Are German Coaches Highly Exhausted? A Study of Differences in Personal and Environmental Factors

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ABSTRACT

Previous research has produced equivocal findings in regard to personal and environmental parameters influencing coaches' perceptions of stress and burnout levels. Moreover, there is a paucity of studies examining these factors in European professional sport contexts. This study investigated the influence of person-related (e.g., age, hours per week, level of recovery, coaching alternatives, experience as an assistant), sport-related (e.g., type of sport, working in youth or senior section, level of performing), and perception-related variables (e.g., feeling of meaningfulness, financial security) in relation to burnout of German full-time coaches. One-hundred and fifty eight coaches of different sports and levels completed a demographical survey, a German coaches' version of the Maslach Burnout Inventory, and the Recovery-Stress Questionnaire for Coaches. Two contrasting groups were formed to compare coaches with the lowest scores in Emotional Exhaustion (lowest 20%) and the highest scores in Emotional Exhaustion (highest 20%). Overall Stress (β = 3.92, $p < .001$) and Overall Recovery (β = -2.86, $p < .001$) demonstrated significant effects on Emotional Exhaustion within multiple regression analysis. Moreover, the variables sense of well-being (r = -.46, $p < .001$), feeling of meaningfulness (r = -.28, $p < .001$) showed significant relationships to the key burnout symptom of Emotional Exhaustion. The extreme group comparison indicated significant differences in person-related and perception-related parameters. Recovery as well as social support might be important in managing stress in the challenging work environments of full-time coaches. Additionally, the perception of the current coaching job might be more important than context-related variables (e.g., type of sport, level).

Key words: Burnout, Emotional Exhaustion, Recovery, Social Support, Stress

Reviewer: Thomas Curran (University of Gloucestershire, UK)

INTRODUCTION

The occupational group of full-time coaches has regularly to deal with a range of potential stressors in the workplace, including emotional and physical demands, caused by the complex nature of coaching work which is typically judged by performance outcomes [1]. They are required to engage in complex decision-making including player selections, problem-solving, and often within significant time constraints. Planning and preparation for practice and competitions are also part of coaches' work as well as dealing with governing boards and/or parents (in youth sport) and other external factors [2]. At the same time, they need to manage their own emotional and physical state to perform at their optimal level [3]. Typically, job and associated financial security are dependent upon the performance of the athletes and subsequently may influence the mental well-being of the coaches [4]. Hence, the issue of financial security is one distinctive difference between full-time and part-time coaches or volunteers. Associated with issues such as financial security is the pressure to perform, and over the duration of the season this stress is likely to accumulate and potentially lead to burnout syndrome and possibly coach attrition. Additionally, high and often unrealistic expectations by others (e.g., media, fans, administration) reinforce the pressure and the risk of feeling high exhausted and burning out [3]. Therefore, the focus of this study is to examine the exhaustion level of German full-time coaches and to analyse potential contributing key factors.

Burnout describes a status of mental and physical exhaustion caused by excessive stress and the interaction of environmental and personal factors [5, 6]. Stress results from the individual appraisal of a situation as overtaxing the existing coping strategies and threatening one's own well-being [7]. Freudenberger [8] and Maslach [9] first described the concept of burnout. According to Maslach and Jackson [10, 11], emotional exhaustion, depersonalization, and reduced personal accomplishment are the characteristic symptoms. These factors have been supported by literature investigating burnout in coaches and athletes [12, 13]. Consequently, burnout in the workplace can be described as a negative, consistent, work-related mental state, which is maintained by accompanied motivation and the generation of dysfunctional attitudes and behaviors towards the job [14]. The development of emotional exhaustion, depersonalization, and reduced personal accomplishment can be described as a process that can take several month or years [15–17]. Moreover, Lee and Ashforth [16] as well as Leiter and Maslach [15] claim that emotional exhaustion is the first burnout dimension that develops and causes the dimensions depersonalization and personal accomplishment. With respect to this, emotional exhaustion can be seen as the key symptom of burnout [18]. In the past, several studies have examined coaches' feelings of excessive demands, emotional tiredness, and subliminal symptoms of burnout [19–25]. The results of these studies suggested a relationship between indicators of burnout and associated person-related (e.g., age, experience) and context parameters (e.g., type of sport, social support).

Cherniss [26] reported several antecedents of coaches' burnout, including work overload, stress, and psychological adaptations of a person. In addition, coaches' investment of time and energy into their job can be compounded by other factors (e.g., potential job loss) that collectively cause emotional stress and discontentment. Therefore, challenging occupational conditions and associated energy-sapping mechanisms can contribute to burnout [25]. However, the demands of stressors on emotional well-being are only part of the story. Kellmann [27] underscores the importance of recovery means in balancing stress in his 'scissor model'; insufficient recovery leads to deficits in coping with emotional, physical, and psychological stressors. This model describes the inter-relatedness among the states of use and the demand on recovery whereby an optimal individual state of use arises by a

balanced ratio of recovery and stress. Therefore, burnout can also be defined as a person's state of maximum need for recovery [28]. Hence, to examine and reason the personal emotional exhaustion, the assessment of the individual stress-recovery-ratio is needed.

A model by Fletcher and Fletcher [29], based on the cognitive-affective model by Smith [6] and the transactional theory of stress by Lazarus [5], highlights that cognitions, perceptions, evaluations, and coping affects performance and well-being of coaches. More recently, Fletcher and Scott [30] postulated that environmental (e.g., type of sport, level, gender of athletes) and personal variables (e.g., coaches' gender, age, personality) simultaneously moderate this process.

Reviews by Altfeld and Kellmann [12] and Goodger et al. [13] highlighted equivocal findings from the few studies examining personal and environmental factors. For example, Caccese and Mayerberg [31] reported that female coaches were more emotionally exhausted and experienced more failure than their male counterparts. The pressure for female coaches to assert themselves over male coaches and to deal with financial (job) uncertainty was proposed as major causes. Higher burnout scores for female coaches were examined in several studies [22, 32–35]. In contrast, recent research has found no gender effects [23, 36]. Concerning the gender of athletes, Hjälm et al. [37] explored potential differences in coaching male or female teams. They reported higher scores for emotional exhaustion and depersonalization for coaches of female teams and argued that coaches in male teams typically work in more professional settings, with higher financial security and larger staff, compared with coaches of female teams.

In their study of 172 full-time and part-time coaches, Kallus et al. [38] examined whether age was an important factor influencing burnout. They showed that younger and inexperienced coaches coped with stress in a significantly less favorable way compared to older and experienced colleagues, who had superior skills in self-regulation. Several studies, which reported higher burnout values for younger coaches, support these findings [24, 34, 36]. However, older 'burned out' coaches who left the vocation were probably not included in these samples, suggesting some caution in understanding age as a key variable [38]. In contrast, Malinauskas et al. [23] found higher burnout scores for coaches who worked in their job more than ten years. Thus, accumulated stress associated with duration and intensity of work (in hours per week) might be an important variable for future investigations.

Additional coach burnout studies have examined other variables such as type of sports and performance level. Some studies revealed higher burnout scores for coaches in team sports [39–41] whereas, Caccese and Mayerberg [31] found higher emotional exhaustion scores and lower personal accomplishment for coaches of individual sports. Regarding performance level, Hunt [42] reported differences between Division I and Division III basketball coaches in the U.S. Coaches on a higher level experienced more pressure to win and were more affected by the higher media presence. However, these findings were not confirmed [22].

The impact of social support (e.g., family, athletes, assistant) on burnout has also been investigated, with several studies suggesting its buffering potential [20, 33, 43, 44]. Hendrix et al. [20] reported that coaches with less social support experienced more burnout and stress. Furthermore, family tensions and conflicts contributed to coach burnout and attrition [45]. Lack of social support in the workplace could also contribute to stress and burnout; for example, coaches who received limited or no support from the club management developed a feeling of entrapment [25, 35, 46]. In particular, coaches who reported no alternative job or coaching opportunities experienced this feeling of entrapment [25, 46]. Additionally, Davies et al. [47] found that insufficient financial resources increase the feeling of

dissatisfaction of coaches. Hence, coaches' perceptions of job security, pressure to perform, and alternative employment opportunities seem to contribute to emotional stress and potential burnout. In contrast to this, the impact of other perception-related variables (e.g., feeling of success, meaningfulness), moderating the evaluation of the current situation has not been assessed in previous research.

Most studies within the coaching literature have focused on coaches at U.S. colleges and elite coaches [20, 32, 45]. In contrast, O'Connor and Bennie [48] argued for more research on youth coaches who additionally need to deal with parents and/or competing educational and social demands for athletes (e.g., drugs, violence, problems in school). Coaches of youth athletes represent another context to examine emotional stress and burnout. They also experience significant and different challenges in their work but generalizing findings from research on collegiate coaches is likely problematic. Moreover, cultural factors might also be helpful in understanding burnout in coaches. Until the submission of this manuscript, there were only seven burnout publications dealing with European coaches since 2002 [4, 23, 36, 37, 40, 49], including only one German study [50]. The differences in the North American and the European sport systems restrict the generalizability of the findings to the European context [51, 52]. Furthermore, previous results showed a link between culture and the level of burnout in other professional settings [14, 53].

In summary, there are several personal and environmental parameters influencing coaches' perceptions of stress and burnout levels. Nevertheless, many studies have produced equivocal findings due to methodological differences (e.g., assessment of variables, selected sample). In addition, previous research has focused on personal or contextual variables but has neglected perception-related variables like perceived feelings of success, meaningfulness of the current job, or sense of well-being. In this regard, Fernet et al. [54] examined that negative changes in perception-related variables of teachers were positively related to emotional exhaustion. Moreover, there is a paucity of studies examining these factors in European professional sport contexts. Therefore, the purposes of this study are threefold. First, to investigate categorical person-related (e.g., coaching alternatives, experience as assistant) and sport-related characteristics (e.g., kind of sport, working in youth or senior section, level of performing) to understand potential contributing key factors to coaches' burnout in a German sample. Second, to examine the impact of person-related (e.g., age, hours per week, level of recovery and demand) and perception-related variables (e.g., feeling of meaningfulness, financial security) in relation to coaches' emotional exhaustion to clarify the impact of these particular variables. Third, to examine the potential differences in person-related and perception-related characteristics between two contrasting groups of coaches (high versus low exhaustion) in this sample. In line with previous research, differences between the burnout levels of coaches in different contexts (e.g., senior coach vs. youth coach) were expected. Moreover, it was anticipated that person-related and perception-related variables have a significant influence on the level of emotional exhaustion. It was expected that the variables sense of well-being in the current coaching position, feeling of meaningfulness, financial security, feeling of success, and the level of recovery were negatively related to the emotional exhaustion level of German full-time coaches. Additionally, it was anticipated that the stress level of coaches would have a negative impact on the emotional exhaustion level.

METHOD

PARTICIPANTS

Participants were 158 German full-time coaches of different sports and levels. Demographic

characteristics are displayed in Table 1. The full-time coaches were part of a larger research project about coaches' burnout in Germany including 797 German coaches. In addition to the full-time coaches, who are integrated in this study, the larger sample also included part-time and voluntary coaches. All 158 coaches completed the demographical questionnaire, burnout questionnaire, and the Recovery-Stress Questionnaire for Coaches [55, 56]. The sample included 74 coaches in team sports (e.g., basketball, soccer, handball) and 84 coaching individual sport (e.g., tennis, track and field, swimming). The gender distribution within this study (9% female, 91% male) corresponds to the distribution of female and male coaches in Germany [57].

Table 1. Mean value and standard deviation for age and distribution of the sample related to demographic characteristics (n=158)

Age in years, M (SD)	**40.49**	**(10.13)**
Gender (n)		
Male	144	
Female	14	
Type of sport (n)		
Team	74	
Individual	84	
Level (n)		
International	73	
Highest national	38	
Second highest national	7	
Third highest national	13	
Others	27	
Work section (n)		
Youth	34	
Seniors	13	
Selection teams	15	
Mixed (e.g., youth team and senior team)	96	
Experience as a coach (n)		
1 – 2 years	4	
3 – 5 years	18	
6 – 10 years	26	
11 – 15 years	26	
16 – 25 years	48	
> 25 years	36	
Experience as an assistant coach (n)		
Yes	86	
No	72	
Gender of athletes		
Female	43	
Male	19	
Female and male athletes	96	

MEASURES

Demographic and Personal Parameters. Coaches' information including gender, age, type of sport, level, gender of athletes, coaching alternatives to the current coaching position, alternative jobs beside coaching, the experience as a coach, work section (working with youth, senior, or selection teams), and work load per week were collected. Social support (e.g., family, athletes, board or staff) was assessed as well as the experience as an assistant coach by dichotomous items (e.g. "Did you work as an assistant coach before?"). Additionally, coaches' perceptions about the sense of well-being in the current coaching position, feeling of meaningfulness, financial security, and feeling of success were each measured by one question (e.g. "How well do you feel in your current coaching situation?") to assure the economy of the examination. The participants rated the questions on a Likert scale (1 = not at all; 5 = very).

Maslach Burnout Inventory for Coaches. The Maslach Burnout Inventory (MBI), developed by Maslach and Jackson [10], was selected as the instrument to measure perceived burnout in German coaches. The original self-report questionnaire consists of 22 items factored into three scales: *Emotional Exhaustion* (9 items), *Depersonalization* (5 items) and *Personal Accomplishment* (8 items). Participants rate each item on a seven-point scale ranging from never (0) to always (6). However, to deal with previous criticisms about the inadequate item structure of the MBI for coaches [12, 28, 37, 58–60] a German coaches' version (MBI-C) was generated by Altfeld and Kellmann [61]. This was a modification by rephrasing the items of the valid German version of teachers (MBI-D) [62] for coaches (e.g., "The work as a teacher…" into "The work as a coach…"). Additionally, the structure of a modified MBI-C was verified by confirmatory factor analyses (CFA) for the use in this study. The analysis of covariance structure within the framework of CFA was conducted on the data collected from the larger sample (n = 797) using robust maximum likelihood estimation procedures to identify the best empirically supported items in the MBI-C. Decisions to remove items were based on the modification indices and size of standardized residuals. The adequacy of the estimated model was evaluated by multiple fit indices. These indices included the comparative fit index (CFI) [63], the non-normed fit index (NNFI) [64], the root-mean squared error of approximation (RMSEA) [65], and the standard root-mean square residual (SRMR) [66]. Values on the CFI and NNFI that are .90 or greater indicate an adequate fit. RMSEA-values of .05 or less indicate a close fit. Adequate values of the SRMR are less than .08. The three-factor model using 22 items provided an inadequate fit to the data, RMSEA = .07, NNFI = .81, CFI = .83, SRMR = .09. Modification indices and standardized residuals suggested areas for model adaptations. Due to the results of the CFA three items of the scale *Emotional Exhaustion* and one item of *Personal Accomplishment* were removed, leaving a total of 18 items (*Emotional Exhaustion* = 6 items; *Depersonalization* = 5 items; *Personal Accomplishment* = 7 items). The modified model provided a good fit to the data (RMSEA = .04, NNFI = .99, CFI = .99, SRMR = .06) and subsequently, the 18-item MBI-C measure was used in further analyses. The scale *Emotional Exhaustion* assesses feelings of being emotionally tired and over-extended by the work, which are declared as the key symptoms of burnout and causing the development of depersonalization and personal accomplishment [15, 16, 18]. Accordingly, the scale *Emotional Exhaustion* was used for further analysis.

Recovery-Stress Questionnaire for Coaches. The Recovery-Stress Questionnaire for Coaches (RESTQ-Coach) [55, 56] consists of 77 items (19 scales with four items plus one warm up item) and was constructed to measure the level of recovery and stress over the past three days/nights. The recovery-stress state indicates the extent to which a coach is

physically and/or mentally stressed, and in which way the coach is using individual strategies for recovery. The participants answer retrospectively on a Likert scale with values ranging from never (0) to always (6). Thereby, high scores in the stress-associated scales reflect intense subjective stress, whereas high scores in the recovery-oriented scales display good recovery activities.

The RESTQ-Coach assesses the ratio of stress and recovery with seven overall stress scales (*General Stress*, *Emotional Stress*, *Social Stress*, *Conflicts/Pressure*, *Fatigue, Lack of Energy*, *Physical Complaints*) and five overall recovery scales (*Success*, *Social Recovery*, *Physical Recovery*, *General Well-being*, *Sleep Quality*) of the Recovery-Stress Questionnaire (RESTQ). Furthermore, the RESTQ-Coach consists of two coach-specific stress scales (*Disturbed Breaks*, *Emotional Exhaustion*) and five coach-specific recovery scales (*Personal Accomplishment*, *Fitness*, *Motivation as a Coach*, *Success as a Coach*, *Self-Efficacy*). Four overall and specific scores (*Overall Stress*, *Overall Recovery*, *Coach-specific Stress*, *Coach-specific Recovery*) are created by summing the scores of the scales and calculating mean values. Satisfactory internal reliabilities ($\alpha \geq .70$) have been reported for all the overall and specific scales of the RESTQ-Coach [55, 56].

Due to the fact that the RESTQ-Coach has not been published in a manual or English language journal, only the seven stress and five recovery scales of the RESTQ were used for the analysis in this study. These scales use the same items from the validated scales of the Recovery-Stress Questionnaire for Athletes [67] which have been used in previous studies [68, 69].

PROCEDURE

As part of a larger research project investigating burnout of German coaches, an online survey link, including the demographical questionnaire, the MBI-C and RESTQ, was sent to coaches of different sports and levels. Additionally, several German sports associations forwarded the link to their coaches. A total of 797 coaches responded, including the sample of 158 full-time coaches used in this study. Data were collected in September 2012, before the start of the competitive team sport season in Germany.

DATA ANALYSIS

Step 1: Reliability and Descriptive Analysis. In addition to the descriptive analysis, internal reliabilities (Cronbach's α) for the MBI-C and RESTQ scales were calculated. Nunnally [70] suggests satisfactory Cronbach's α should be .70 or higher. In regard to incomplete questionnaires, missing values were replaced by the mean value of the remaining items of a scale (arithmetic mean imputation, see [71]). This procedure was used in cases where only one item within a scale was incomplete. 1.3 % of incomplete items were supplemented by this procedure. Chi-square test was conducted to analyze the distribution of the data.

Step 2: Comparison of Categorical Variables. Differences between categorical person-related (e.g., coaching alternatives, experience as an assistant) and sport-related characteristics (e.g., type of sport, working in youth or senior section, level of performing) relating to the *Emotional Exhaustion* scores of the MBI-C were examined using non-parametric tests in SPSS because of asymmetrical distribution of the data. Therefore, Mann-Whitney tests were applied to identify group differences. In cases involving multiple comparisons, Bonferoni correction was applied.

Step 3: Impact of person-related and perception-related variables on Emotional Exhaustion. Bivariate correlation and multiple regressions were conducted to explore relationships between *Emotional Exhaustion* and person-related and perception-related

variables. Hence, variables were stepwise added to the model. On the first stage, the variables age and work hours per week were chosen. The second model additionally included the perception-related variables (financial security, feeling of meaningfulness, feeling of success, sense of well-being). The overall scores (*Overall Stress*, *Overall Recovery*) of the RESTQ finally were added to the model on the third stage.

Step 4: Differences between Groups with Highest Scores in Emotional Exhaustion and Lowest scores in Emotional Exhaustion. Two contrasting groups were formed to compare coaches with the lowest scores in *Emotional Exhaustion* (lowest 20%) and the highest scores in *Emotional Exhaustion* (highest 20%) to examine potential group differences in the scores of the examined variables (e.g., sense of well-being, financial security, *Overall Recovery*, *Overall Stress*). These cut off values are following the example set by previous research [21, 40]. Subsequently, Mann-Whitney tests were applied to examine group differences.

RESULTS

STEP 1: RELIABILITY AND DESCRIPTIVE ANALYSIS

The Cronbach's α for the MBI-C and RESTQ scales ranged between acceptable and excellent values. The *Personal Accomplishment* of the MBI-C had a Cronbach's α of .67. On account of the fact that the scale *Emotional Exhaustion* (Cronbach's $\alpha = .87$) was used as the main burnout variable, the reliability of *Personal Accomplishment* was considered acceptable for this study. The RESTQ scales *Overall Stress* (Cronbach's $\alpha = .95$) and *Overall Recovery* (Cronbach's $\alpha = .92$) scored excellent reliabilities. The descriptive analysis showed mean scores of 15.97 ($SD = 7.49$) for *Emotional Exhaustion*, 5.54 ($SD = 4.88$) for *Depersonalization*, and 34.42 ($SD = 4.41$) for *Personal Accomplishment*, suggesting low to medium levels of burnout. Chi-square test examined that the data of *Emotional Exhaustion* in this study were not normally distributed, $\chi^2 = 75.77$, $df = 35$, $p < .001$. Furthermore, the values of *Emotional Exhaustion* in this study showed a positively skewed distribution (.18, $SD = .19$).

STEP 2: COMPARISON OF CATEGORICAL VARIABLES

Selected results from the comparisons of categorical variables with regard to *Emotional Exhaustion* are represented in Table 2. Statistically significant results were found between coaches who received social support by their family and those who did not. Coaches without family support had higher *Emotional Exhaustion* values compared with those coaches experiencing support, $U = 2653.50$, $p = .023$. In relation to *Emotional Exhaustion* ($U = 1985.00$, $p = .011$) and well-being ($U = 2590.00$, $p = .024$), statistically relevant results have been revealed for coaches who had alternative coaching jobs compared to those without alternatives in their current coaching position. Accordingly, coaches with other coaching options to their current position had lower *Emotional Exhaustion* values than their colleagues without another option. No significant differences were identified for those who reported alternative jobs to coaching. No significant differences were found for the variables: type of sports, level, work section, experience as a coach (years of coaching), experience as an assistant coach, gender of athletes and social support by the board, athletes or assistant. No analysis was conducted for coaches' gender because of the small number of female participants in this sample.

Table 2. Selected non-parametrical mann-whitney test comparisons of categorical variables and emotional exhaustion of the MBI-T and reported U and p-values of significant results (n=158)

Variable	M	SD	Significant Comparisons	U and p-Value
for Sufficient Tests				
Type of Sport				
1. Team	15.84	7.12	vs. 2	
2. Individual	16.07	7.83	vs. 1	
Highest level				
3. International		15.63	7.29	vs. 4; 6; 7
4. Highest	16.06	7.05	vs. 3; 6; 7	
5. Second1	15.86	6.52		
6. Third	18.54	6.80	vs. 3; 4; 7	
7. Others	16.71	9.03	vs. 3; 4; 6	
Work section				
8. Youth	15.35	9.22	vs. 9; 10; 11	
9. Seniors	13.38	5.97	vs. 8; 10; 11	
10. Selection	15.00	6.18	vs. 8; 9; 11	
11. Mixed	17.06	6.92	vs. 8; 9; 10	
Experience as an Assistant				
12. Yes	15.40	7.32	vs. 13	
13. No	16.63	7.67	vs. 12	
Social Support				
a) Family				
14. Yes	14.98	7.52	vs. 15*	2653.00, .023*
15. No	17.86	7.11	vs. 14*	2653.00, .023*
b) Board				
16. Yes	16.78	7.37	vs. 17	
17. No	15.09	7.55	vs. 16	
c) Team/Athletes				
18. Yes	15.39	6.47	vs. 19	
19. No	16.69	8.59	vs. 18	
c) Assistant				
20. Yes	15.39	6.47	vs. 21	
21. No	16.69	8.59	vs. 20	
Alternative Coaching Job				
22. Yes	14.91	7.40	vs. 23*	1985.00, .011*
23. No	18.18	7.41	vs. 22*	1985.00, .011*
Further job alternatives				
24. Yes	15.26	7.44	vs. 25	
25. No	17.33	7.42	vs. 24	
Gender of athletes				
26. Male	19.58	6.50	vs. 27;28	
27. Female	15.70	6.55	vs. 26;28	
28. both	15.29	8.00	vs. 26;27	

Note. 1Insufficient group members for inferential analyses, *p < .05, ** p < .01.

STEP 3: IMPACT OF PERSON-RELATED AND PERCEPTION-RELATED VARIABLES ON EMOTIONAL EXHAUSTION

Multiple regressions were conducted to examine the relationship between person-related variables, perception-related variables, and *Emotional Exhaustion* (see Table 3). The included variables age and work hours per week did not significantly predict *Emotional Exhaustion* of full-time coaches in the first model, $R^2 = .005$, $F(2, 144) = .36$, $p = .701$. The addition of the perception-related variables increased the explained variance, $R^2 = .227$, $F(6, 140) = 6.85$, $p < .001$. The parameter sense of well-being showed a significant effect ($\beta = -.42$, $p < .001$) on *Emotional Exhaustion*. This effect disappeared in the third model by adding the overall scores (*Overall Stress*, *Overall Recovery*) of the RESTQ, $R^2 = .583$, $F(8, 138) = 24.15$, $p < .001$. *Overall Stress* ($\beta = .45$, $p < .001$) and *Overall Recovery* ($\beta = -.32$, $p < .001$) demonstrated significant effects on *Emotional Exhaustion* within this model. Beside these effects, correlation analysis provided moderate negative relationships of sense of well-being ($r = -.46$, $p < .001$) and the feeling of meaningfulness ($r = -.28$, $p < .001$) in regard to *Emotional Exhaustion*.

Table 3. Stepwise multiple regression analysis examining predictors of emotional exhaustion (n = 158)

Model	Included Predictors	B	SE	β	t	p
Model 1	Age	.018	.06	.02	.28	.781
	Work Hours per Week	.029	.04	.07	.80	.427
	$R^2 = .005$, $F = .36$					
Model 2	Age	-.012	.06	-.02	-.20	.840
	Work Hours per Week	.029	.03	.07	.86	.394
	Financial Security	-.264	.56	-.04	-.47	.637
	Feeling of Meaningfulness	-1.236	.93	-.12	-1.32	.188
	Feeling of Success	.544	.90	.05	.61	.544
	Sense of Well-Being	-2.935	.60	-.42	-4.10	.000**
	$R^2 = .227$, $F = 6.58$**					
Model 3	Age	.035	.04	.05	.78	.436
	Work Hours per Week	.015	.03	.03	.60	.547
	Financial Security	-.527	.41	-.08	-1.27	.205
	Feeling of Meaningfulness	-.633	.70	-.06	-.90	.369
	Feeling of Success	1.067	.67	.10	1.60	.111
	Sense of Well-Being	-.750	.49	-.12	-1.54	.125
	Overall Stress	3.921	.65	.45	6.05	.000**
	Overall Recovery	-2.816	.69	-.32	-4.06	.000**
	$R^2 = .583$, $F = 24.15$**					

Note. *p < .05, ** p < 0.01.

In addition, bivariate correlations were conducted. Feeling of meaningfulness significantly correlated with *Overall Stress* ($r = -.22$, $p < .001$) and *Overall Recovery* ($r = .39$, $p < .001$). Similar results were examined for sense of well-being. Moderate relationships were found in relation to *Overall Stress* ($r = -.43$, $p < .001$) and *Overall Recovery* ($r = .52$, $p < .001$).

STEP 4: DIFFERENCES BETWEEN COACHES WITH HIGH VERSUS LOW EMOTIONAL EXHAUSTION SCORES

The comparison of coaches with the highest scores in *Emotional Exhaustion* (≥ 22) and lowest scores in *Emotional Exhaustion* (≤ 8) showed significant differences (see Table 4). Higher exhausted coaches had significantly lower scores for the variables feeling of meaningfulness (U = 331.50, p = .003) and sense of well-being (U = 204.00, p < .001). Significant results also existed for the variables *Overall Stress*, *Overall Recovery*, depersonalization, and personal accomplishment. However, the mean value of *Overall Stress* for coaches with highest scores in *Emotional Exhaustion* in this sample (M = 2.76, SD = .76) was considered as low or moderate. In contrast, since high scores are favorable for recovery the mean value of *Overall Recovery* (M = 2.45, SD = .63) was classified as low and unfavorable for exhausted coaches. No significant differences were found for the variables, financial security, success, or work hours per week.

Table 4. Descriptive values and non-parametrical comparisons of groups with highest scores of emotional exhaustion (≥ 22, n = 34) and lowest scores of emotional exhaustion (≤ 8, n = 32)

Variable	**Low Group**		**High Group**		***U***	***p***
	M	***(SD)***	***M***	***(SD)***		
Emotional Exhaustion	5.67	(2.32)	26.47	(3.61)	.00	.000**
Depersonalization	3.09	(3.14)	8.85	(5.83)	209.50	.000**
Personal Accomplishment	35.22	(4.82)	32.91	(5.71)	368.00	.024*
Age	41.53	(10.98)	40.35	(10.11)		
Financial Security	1.94	(1.05)	1.65	(1.10)	433.00	.12
Work Hours per Week	39.00	(15.36)	45.06	(18.47)	357.00	.55
Feeling of Meaningfulness	4.56	(.56)	4.03	(.76)	331.50	.003**
Success	4.10	(.65)	3.85	(.86)	448.50	.26
Sense of Well-Being	4.32	(.91)	3.00	(1.16)	204.00	.000**
Overall Stress	1.17	(.49)	2.71	(.76)	40.00	.000**
Overall Recovery	3.90	(.62)	2.36	(.60)	40.50	.000**

Note. *p < .05, ** p < 0.01.

DISCUSSION

The purposes of the current study were firstly to investigate categorical person-related and sport-related characteristics to understand potential differential contributions of key factors to coaches' burnout in a German sample. Second, to study the impact of person-related and perception-related variables in relation to coaches' emotional exhaustion to clarify the impact of these particular variables. Third, the potential differences between high exhausted coaches and low exhausted coaches were examined.

Consistent with previous research, the comparison of categorical variables revealed the effect of social support by the family to exhaustion values [43, 45]. Coaches with support reported lower values of exhaustion compared to coaches without support. Moreover, tensions and conflicts in the family can produce additional stress to the coach and could increase the risk of a burnout syndrome. These results were supported by prior studies [20, 45] and by findings in other work sections [72, 73].

The finding that coaches without alternative coaching jobs to their current position

showed higher values in *Emotional Exhaustion* and lower sense of well-being corresponds with findings of Raedeke et al. [46]. Lacking alternative coaching jobs seems to contribute to emotional stress and potential burnout. Coaches without the security that they have another option seem to experience increased pressure and stress. However, this assumption should be viewed with caution because there was no effect regarding other job alternatives.

In terms of the categorical variables type of sports, gender of athletes, and performance level, no differences were found in contrast to previous studies [37, 39, 40, 42]. Contrary to expectations and earlier research, the experience as a coach or as an assistant coach had no significant effect on the level of exhaustion, either.

The examination of relationships between person-related, perception-related variables, and *Emotional Exhaustion* showed a significant effect for *Overall Stress* and *Overall Recovery*. In addition to the examinations of the extreme group comparison, the results highlighted the role of stress and recovery. As expected, coaches with highest scores in *Emotional Exhaustion* showed a higher level of *Overall Stress* and lower values of *Overall Recovery*. However, descriptive analysis displayed average mean values of *Overall Stress* for the coaches group with the highest scores in *Emotional Exhaustion*. Instead, the results showed a low *Overall Recovery* status for the exhausted coaches. These findings reinforce the assumptions of Kellmann [27] that insufficient recovery might lead to deficits in coping with emotional, physical, and psychological stressors. It was also noteworthy that 76% of the coaches within the group with the highest scores in *Emotional Exhaustion* have been in the preparation period or at the beginning of the current season. These results are of concern because of the high values (*Emotional Exhaustion* ≥ 27) at this point of season. Perhaps these coaches could not use the off-season to recover from the prior season. According to Burke [74], coaches often have a lack of authentic off-season recovery caused by personnel planning for the upcoming season or even earlier commencement of pre-season preparation. Hence, not engaging in adequate recovery seems to result in coaches not detaching from work and work-related thoughts [75]. Binnewies et al. [75] added that employees, who could not detach from work, run higher risk to develop a burnout syndrome. These findings correspond to the remaining results of the two-group comparison. Coaches with high *Emotional Exhaustion* values showed lower values for the perception-related variables sense of well-being and feeling of meaningfulness. Accordingly, if a coach is not able to recover from current strains and has a lack of energy for the job or free time activities, dissatisfaction could be the result and the negative spiral might take its course. Thus, the results underlined that sufficient recovery could be seen as a preventive strategy to reduce stress and the risk of burning out.

Beside the highlighted role of recovery and stress, multiple regressions additionally examined a significant effect for the variable sense of well-being. Moreover, correlation analysis showed significant relationships between the perception-related variables sense of well-being and feeling of meaningfulness in regard to *Emotional Exhaustion*. Accordingly, subjective cognitive perception and appraisal of the current coaching situation seem to have an impact on the emotional exhaustion level of a full-time coach in this sample. These results correspond to the examinations of the extreme group comparison and support the role of perceptions in the cognitive-affective model by Smith [6] and the model of Lazarus [5]. The perception of a situation as positive or negative influences the experienced feeling of stress. Accordingly, coaches who feel dissatisfied by their current job situation because of experienced pressure, conflicts with athletes/management, or the feeling of entrapment by missing job alternatives [25, 46] might invest more emotional energy. This idea is

additionally supported by the significant correlation of the perception-related variables (feelings of meaningfulness, sense of well-being) and the *Overall Recovery* and *Overall Stress* scores. Therefore, the individual perception seems to be very important for energy consuming circumstances and possibly creates a controlling work environment in which external pressures to perform influence the underlying reasons for coaches' behaviors. Such as controlling work environment, which will likely promote extrinsic motivation, can be explained using self-determination theory (SDT) [76–78]. It is proposed that a controlling coaching environment is likely to minimize the satisfaction of three fundamental psychological needs (autonomy, competence, relatedness/sense of belonging) that thwart optimal functioning [76, 78–80]. Consequently, controlling environments that do not contribute to need satisfaction could lead to negative coaches' perceptions of well-being [77, 81]. A more in-depth examination of this idea (psychological need satisfaction/thwarting) should be integrated in future studies examining coach stress, recovery, and burnout.

In summary, the anticipated differences between the burnout level of coaches in different contexts (e.g., type of sport, level) were not confirmed. Rather, a lack of social support as well as missing alternative coaching jobs seemed to contribute to coaches' emotional exhaustion. In regard to the expected relationships of person-related and perception-related variables, the results were partly confirmed. Whereas recovery, stress, sense of well-being, and the feeling of meaningfulness seemed to have an impact on emotional exhaustion, no effects were found for financial security, feeling of success, and work load. Consequently, this study highlights the importance of recovery in managing stress in the difficult work environments of full-time coaches. Moreover, the findings suggest that the individual perception of the current coaching job might have more influence on coaches' emotional exhaustion than context-related variables (e.g., type of sport, level). As a consequence, coaches might experience high levels of exhaustion independent from the work context. This examination of recovery and its relationship to stress is particularly relevant for coaches in all contexts.

STRENGTHS, LIMITATIONS AND FUTURE RESEARCH

The current research was strengthened by the unique approach to survey perception-related variables as well as *Overall Stress* and recovery of the coaches in regard to emotional exhaustion. Additionally, the comparison of contrasting groups (highest and lowest scores in *Emotional Exhaustion*) to examine differences permits the opportunity to find key issues which impact coaches' health. Up to now, only a few studies have used this analytic approach [21, 40]. Another strength is the fact that the current research is the first German study dealing with coaches' burnout for the last ten years including several kind of sports. Accordingly, the study provided current insight about the working conditions of German coaches. Accordingly, the study offers some implications for the education and development of German coaches; specifically, coaches should be encouraged to learn more about the risk of burning out and the importance of recovery and need satisfaction. Thus, coaches should be instructed to monitor their own stress-recovery-ratio and to develop individual strategies to prevent work overloads and to recover sufficient. Additionally, knowledge about stress and the impact of their perception and evaluation of the current situation should be taught.

Despite the strengths of the study, several limitations are recognized and improvements suggested. First, on average the coaches indicated a general low level of burnout symptoms. The mean values of the MBI-C scales *Emotional Exhaustion*, *Depersonalization*, and *Personal Accomplishment* do not represent high stressed coaches. These results correspond

with results of Caccese and Mayerberg [31] as well as Dale and Weinberg [82] who also found low levels of burnout on average. On the one hand, an explanation for the low mean of burnout could be the recruiting of participants because coaches with high burnout and work overload would not respond to time consuming examinations [31, 82]. Future studies should take this into account. On the other hand, burnout is not an issue for every coach. Low or average values of emotional exhaustion might be expected in this field because not every coach is burning out. However, closer considerations displayed that 85% of the participants were in their off-season (10%) and in preparation or near the beginning of the season (75%). High values of burnout would be less expected at beginning of season. This distribution might be due to the fact that the purpose of the study was to examine and compare coaches' emotional exhaustion of different types of sport and different work section (senior, youth, selection). Due to the fact that several types of sport (e.g., track and field, tennis) have a summer and winter season or different start points, it was difficult to identify an overall valid measurement point. Additionally, coaches of selection teams have different timetables over the year compared to club coaches. Hence, collecting data at varying time points during a season is an important consideration. Furthermore, previous examination has highlighted that the values of emotional exhaustion and depersonalization increase over the course of a season [44]. Consequently, it would be interesting to observe burnout scores from a longitudinal perspective.

Second, the current study provided insight into a wide variety of factors associated with coaches' burnout. However, due to its exploratory nature, the survey could not attend to all potential factors associated to burnout, such as motives or personality factors. For example, Tashman et al. [83] have found a relationship between burnout and perfectionism. Future research might also include coaches' motives for coaching and personality factors to achieve a more comprehensive assessment of this construct.

Third, the sample in this study included coaches working with a variety of athletes at a variety of competitive levels. Nevertheless, the amount of coaches for several variables (e.g., female coaches) has been too low to run analysis. Future studies might collect sufficient data from varying coaching contexts to further elucidate key factors.

Finally, the current study focused on the quantitative examination of stress and recovery. Unfortunately, no information about preferred recovery strategies or main strains was assessed. Future research might focus on the qualitative analysis of demands and strains as well as recovery strategies of German coaches and on the longtime development during a season to build up an understanding for the job as a coach. Several studies in the past could function as examples [4, 84]. Additionally, new designs might consider part-time coaches and volunteers. Engelberg-Moston et al. [85] have shown that voluntary coaches experience burnout and it would be interesting to analyze common and novel contributing factors to full-time coaches in Germany.

CONCLUSION

The current study has contributed to the understanding of key variables triggering coaches' burnout. Unlike previous research that has focused mainly on person-related variables, this study also focused on perception-related variables as well as *Overall Stress* and *Overall Recovery*. Moreover, stability analyses showed the importance of the individual evaluation of the situation and the role of recovery with regard to emotional exhaustion. This new information should be used for coaches' education and workshops to improve coaches' health awareness and the ability to perform.

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