expenditure for all refereeing related activities (including transport costs) was AUD$585 ($SD$=$683). There were no significant differences between the demographics or refereeing backgrounds of the organisational support and control groups.

The repeated measures ANOVA results revealed no significant differences between pre and post survey ITC scores, indicating that any observed differences between the organisational support and control group regression models was not due to intergroup differences or changes in ITC scores over time. However, there was a significant difference between the pre and post survey POS scores on the within-subjects factor (F (1,98)=15.52, $p<.001$). Means and SDs are displayed in Table 2. Post hoc t-tests revealed that the organisational support group POS score declined significantly between the pre and post surveys (t=4.02, $p<.001$). The decline in POS was

opposite to what was expected, given that this group received an organisational support program during the rugby season (see Table 2).

 [INSERT TABLE 2 ABOUT HERE]

Predicting intention to continue officiating

The results of the hierarchical multiple regression analyses are summarised in Tables 3 and 4. These results are based on 100 of the 102 ECRs that completed both the pre and post surveys and provided useable data. During the regression analyses two cases were found to be multivariate outliers and both were in the control group resulting in an organisational support group with 51 cases and a control group of 49 cases. The results for both groups show that the IVs in combination explained 72% and 78% of the variance (adjusted R-square) in the DV for the organisational support and control groups respectively. As expected, pre survey ITC explained the largest proportion of post survey ITC even when the other IVs were entered in subsequent steps in the regression models for both groups. POS did not add significantly to the prediction of ITC officiating for either group.

[INSERT TABLE 3 ABOUT HERE]

[INSERT TABLE 4 ABOUT HERE]

Organisational support group

The results of the hierarchical multiple regression analysis for the organisational support group (see Table 3) show that the regression model was significant ($p<.05$) at each step and that the change in R-square was significant at each step ($p<.01$ at steps 1 and 3; and $p<.05$ at step 2). Pre survey ITC had a significant beta weight of 0.62 in step 1, and the regression model

accounted for 37% of the variance in post survey ITC. At step 3, the regression model accounted

for 72% of the variance in post survey ITC. The significant predictors in standardised regression

(*beta*) weight order in the final model were pre survey ITC (*beta*=0.41), sport commitment—

enjoyment (post survey) (*beta*=0.35), stressor—time pressures (post survey) (*beta*=-0.32) and

sport commitment—involvement alternatives (pre survey) (*beta*=-0.25). All predictor variables

regression weights were in expected directions. Notwithstanding an organisational support

program being implemented with this group, POS (pre or post survey) did not account for a

significant and unique proportion of the variance in post survey ITC despite a significant zero-

order correlation coefficient (Pearson *r* =0.29, *p*<.05) for post survey POS.

Control group

The results of the hierarchical multiple regression analysis for the control group (see Table

4) show that the regression model was significant (*p*<.05) at each step. The change in *R*-square

was significant at each steps 1 and 3 (*p*<.01) but not significant at step 2. Pre survey ITC had a

significant *beta* weight of 0.69 in step 1, and the regression model accounted for 48% of the

variance in post survey ITC. At step 3, the regression model accounted for 78% of the variance in

post survey ITC. The significant predictors in the final model and their beta weights were pre

survey ITC (*beta*=0.70), sport commitment—enjoyment (pre survey) (*beta*=-0.31) and

enjoyment (post survey) (*beta*=0.52), and sport commitment—involvement opportunities (pre

survey) (*beta*=-0.46) and involvement opportunities (post survey) (*beta*=0.43). Regression

weights for pre survey ITC and the post survey variables were in expected directions. The

control group was not subjected to the organisational support program, and POS (pre and post

survey) did not account for a significant and unique proportion of the variance in post survey

ITC, despite a significant zero-order correlation coefficients for POS both pre survey (Pearson

r=0.32, *p*<.05) and post survey (Pearson *r*=0.30, *p*<.05).

DISCUSSION

The first research question investigated whether stressors of officiating, sport commitment and POS predicted ITC officiating. Separate regression models, for the organisational support and control groups, found evidence that several stressors and sport commitment factors explained significant variance in post survey ITC after variance accounted for by pre survey ITC was accounted for in the models.

The second question about the efficacy of an organisational support program in increasing ITC was found to be redundant to the extent that POS was not a significant predictor of post survey ITC. Despite significant zero-order correlation coefficients between POS and ITC for both groups, POS did not explain additional or unique variance in post survey ITC over and above that explained by stress, commitment and pre survey ITC. Further investigation, using repeated measures ANOVAs, suggested that any differences observed between the organisational support and control groups was not accounted by intergroup differences or by changes between pre and post ITC. The lack of evidence of between group differences in ITC provided some comfort that the assignment of ECRs to either the control or organisational support groups was not a likely factor in explaining differences in ITC scores. However, a lack of change in the ITC scores within either group also provides evidence that the organisational support program had no effect on the intention of ECRs to continue officiating.

The significant change in the mean POS score for the organisational support group in a negative direction was unexpected given that this group received a specifically designed organisational support program. It is possible that the assignment of officials to an organisational support group heightened their awareness and expectations of a promised organisational support program which may not have been delivered in a timely manner or at the expected frequency or standard due to poor performance on the part of mentors or a lack of relevance of the support program to ECRs. The Kellett and Warner (2011) development of a sense of community approach to the problem of retaining sports officials suggests that informal organisational support

mechanisms may be more effective at retaining sports officials than the more formalised organisational support approach taken in our study. That the mean POS scores of sports officials who had experienced an organisational support program decreased might indicate that more organic processes associated with the development of a sense of community could provide more effective forms of organisational support.

The findings that stressors and sport commitment explain ITC lend support to previously published research (see Taylor & Daniel, 1988; Taylor et al., 1990; Kaissidis & Anshel, 1993; Rainey, 1994, 1995a, 1995b, 1999; Rainey & Winterich, 1995; Stewart & Ellery, 1996, 1998; Rainey & Hardy, 1997, 1999; Stewart et al., 2004; Dorsch & Paskevich, 2007). However, the reported levels of stress were generally at the low end of the scale, with few officials indicating that they feared physical harm, and this source of stress tended to decline during the course of the season. Referees reported increased stress levels in relation to performance concerns and time pressures, particularly within the control group. Those referees who were not provided with additional organisational support, reported increasing levels of performance concerns and time pressures, whereas those who had experienced the organisational support program reported no significant change in their stress levels. For both groups, time pressures (measured as competing demands between refereeing and occupational, family and social responsibilities) negatively influenced ITC refereeing. Even though the mean POS score for the organisational support group decreased there appears to be an indirect influence on their self-reported stress levels. Given these group differences it is plausible that the organisational support program was helpful in ameliorating perceived stress amongst the ECRs.

Commitment scores were stable for both groups, except that the organisational support group reported significant decreases in enjoyment over the course of the season. Enjoyment was a positive predictor of intention to continue refereeing for both groups and in expected directions. The organisational support group reported a significant decrease in enjoyment which was directly associated with a significant decrease in their intention to continue. For the control group,

involvement opportunities (or lack of them) significantly influenced their intention to continue

refereeing. These opportunities were the atmosphere, the good times and excitement of being

involved in the sport of rugby – opportunities that would not be available if they left the

organisation. The organisational support group may have been less concerned with involvement

opportunities to the extent that they were exposed to a program of organisational support.

Therefore, both sport commitment and the stressors of officiating predicted unique and significant

variance in intention to continue. Behavioural intentions however, are subject to an array of

situational and attitudinal influences and the processes at play are often complex and not easily

observed or measured. The usual threats to pre and post test research designs, explained in the

limitations section, apply equally to behavioural intentions. Furthermore, behavioural intentions

are but one factor in the prediction of behavioural outcomes. Azjen's (1991) theory of planned

behaviour identifies a number of important factors (eg., attitudes, subjective norms and perceived

behavioural control) influencing intended and actual behaviours.

The strong evidence from organisational behaviour literature (Eisenberger et al., 1986;

Rainey, 1999; Eisenberger et al., 2001; Kim & Cunningham, 2005; Dixon & Sagas, 2007; Riggle,

Edmondson & Hansen, 2009; Rocha & Chelladurai, 2011) in regard to the efficacy of POS was

not supported by the findings of this study. Organisational support, which was of central

importance to the overall research design, had no significant influence on intention to continue,

over and above the variance explained by sport commitment and stressors of officiating. This

suggests that ITC is a relatively stable measure that was not influenced by either the

organisational support program or other IVs. That said, an unexpected revelation was that in the

organisational support group POS actually declined despite them receiving a program designed to

increase organisational support. A single organisational support item "The referees' association

shows little concern for me (reverse coded)" was a significant predictor of intention to continue

for the organisational support group only. This component of the POS construct may be worthy of

additional exploration to the extent that the organisational support program demonstrated that this

group of referees perceived that their association was concerned about them and that they intended to continue refereeing. Alternatively, the ECRs may have little knowledge or sense of belonging to their referees' association and that when responding to the POS scale items their focus was on their mentor rather than the referees' association per se.

While the regression models were supported by previous theoretical and empirical research, to conclude that intention is causally related to commitment, stress and organisational support requires evidence beyond what was provided by this study. Firstly, the correlation or association between the dependent and independent variables indicates that there was evidence for commitment and stress change scores, but only one component of organisational support. Secondly, both the independent and dependent variables were measured with the same survey instrument pre and post with the potential for the validity of the results to be affected by common method variance. Finally, there may be non-spurious relationships between the IVs and DV. The two independent variables, one moderating and one dependent variable accounted for only a small proportion of variance in the dependent variable. There may be other variables that account for the variance shared by the variables measured in this study, including perceived supervisor support (PSS) – the perception that referees have of their immediate referee supervisor or mentor.

It is important to note that this study has several limitations. Firstly, the OSOS, while employed by previous researchers, has been criticised for explaining small amounts of variance in sports officials' intentions and behaviours (see Rainey & Hardy, 1999). However, it was employed in this study in order to facilitate direct comparison of our results to previous research. Secondly, this study was based on a small and geographically concentrated sample of sports officials selected from one field-based sport, (rugby). The results cannot claim to be fully representative of all rugby officials to the extent that officials who were less likely to continue may have been disinclined to respond to the survey. Finally, it is difficult to estimate the impact of the usual threats to internal validity caused by non-treatment factors in pre and post test

designs which include subject maturation, sample mortality, testing, history and selection (Campbell & Stanley, 1963).

Retaining officials not only reduces recruitment and training costs, it increases the depth of officiating talent available to sport. However, implementation of significant changes to organisational support programs for officials is ill-advised at this stage. If managed appropriately, lower levels of turnover results in a more experienced pool of officials, who through more time on the field officiating develop and refine their skills. Further research might entail a similar study with larger sample groups to enable more sophisticated analytical techniques such as Structural Equation Modelling to be applied to the data. There is also a need to further develop and refine the concept and measurement of organisational support and stress amongst sports officials. For example the OSOS has been criticised for its lack of sensitivity in explaining significant amounts of variance. Some mentors may have been more committed and engaged in delivering the organisational support program. Therefore, more rigorous procedures for recruiting, training and monitoring mentors may ensure consistent implementation of the organisational support program. Finally, the application of qualitative research methods in this context may provide additional and valuable insights into the experiences of sports officials, particularly in relation to how they cope with certain types of stressors, and the relative influence of different types of organisational support on and their future intentions to officiate.

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Table-1

Table 1.
Pre- and post- surveys distributed and returned.

Questionnaires	Total	Organisational Support group	Control group
Pre-survey			
Distributed	242	133	109
Useable questionnaires returned (no missing data)	142	72	70
Response rate (%)	58.7%	54.1%	64.2%
Post-survey			
Distributed	142	72	70
Useable questionnaire returned (no missing data)	102	51	51
Response rate (%)	71.8%	70.8%	72.9%
Response rate overall	42.1%	38.3%	46.8%

Table-2

Table 2.
Pre and post-survey intention to continue and perceived organisational support by group

Intention to Continue officiating	Control group (n=49)		Organisational support group (n=51)	
	Pre-survey	Post-survey	Pre-survey	Post-survey
Mean score	4.18	4.17	4.45	4.24
SD	0.89	0.74	0.66	0.78
Perceived Organisational Support[a]				
Mean score	5.01	4.71	5.47[b]	5.04[c]
SD	1.08	1.22	1.23	1.41

[a] Repeated measures ANOVA $F(1,98)=15.52$, $p<.001$.
[b,c] Post-hoc t-test $t=4.02$, $p<.001$.

Table-3

Table 3
Organisational support group: Predicting post-survey intention to continue officiating

Predicting post-survey ITC (DV)	Step 1 beta	Step 2 beta	Step 3 beta
Pre-survey ITC	.62**	ns	.41**
Pre-survey IVs			
Stress—time pressure		ns	ns
Commitment—involvement alternatives		-.46**	-.25*
Commitment—enjoyment		ns	ns
Commitment—social constraints		ns	ns
Commitment—involvement opportunities		ns	ns
Post-survey IVs			
Stress—fear of physical harm			ns
Stress—time pressures			-.32**
Stress—interpersonal conflict			ns
Commitment—Enjoyment			.35*
Commitment—involvement opportunities			ns
Commitment—involvement alternatives			ns
Perceived organisational support			ns
F model	30.0**	8.57**	10.72**
df	1,49	6,44	13,37
Adjusted R-square	.37	.48	.72
R-square change	.38**	.16*	.25**

* $p<.05$; ** $p<.01$; ns = not significant.

Table-4

Table 4
Control Group: Predicting post-survey intention to continue officiating

Predicting Post- survey ITC (IV)	Step 1 *beta*	Step 2 *beta*	Step 3 *beta*
Pre-survey ITC	.69**	.70**	.70**
Pre-survey IVs			
Stress—time pressure		ns	ns
Commitment—involvement alternatives		ns	ns
Commitment—enjoyment		ns	-.31**
Commitment—social constraints		ns	ns
Commitment—involvement opportunities		ns	-.46**
Perceived organisational support		ns	ns
Post-survey IVs			
Commitment—Enjoyment			.52**
Commitment—social constraints			ns
Commitment—involvement opportunities			.43**
Perceived organisational support			ns
F model	43.15**	6.54**	16.82**
df	1,47	7,41	11,37
Adjusted *R*-square	.47	.45	.78
R-square change	.48**	.05	.31**

* *p*<.05; ** *p*<.01; ns = not significant.