Journal of Physical Education and Sport ® (JPES), Vol. 23 (issue 10), Art 306, pp. 2673 - 2684, October 2023
online ISSN: 2247 - 806X; p-ISSN: 2247 – 8051; ISSN - L = 2247 - 8051 © JPES

Original Article

Beyond the game: exploring the link between occupational burnout and symptoms of ill-health in Australian football league coaches

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Published online: October 31, 2023
(Accepted for publication : October 15, 2023)
DOI:10.7752/jpes.2023.10306

Abstract
Problem statement: Coaches within the Australian Football League have an occupationally demanding role that may lead to heightened feelings of distress and exhaustion. Occupational burnout has become increasingly prevalent within the workplace and research surrounding burnout has evolved within the sports coaching literature. ***Purpose:*** This study aimed to examine the association between job burnout and symptoms of ill-health among Australian Football League coaches. ***Approach:*** A total of 139 full-time Australian football coaches participated in an online sports-focused survey, which included the Maslach Burnout Inventory and the Depression, Anxiety and Stress Scale. The analysis involved assessing both the total sample and ladder-ranking groups for measures of association. ***Results:*** Positive correlations were found for Emotional Exhaustion and Personal Accomplishment with all Depression, Anxiety, Stress subscales in the total sample. Hierarchical regression analyses revealed that Emotional Exhaustion significantly predicted depression (18%), anxiety (12%) and stress (35%), while Personal Accomplishment predicted anxiety (3%). The coaching level emerged as a significant predictor of stress, with senior coaches showing significantly higher levels of stress. Bootstrap analysis indicated a similar pattern of correlations between coaches of teams who made the finals in the previous season and those who did not. ***Conclusions:*** Although coaches reported burnout and ill-health scores within the healthy range, some experienced burnout feelings associated with elevated levels of psychological stress and depression. Being a senior coach was also associated with higher levels of stress. From a practical perspective, these findings provide valuable data for supporting coaching practices, and strategies to enhance psychological wellbeing, ultimately reducing occupational burnout within the workplace environment.
Key Words: **Job-stress, depression, exhaustion, wellbeing, sport.**

Introduction

For many sports coaches, the workplace presents several occupational challenges. Not only are coaches required to demonstrate expertise in an area of sports skills, but they also increasingly assume other responsibilities. For example, mediating employee conflict and responding to athlete concerns, which have been reported to be stressful for a coach to manage (Hassmén et al., 2020; Knights & Ruddock-Hudson, 2016; Olusoga et al., 2009). Additionally, it has been found that while some coaches of elite athletes and teams regularly flourish in their profession, other coaches report a less positive experience (Olusoga et al., 2010). This can negatively impact career trajectories and lead to poor health (and illness), which occurs when general functioning and overall well-being of human development is negatively impacted (Hoare et al., 2022). In certain cases, the presence of affective symptoms is severe enough to reduce the quality of a person's health and/or impact daily functioning (Kentta et al., 2020; Kim et al., 2021). In the context of sport coaching, this may place a coach at risk of increased emotional, psychological and physical strain, and can occur alongside excessive feelings of job-burnout (Sas-Nowosielski et al., 2018).

Burnout has been classified as a psychological condition and is frequently conceptualized as a multidimensional syndrome consisting of three main components: emotional exhaustion, depersonalization and reduced personal accomplishment (Maslach et al., 2001; Maslach & Leiter, 2016). It has been described as a gradual process which can take months or even years to develop (Maslach et al., 2001). Burnout is thought to manifest when job-demands exceed an individual's ability to cope with workplace pressures (Salvagioni et al., 2017; Wong & Olusanya, 2017). Emotional exhaustion (EE) is central to burnout and comprises of feelings of being over-extended and tired due to work duties. Depersonalization (DP) represents the way an individual dissociates from their occupation; for example, individuals tend to display a lack of empathy and caring towards colleagues. Personal accomplishment (PA) reflects the (reduced) drive an employee feels to achieve work-related goals (Georgios & Nikolaos, 2012; Lundkvist et al., 2014). Due to the persistent nature of burnout, individuals experience disappointment and diminishing motivation towards their work, instead of a sense of meaning (Raedeke & Kenttä, 2013). This issue of burnout is also important within sport as coach symptoms can manifest through behaviours that adversely affect work, such as outbursts of unexplained anger (Ong & Zhao, 2019a, 2019b).

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Unsurprisingly, burnout has been linked to decreased job performance and poor mental and physical health across a range of occupations (Maslach et al., 2001). Healthcare workers, for example, have been found to be at an increased risk of developing burnout (Suñer-Soler et al., 2014). This is consistent with emergency service workers; for example, police, fire officers, doctors, paramedics (Brady et al., 2020; Moukarzel et al., 2019), and teachers (Farmer et al., 2011). A lack of concentration, mood disturbances, physical ailments (e.g., excessive fatigue), behavioural problems and reduced motivation are commonly reported symptoms of burnout (Goodger et al., 2007; Salvagioni et al., 2017). This range of psychosomatic health problems has led some researchers to suggest that commonly occurring mental illness conditions (e.g., depression and anxiety) should be included when examining burnout in sport coaches (Cresswell & Eklund, 2006).

Within the sport-coaching role, contributions to the development of coach burnout include the perceptions of the imbalance between job responsibilities and resources available to perform work duties (Sarkar & Hilton, 2020). Qualitative studies have identified stressors that increase workplace pressure; these include a poor win-loss percentage record (Frey, 2007), excessive work hours (Ong & Zhao, 2019b), attempting to complete too many tasks (Bentzen et al., 2014), unrealistic expectations of player development (Thelwell et al., 2008), lack of national/international success (Horn, 2008; Olusoga et al., 2009), and the external scrutiny from the public and media (Knights & Ruddock-Hudson, 2016). Additionally, sports coaches react differently to the demands of their workplace. Some coaches may react in an adaptive manner to the workplace challenges, while other coaches display psychological responses such as anger, frustration, feelings of self-doubt related to job-performance, loneliness and isolation (Knights & Ruddock-Hudson, 2016). Other coaches report behavioural responses that include crying, poor body language, and changes to tone and rate of speech (Olusoga et al., 2010). This body of research affirms that burnout results from a prolonged inability to cope with job pressures and may lead to illness among coaches (Bentzen et al., 2016; Cresswell & Eklund, 2006). However, research has repeatedly focused on the unique coach experience (e.g., through semi-structured interviews). Nevertheless, more quantitative designs are needed to corroborate individual experiences of burnout.

Emotional Exhaustion: a key component of burnout?

The impact of burnout extends beyond a coach's personal health and wellbeing; it also affects their coaching practices and athlete relationships. Emotional exhaustion is a prominent feature of occupational burnout, and negative associations are reported across a range of studies. For example, high school coaches who scored highly on emotional exhaustion were perceived by their athletes as someone who provides less training instruction, offers less social support, and withdraws from athlete-coach interactions (Price & Weiss, 2000). In a more recent study, coaches who tend to 'overthink' their coaching role are more likely to be emotionally exhausted (Moen et al., 2018). For example, Moen et al (2018) indicated that the role of a coach can be very consuming due to the demanding workplace requirements and the frustration of balancing athlete relationships and performance outcomes. Furthermore, coaches' symptoms of exhaustion are reported to manifest severely both mentally, emotionally, and physically (Bentzen et al., 2014; Lundkvist et al., 2014).

Other research has identified person-centred characteristics (e.g., an inability to consider alternative coaching jobs) and environmental factors (e.g., lack of social support) as elements that contribute to excessive feelings of emotional exhaustion (Altfeld & Kellmann, 2015). Taken together, the pressures felt by coaches in their role are widely varied and are associated with negative feelings towards their job.

There is also debate about whether burnout should be classified as a distinct phenomenon from poor mental health (Shirom & Melamed, 2005). Evidence that suggests there is a conceptual similarity between the two entities, derived from clinical psychology where studies show overlap between emotional exhaustion and depression symptoms, posits that burnout may be on a continuum of depressive condition (or even comorbidity) rather than distinct phenomenon (e.g., Bianchi et al., 2021; Schonfeld & Bianchi, 2016; Zisook et al., 2022). From the research that has centred on coach burnout, an emerging body of work has examined the negative psychological associations (Kim et al., 2020; McNeill et al., 2017). In a scoping review examining coach burnout (Olusoga et al., 2019), 53% of the studies were conducted with North American Coaches and 41% of the studies with Scandinavian and European coaches. This highlights an opportunity to explore the coach experience of sports played in countries within the Oceania-Pacific region, so that further comparisons can be made across sports and geographical locations. A popular and unique southern hemisphere sport where coach health and well-being may be adversely affected is Australian Rules Football.

Australian Football Coaching

Australian rules football is one of the highest profile sports in Australia (Weber et al., 2022). Australian football coaching is a legitimate full-time occupation and consists of more than 180 coaches and incorporates 18 clubs nationally, across five states, comprising of 18 senior coaches and approximately 8-10 assistant coaches per club. The Australian Football League (AFL) operates as a multimillion-dollar sports industry and contains over 20,000 coaches combined at the community and elite level across Australia (Fujak & Frawley, 2014; Norton et al., 2001). A central aim for each AFL club is to win enough matches during the regular season so that a team qualifies for finals to win the premiership trophy in *The Grand Final*. Unsurprisingly, failure to achieve this result frequently exposes AFL coaches to scrutiny from media, fans, officials, commercial sponsors, employees, and players within their club, which all add to the pressure a coach experiences (Moreno, 2020). Research within the AFL has extensively examined the football player (athlete) and often, unintendedly, the

occupational consequences (such as burnout) of a coach have been overlooked. However, over the past 15 years, high-profile news incidents involving AFL coaches have been linked to poor mental health and mental illness (e.g., Riordan & Valencich, 2020; Williams, 2022), which has highlighted physical and emotional strain that coaches experience and how it affects their lives.

To address this issue, a qualitative study conducted by Knights and Ruddock-Hudson (2016) examined the experience of occupational stress and social support within senior AFL coaches. This study found that coaches who reported stress within their coaching role also indicated that they experienced feelings of anxiety, bad moods, helplessness and sometimes claustrophobia, borne out of uncertainty about the direction they should guide their career.

The Present Study

The aim of the current study was to establish baseline data at the start of the AFL season (when coaches have returned to work, hopefully feeling refreshed) from the previous season to examine the relationship between coach burnout and ill-health symptoms. Specifically, it was hypothesized that this exploratory study would identify which, if any, dimension of occupational burnout would predict ill-health, and if any relationship was present, it would differ between coaches who performed better in the previous year (i.e., made finals) compared to coaches who did not. Of particular interest, was to examine if there could be differences in burnout depending on the expectations and workloads of the coaching team, which may be in line with where the team was situated on the ladder in the previous season.

Materials & Method

Participants

Individuals were recruited from the Australian Football League Coaches Association (AFLCA) which is the representative body of the Australian Football League coaches, who were employed as either a professional senior or assistant coach from one of the 18 AFL clubs. To participate in the study, a coach needed to be in full-time employment and work for their respective club for at least one year to account for coaches who may have moved to another AFL club at the end of the season. A minimum of five responding coaches per club was required so that data were reflective of club aggregates; the average number of coach responses from each club was 7 (*SD* = 2.55). All 18 AFL teams were sufficiently represented as a club typically employs 8-10 professional coaches. From a group of 193 eligible coaches, the final sample included 132 participants who responded to the study invitation (close to a 70% response rate). Coaches were all men aged between 30 and 61 years, (*M* = 40.63, *SD* = 7.12).

Measures

Maslach Burnout Inventory. Coach burnout was measured using the 22-item Maslach Burnout Inventory (MBI) Human Services Survey (Maslach et al., 1996). The MBI is used in approximately 90% of clinical studies and is a frequently used instrument for measuring burnout (Schaufeli, 2005). The MBI is a psychometrically valid questionnaire and has been used in sport research to assess coach burnout (Vealey et al., 1998; Vealey et al., 1992). For example, in a scoping review examining coach burnout most authors used a modified version of the MBI (see Olusoga et al., 2019).

The MBI assesses three dimensions of burnout: *emotional exhaustion* (EE) – feelings of being overextended and tired when performing work duties; *depersonalization* (DP) – a lack of empathy and/or caring toward work colleagues; and *personal accomplishment* (PA) – (lack of) motivation to achieve work-related goals (Lundkvist et al., 2014). The MBI takes approximately 10-minutes to complete and instructions for answering the questionnaire are provided prior to administration. Participants respond to 22 questions about their thoughts and feelings toward their occupation such as *I feel emotionally drained at work* and *I feel frustrated by my job*. Each question is scored on a 7-point Likert scale ranging from 0 – *never* to 6 – *everyday*; scales are summed from their constituent items. Seven items, which contain words that describe an office administration-environment, were substituted with sports terms to represent the coaching domain, e.g., *I can easily understand how my* ***recipients*** *feel about things* was changed to *I can easily understand how my* ***coaches/players*** *feel about things*. This method has been applied across a range of sport studies while still maintaining scale construct validity (e.g., Altfeld & Kellmann, 2015; Tashman et al., 2010; Vealey et al., 1992). High EE and DP scores indicate greater feelings of burnout; conversely for PA, high scores (reverse scale) represent a greater drive to achieve occupational goals.

A reliability analysis from the present study yielded Cronbach's coefficients of .86 for EE, .55 for DP, and .83 for PA. Further item analysis of DP showed that removing questions did not increase reliability. Additionally, examining a three-factor model for the MBI did not result in DP emerging as a single factor. Therefore, due to low reliability of this sub-scale, which could be due to participants having difficulty comprehending some questions within the DP subscale, as well as the observed factor structure of the MBI responses, DP was excluded from all main analyses.

Depression, Anxiety and Stress Scale (DASS). To examine ill-health symptoms in sports coaches, the 21-item Depression, Anxiety and Stress Scale (DASS21; Lovibond & Lovibond, 1995) was used**.** The DASS is a short-form questionnaire (of the parent 42-item DASS instrument), which measures responses to mental illness symptoms that occurred in the preceding week; for example, *over the past week I was aware of dryness of my*

mouth. The DASS21 is an appropriate research survey as administration time is quicker than the full version without compromising the factor structure (Crawford et al., 2011). Items are scored on a 4-point Likert scale ranging from 0 – *Did not apply to me at all* to 3 – *Applied to me very much or most of the time* and summed together to yield four scores: a total index with a range of 0–63, and three subscales (i.e., depression, anxiety, and stress), each with a range of 0–21. High scores on each scale indicate greater psychological distress. The sub-scales have high internal consistency and moderate-to-high concurrent validity. The internal consistency in the present study are within acceptable ranges: .89, total score; .87, depression; .77, anxiety; and .78, stress (Antony et al., 1998).

Procedure

Following university ethics approval, written email correspondence was distributed to AFL Coaches Association members explaining the project. Information included a statement inviting coaches to join the study. Participation was voluntary, and a coach was not disadvantaged if they declined the offer to partake. The questionnaire was hosted online using the survey platform Qualtrics, which was accessed via a secure URL link and completed on a personal computer or hand-held mobile device. The online questionnaire was administered at the start of the season, to capture initial levels of burnout and psychological distress before the demands of the playing season commence, and remained active for two weeks, which allowed coaches the opportunity to complete the survey in their own time.

Data Analysis

All statical analyses were conducted using SPSS (version 25) on a Windows 10 operating system. Analyses were conducted on the total sample and on two groups defined by a club's final standing (i.e., ladder ranking) at the end of the previous regular playing season, which acts as a benchmark to set goals to improve performance for the following year. Coaches of teams that qualified for the finals were categorised as 'top 8' while the coaches of teams that did not reach the finals were allocated to a 'bottom' group. Seven participants did not complete the questionnaire in full and were excluded from analyses. Data screening showed that there were skewed distributions of the variables; hence, Mann-Whitney U tests were used to compare top 8 and bottom groups on EE, PA, and each DASS subscales. A descriptive analysis was first conducted to examine the distributions of scores, including the participants severity from the MBI and DASS scores. The MBI categorises symptoms as low, average, and high while the DASS lists severity ranging from normal through to extremely severe, and are compared to American (Maslach et al., 1996) and Australian (Crawford et al., 2011) normative data.

Bivariate correlations using Spearman's were conducted between EE, DP, and DASS scores to ensure consistency in the presentation of correlations (i.e., reporting *r* for some correlations and for others). A series of multiple linear regression analyses followed in which EE and PA were added into the model (using the enter method) as predictors and scores on DASS scales as criterion variables. Finally, bootstrapped correlations were run to determine whether there was overlap between each group's correlations. Data below are presented for the overall sample as well as each group.

Results

The participants age range was between 30 and 61 years, with a median of 39 years. Twenty-four participants did not provide their age. This was the only piece of missing data. The remainder (n =108) were made up of 97 assistant coaches and 11 senior coaches. Based on the Mann-Whitney U test (p = .006), the assistant coaches (M = 39.97) were significantly younger than the senior coaches (M = 45.45 years).

Table 1 displays the mean scores for the MBI scales and DASS scales for the overall group. No significant differences (p > .05) were found between the top and bottom 8 groups on any MBI and DASS scores (see Table 1 for inferential statistics). Additionally, as there are an unequal number of questions for each of the three MBI scales, the average percentage of the maximum possible score for each scale is presented in Figure 1. Results showed that participants scored high on PA (between 77-80%) relative to the maximum (reverse scale) score, indicating a strong desire to achieve personal and organisational goals. Conversely, there were low scores for EE (between 20-23%) which indicates low levels of job-burnout symptoms.

Table 1

Means (Standard Deviations) for the Total Sample (N =132) and Ladder Ranking Groups, and Results of Mann-Whitney U tests between Top 8 (n = 66) and Bottom (n= 66) Groups

	Total sample	Top 8 Group	Bottom Group	*p*	*Cohen's d*
EE	11.55 (7.72)	12.29 (7.80)	10.80 (7.63)	.26	.19
PA	37.86 (7.43)	38.61 (6.75)	37.12 (8.03)	.27	.20
Depression	0.77 (1.89)	0.80 (2.04)	0.73 (1.75)	.80	.04
Anxiety	0.65 (1.52)	0.55 (1.23)	0.76 (1.77)	.36	.14
Stress	2.39 (2.50)	2.50 (2.42)	2.27 (2.59)	.39	.09
DASSt	3.80 (5.00)	3.85 (4.55)	3.76 (5.45)	.50	.02

Note. EE = Emotional Exhaustion; PA = Personal Accomplishment, DASSt = Depression, Anxiety & Stress Total score.

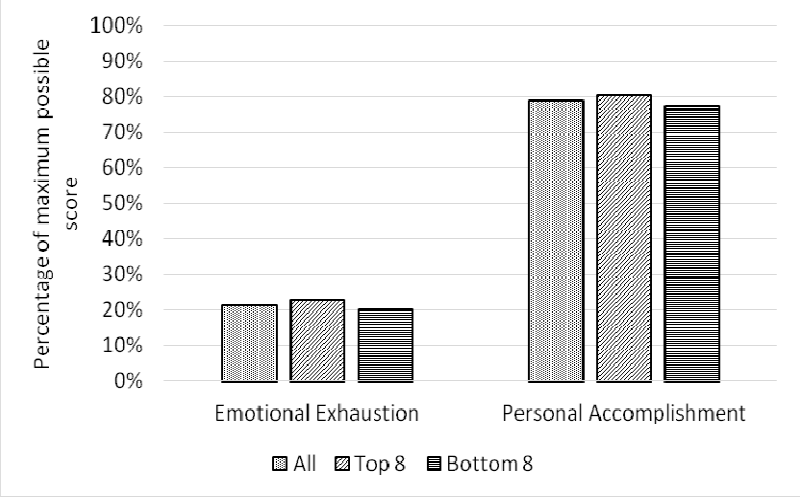

Figure 1. Average percentages of the maximum possible score on the three scales of the Maslach Burnout Inventory.

Coaches were also examined according to severity of reported MBI and DASS symptoms which are listed in Table 2 (MBI) and Table 3 (DASS). For the total sample, emotional exhaustion in 5.3% of the coaches could be classified as high. Personal accomplishment was also either low or average for 81% of participants. For psychological distress (i.e., depression, anxiety, and stress), more than 95% of coaches had scores within normal range. Top and bottom group severity scores for EE were similar between groups; however, PA had a greater percentage in the low range but less in the high range. DASS subscale severity scores were similar between both groups; most coaches reported in the normal range. Chi-square tests of independence examining the relationship between group and frequency of severity for DASS and MBI were both non-significant, $p > .39$.

Table 2

Breakdown of Maslach Burnout Inventory Subscale Scores according to Severity Index for Total Sample and Ladder Groups

	Total Sample				Top 8 Group				Bottom Group			
	EE		PA		EE		PA		EE		PA	
Range	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Low	98	74.20%	75	56.80%	48	72.70	40	60.60	50	75.80	35	53.00
Average	27	20.50%	32	24.20%	14	21.20	16	24.20	13	19.70	16	24.20
High	7	5.30%	25	18.90%	4	6.10	10	15.20	3	4.50	15	22.70

Note. $N = 132$, EE = Emotional Exhaustion, PA = Personal Accomplishment

Table 3

Breakdown of Depression, Anxiety and Stress Subscale Scores according to Severity Index for Total Sample and Ladder Groups

	Total Sample						Top 8 Group						Bottom Group					
	D		A		S		D		A		S		D		A		S	
Range	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
N	126	95.50	126	95.50	129	97.7	63	95.50	63	95.50	65	98.50	63	95.50	63	95.50	64	97.00
M	2	1.50	2	1.50	1	0.8	1	1.50	1	1.50	0	0.00	1	1.50	1	1.50	1	1.50
MD	3	2.30	3	2.30	1	0.8	1	1.50	2	3.00	1	1.50	2	3.00	1	1.50	0	0.00
S	1	0.80	0	0.00	1	0.8	1	1.50	0	0.00	0	0.00	0	0.00	0	0.00	1	1.50
ES	0	0.00	1	0.80	0	0	0	0.00	0	0.00	0	0.00	0	0.00	1	1.50	0	0.00

Note. $N = 132$, D = Depression, A = Anxiety, S = Stress; N = Normal, M = Mild, MD = Moderate, S= Severe, ES = Extremely Severe

Total Sample.

Bivariate correlations. Correlations were conducted on MBI and DASS scales using Spearman's □ (see Table 4). Results showed significant ($p < .05$) moderate-to-strong relationships for EE and all DASS scales while small-to-moderate relationships between PA and DASS scales were found.

Table 4

Bivariate Correlations between the MBI and DASS (N = 132)

	EE	PA	Depression	Anxiety	Stress	DASSt
EE	–	-.22**	.47**	.42**	.60**	.62**
PA		–	-.34**	-.32**	-.26**	-.32**
Depression			–	.50**	.54**	.70**
Anxiety				–	.55**	.67**
Stress					–	.96**
DASSt						–

Note. EE = Emotional Exhaustion; PA = Personal Accomplishment, DASSt = Depression, Anxiety & Stress Total score.

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

Regressions. Hierarchical regression analyses were run, using age of the participants as well as their coaching level (i.e., assistant, or senior coach) as predictors of DASS total and its subscales in 'Model 1' and then added measures of burnout (i.e., EE and PA) in 'Model 2'. This allowed examining the unique contribution of burnout in predicting DASS scores, over and above age and coaching level. For each regression analysis, outliers were removed if a standardised residual value exceeded three (Tabachnick & Fidell, 2019). The number of outliers removed for each analysis were 3 (anxiety), 3 (depression), 2 (stress), and 1 (DASS total). It was also worth noting that since 24 participants did not provide information about their age, regression analyses were based on a sample of 108 participants.

For both depression and anxiety, the initial model (using age and coach status as predictors) was not significant ($p = .58$ for depression, $p = .17$ for anxiety). Adding the two burnout indices (EE and PA), however, significantly improved the level of variability that each model could explain in the outcome variable. More specifically, the change in R^2 was .23 (F (4, 100) = 7.57, $p < .001$) for depression and .21 (F (4, 100) = 6.45, $p < .001$) for anxiety. EE was the only significant predictor of depression ($p < .001$), explaining 17.7% of variability in depression. For anxiety, however, both EE ($p < .001$) and PA ($p = .044$) were significant predictors and explained 12.1% and 3.3% of unique variance in anxiety, respectively.

In contrast, the initial model was significant when predicting stress (F (2, 103) = 5.34, $p = .006$. Both age ($p = .010$) and the level of coaching ($p = .014$) were significant and explained 6.1% and 5.5% of unique variation in stress. The age of participants was negatively related to their reported stress levels (= -.25), while being a senior coach was linked to higher levels of stress (= .24). However, adding EE and PA in the second model (F (4, 101) = 22.74, $p <.001$, R^2 change = .47) resulted in age ($p = .55$) no longer being a significant predictor of stress. The coaching level ($p = .002$) remained a significant predictor and explained 5.5% of unique variance in stress. Of the two indices of burnout, only EE significantly predicted stress ($p < .001$) and explained 34.6% of unique variance in stress levels of participants.

A similar trend was observed when predicting DASS total. Age ($p = .017$), but not coaching level, significantly predicted DASS total in the first model (F (2, 104) = 3.22, $p = .044$). Age, which was negatively related to DASS total (= -.24) explained 5.4% of unique variance in the outcome variable. However, the second model (with EE and PA) no longer showed age ($p = .087$) as a significant predictor of DASS total (F (4, 102) = 22.35, $p <.001$, R^2 change = .47. Both EE ($p < .001$) and PA ($p = .013$) significantly predicted DASS total and explained 34.4% and 3.3% of unique variance in DASS total, respectively.

Ladder Ranking Groups

Bivariate correlations. Table 5 presents bivariate correlations using Spearman's between the MBI and DASS scores for the two ladder groups.

Table 5

Bivariate Correlations between the MBI and DASS in Top 8 (n = 66) and Bottom (n = 66) Groups

Top 8	EE	PA	Depression	Anxiety	Stress	DASSt
EE	–	-.17	.36**	.29**	.59**	.56**
PA		–	-.26*	-.24	-.16	-.24
Depression			–	.46**	.52**	.68**
Anxiety				–	.50**	.62**
Stress					–	.95**
DASSt						–
Bottom	**EE**	**PA**	**Depression**	**Anxiety**	**Stress**	**DASSt**
EE	–	-.27*	.59**	.56**	.59**	.67**
PA		–	-.43**	-.40**	-.36**	-.40**
Depression			–	.55**	.57**	.71**
Anxiety				–	.60**	.73**
Stress					–	.96**
DASSt						–

Note. EE = emotional exhaustion; PA = personal accomplishment, DASSt = Depression, Anxiety & Stress Total score.

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

Top 8 Group. EE showed significant weak (anxiety), moderate (depression) and strong (stress and total) correlations to DASS scales ($p < .01$). PA was only significant and weakly correlated to depression, $p < .05$

Bottom Group. EE and PA were significantly correlated to all DASS scales ($p < .05$). These relationships were strong for EE and weak-to-moderate for PA.

Finally, bootstrapped correlations (based on 1000 bootstrapped samples) showed that for each bivariate correlation, the 95% confidence intervals overlapped, indicating similar patterns of relationships in top 8 and bottom groups.

Discussion

The aim of the study was to examine whether job-burnout among professional Australian Football coaches was linked to various aspects of psychological ill-health (i.e., anxiety, depression, and stress). While the focus of the sports psychology literature is often directed towards predictors of job-burnout, this study is one of the first to examine the associations of this condition with coach wellbeing. Using a cross-sectional design, self-report indices of job-burnout were collected from a modified sports burnout questionnaire that examined predictor(s) of ill-health. Overall, the data shows that the AFL coaching cohort reported high scores on a personal accomplishment scale (a reverse score index) and low scores on an emotional exhaustion index, both relative to the maximum possible score and established norms (Maslach et al., 1996). Of the MBI scales, EE displayed a stronger relationship than PA with DASS; both scales significantly predicted ill-health symptoms, except PA which did not predict stress. Additionally, emotional exhaustion explained more variance in stress than in depression and anxiety.

Contrary to expectations, group comparisons, defined by the position a team finished on the competition ladder from the previous season, were not different on any measures. The ladder groups also exhibited a similar pattern to the total sample: high PA scores and low EE scores, suggesting that the expression of burnout and distress is consistent for most AFL coaches regardless of how their team performed the previous season. The implications of these findings are discussed further below.

The relationship between job-burnout and psychological distress

The regression analyses showed that emotional exhaustion significantly predicted all ill-health measures (depression, anxiety, stress), and was the strongest predictor of stress. In contrast, personal accomplishment predicted depression and anxiety, but not stress. Psychological stress is often reported as a negative outcome that arises from the occupational pressures elite sport coaches experience (dos Santos & da Costa, 2018; Potts et al., 2021), and differs from occupational stressors which is considered to arise from an interaction between appraisals and reactions to external events (Fletcher & Scott, 2010). A recent qualitative study of elite English Football coaches found that psychological stress negatively impacts coach mental health (Baldock et al., 2021), which suggests a link between mental illness and job burnout beyond the sport coaching literature (see Maslach & Leiter, 2016; Salvagioni et al., 2017). The association between emotional exhaustion and ill-health symptoms in the present study is in line with research that shows full-time coaches from other sports also experience increased levels of emotional exhaustion symptoms (Altfeld & Kellmann, 2015; McNeill et al., 2017).

Even though the data showed that coaches who are emotionally exhausted are more likely to experience psychological stress than depression and anxiety, there are several caveats to consider around this. First, analysis of severity scores found that 95% of coaches were within normal range for ill-health measures, while the same percentage reported low-to-average symptoms of EE. However, close to 20% of coaches presented with clinically high PA symptoms. Some studies do not report the clinical severity of burnout and/or mental illness distress; although, a recent online survey did find moderate depressive symptoms in 14% of sampled coaches using a revised depression scale (Kim et al., 2020). Second, a recent systematic review has identified a strong relationship between exhaustion and depression compared to other burnout symptoms (Bianchi et al., 2021). However, it should be noted that 67% of the participants included in their study were women, unlike that in the present study which contained all men. It is well documented that women experience depressive symptoms at a higher rate than men (e.g., Kuehner, 2017; Leach et al., 2008). While the etiological reasons for this are beyond the scope of this discussion, the analyses did not detect a stronger relationship with depression (and anxiety). This does not imply that there is an absence of depression and anxiety symptoms, or that PA is not associated with ill-health symptoms; possibly, it may be overshadowed by stress, or another affective reaction.

Analysis of Ladder Ranking Groups

Coaching performance (in the form of ladder ranking position) was assessed from the previous playing season and was related to the association of burnout and psychological distress. This was achieved by allocating coaches into two categories: (i) coaches of teams who made the finals, top 8 group; and (ii) coaches of teams who did not make finals, bottom group. In the top 8 group, EE was positively correlated (of varying strengths) to all DASS variables, while PA was only associated with depression. Conversely, in the bottom group, both EE and PA dimensions correlated with all three psychological distress measures; bootstrap tests found similar patterns of correlations between the groups.

These results are interesting because on the one hand they suggest that coaches experience stronger associations when their team performed better from the previous season. On the other hand, coaches of poorer performing teams may be at greater risk of burnout and mental illness based on the number of associations

between the two constructs. This finding accords with research from Knights and Ruddock-Hudson (2016) who found that AFL coaches experience a range of negative psychological symptoms. When coupled with pressure to produce more successful results, it may compound psychosomatic symptoms on AFL coaches that may give rise to greater distress, particularly when coaches and their teams do not qualify for finals games and are branded *unsuccessful*. This finding parallels in part to a recent study on athlete and coach perfectionism which found that coaches who hold their performance to high expectations of other people are more likely to experience burnout (Olsson et al., 2022). As a result, an association between ladder ranking and psychological distress is a novel finding that has yet to be reported within the coaching literature and should be a focus in future research.

Limitations and Recommendation for Future Research in Sport and AFL Coaching

This study identified the relationships between burnout and ill-health symptoms, nevertheless, the data showed weak-to-moderate associations between MBI and DASS scores, which may not be deemed clinically significant. Clinical significance when applied to the context of burnout and psychological distress is an important criterion to establish within elite sports coaches given that the AFL coaches reported scores within normal (DASS) and low (MBI) ranges, and that empirically established cut-points are needed to detect meaningful deviations from group averages (Jacobson & Truax, 1991; Ogles et al., 2001; Ranganathan et al., 2015). This data helps establish baseline comparators (which was a study objective) for subsequent lines of investigation into ill-health and other variables of interest across the wider sports coaching literature (Schaffran et al., 2016). The decision to exclude the MBI depersonalization scale from further analysis prevents a full analysis of the association between ill-health symptoms and burnout. This decision was made in the spirit of open and transparent reporting, and to prevent underestimation of the internal consistency analysis based on a lower number of items of the DP scale. This ensured that variables represented constructs that loaded onto each scale (Rammstedt & Beierlein, 2014). In addition, the current sample comprised of all men. Historically, many AFL players transition from a playing career into the role of a coach, which have been filled by men. However, with the recent introduction of the Women's game to Australian Football League (AFLW), it is recommended that future research examine the response to burnout and psychological distress in female AFL coaches.

With an increasing popularity in the number of people taking up a position as a sports coach, and the physical and emotional pressure that elite coaching can exert on an individual (Hassmén et al., 2020), the results of this study should be extrapolated to a larger Australian sample as the negative associations of burnout remain largely unexplored within this southern hemisphere coaching group.

This recommendation also extends to other sports worldwide, as organisational psychology data suggest that women are at an equal risk (or greater) of job-burnout as they tend to have less authority in their role which can lead to a sense of diminished sense of well-being and occupational frustrations (Quinn & Smith, 2018).

In addition, the present study only measured self-report indices of coach burnout. Current scientific procedures used to detect athlete burnout adopt a multifaceted approach, measuring social, psychological, and physiological variables; the latter involves collecting data via systolic blood pressure, heart rate, and skin conductance (Monfared et al., 2021). For example, if burnout persists, the risk of cardiovascular disease increases (Melamed et al., 2006); hence, it is recommended that a comprehensive approach to assess coach burnout by incorporating physiological and psychological measures together.

Finally, the cross-sectional design conducted at the beginning of an AFL coaching season, usually when coaches are less impacted by mid-to-late season pressures, may be a limiting factor. Further research should examine the aetiology of burnout over a longitudinal period to capture the appropriate cyclical changes of mood toward the occupation within this timeframe (Altfeld & Kellmann, 2013). For instance, initially, coaches may find their role rewarding; however, motivation in the position may wane because of a poor win-loss ratio. Alternatively, a coach may find positive aspects within their experience of coaching (Knights & Ruddock-Hudson, 2016), thus increasing their enjoyment and devotion to the sport and role. As a result, cross-sectional research is not able to capture fluctuations in mood and affect over time. As burnout can be a slow and gradual process (Schaffran et al., 2016), which may take several months or even years to manifest, longitudinal studies can plot if (and when) burnout changes during a season.

Conclusion

This study identified preliminary associations between burnout and ill-health symptoms for AFL coaches and has provided baseline data so that subsequent studies can be compared. The data suggests that generally the male coaches in this study are psychologically healthy based on scores from the present measures used, although there is a small group of coaches who also report experiencing feelings of burnout and poor health. It is recommended that further research examine how these syndromes develop over time so that deviations from expected norms can be monitored and recorded to monitor changes of coaches across a playing season. From a practical perspective, the data from this study offers valuable data for supporting coaching practices and developing strategies to enhance psychological wellbeing, ultimately reducing occupational burnout within the workplace environment.

Conflicts of interest The author(s) declare no potential conflicts of interest with respect to the research, authorship and / or publication of this article.

Funding:

Funding was provided by the Australian Football League Coaches Association to support this research.

Acknowledgements

The authors express sincere thanks to Mr Mark Brayshaw, the Chief Executive Office of the AFL Coaches Association, and every coach who contributed to this research.

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