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Protective Factors against Psychological Strain in Police Work: The Role of Leadership

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Summary

The experience of prolonged stress at the workplace is associated with a variety of adverse health outcomes among employees. If job demands are high and job-related stress is chronic, employees are at risk of developing physical and mental health problems. A common health problem among working populations is burnout, a syndrome that results from prolonged exposure to job demands that exceed the individual's abilities to cope. Burnout is a form of enduring psychological strain that is characterized by emotional exhaustion and diminished interest in work, accompanied by feelings of ineffectiveness, depersonalization and cynicism about the value of one's work. An occupational group that is especially vulnerable to develop burnout are police officers, who are exposed to high job demands and serious stressors on a daily basis. Burnout among police officers is associated with severe impairments regarding police officers' health, their social environment and the functioning of police organizations. Results of epidemiological studies on mental health indicate that besides burnout police officers also have a heightened risk for developing symptoms of depression, anxiety and posttraumatic stress disorder (PTSD). Since there are stressors that are inherent to police work that can hardly be changed (e.g., difficult police-citizen encounters or confrontation with violence), the promotion of job resources that are protective against job-related strain is of particular importance in order to preserve officers' health and to maintain their working capacities. The aim of this thesis is thus to identify factors that protect against work-related strain in policing, with a special focus on the beneficial role of leadership for workplace health promotion.

Results of study 1 indicated that job demands, operationalized by high workload and assaults by citizens, were associated with higher levels of depression and anxiety levels among police officers, mediated through emotional exhaustion, the core dimension of burnout. On the other hand, social support by colleagues, shared values and positive leadership climate constituted job resources that were negatively associated with the experience of depression and

anxiety. Furthermore, job resources buffered the effect of job demands on emotional exhaustion, indicating that the more resources are available in the work context, the lower is the negative impact of job demands on police officers' mental health.

In study 2 the concept of health-oriented leadership was applied to the context of police work. The results confirmed the beneficial impact of health-oriented leadership on police officers' health. It was associated with more well-being and lower levels of burnout, depression and musculoskeletal problems. Moreover, health-oriented leadership was positively associated with work-related health behaviors (*self-care*) of subordinate police officers. Thus, health-oriented leaders promoted police officers' self-care, which was associated with higher levels of well-being in turn. This implicates that police leaders do not solely affect officer health and well-being by creating favorable working conditions but also by promoting officers' own health-related behaviors.

According to the well-established effort-reward imbalance (ERI) model, job rewards in terms of money, esteem, and career opportunities counterbalance the health-impairing impact of job demands. Leadership plays only a minor role in the operationalization of the reward dimension in the ERI model. The aim of study 3 was thus to enhance the ERI model by adding the concept of health-oriented leadership and to apply it to the context of police work. The results showed that high work effort was associated with higher levels of burnout among police officers. Furthermore, both job rewards and health-oriented leadership were associated with lower levels of burnout. However, only health-oriented leadership, but not job rewards, buffered the health impairing effects of high work effort on burnout levels.

In summary, the results of all three studies point to the crucial role of leadership for the prevention of psychological strain and the promotion of health in policing. Police officers especially seem to benefit from leaders who adopt a leadership style that is not only

characterized by health-promoting behavior, but also by a heightened awareness for specific health issues at the work and a sense of responsibility for health concerns. The findings of this thesis provide valuable directions for future research and practical interventions for promoting healthy working conditions in the challenging and demanding job of police officers.

Table of Contents

Introduction

Chapter 1

Introduction

Leadership is commonly defined as a social influence process between leaders and followers that facilitates the accomplishment of organizational goals (Yukl, 2013). Accordingly, traditional leadership research has focused on developing selection criteria for "effective" leadership by identifying leaders' behaviors and traits linked to an improvement in employee performance or key organizational performance indicators, like net sales or profit margins (Bass & Bass, 2008). Because of the popularity of research paradigms that consider leadership as a tool for optimizing the attainment of organizational goals, the potential occupational health risks and benefits associated with leadership were rarely taken into account (Nyberg, Bernin, & Theorell, 2005). However, a growing number of studies indicate that leadership is not a neutral element from an occupational health perspective. That is, leaders play an important role with regard to health and well-being of employees as well as to negative health outcomes like the experience of stress and burnout (Kuoppala, Lamminpää, Liira, & Vainio, 2008; Montano, Reeske, Franke, & Hüffmeier, 2017; Skakon, Nielsen, Borg, & Guzman, 2010). The majority of the studies on the leadership-health link focus on the impact of leadership styles on mental health outcomes. For good reason, since mental ill-health has become a major factor for absenteeism levels, unemployment, reduced productivity at work and early retirement, resulting in large societal and economic costs (OECD, 2015). An occupational group that is particularly prone to job-related stress and subsequent health problems are police officers (Frank, Lambert, & Qureshi, 2017; Martinussen, Richardson, & Burke, 2007). The aim of this thesis is to identify job demands and resources that are related to mental health problems among police officers and to examine to what extent leadership works as a protective factor against job-related strain in policing.

Stressors of Police Work

Police officers are exposed to various operational stressors on a daily basis. Repeated exposure to people suffering distress, threats to officer safety, the often inconclusive nature of police work and the requirement to be in control of emotions when provoked have been recognized as significant sources of stress in policing (National Institute of Justice Journal, 2000). Prolonged exposure to these physical and psychological stressors is associated with serious consequences that affect officers' health and well-being both at work and in other life roles. For example, chronic work stress is a significant contributor to cardiovascular disease in current and retired police officers (Hartley, Burchfiel, Fekedulegn, Andrew, & Violanti, 2012; Ramey, Downing, & Franke, 2009). Due to working both day and night shifts, sleep disorders are also common among police officers (Neylan et al., 2002). Furthermore, police officers are more likely to develop illness, due to deficiencies in the functioning of their immune systems that result from chronic stress (Blum, 2000). Job-related stress puts officers also at a heightened risk of developing mental illness, such as anxiety, depression, burnout, somatization and posttraumatic stress disorder (Gershon, Barocas, Canton, Xiabin, & Vlahov, 2008; Liberman et al., 2002; Maguen et al., 2009).

While operational stressors mark a risk factor for the health and well-being of police officers, there is growing evidence that especially organizational stressors play a critical role in the development of mental health problems among police officers (Shane, 2010; Syed et al., 2020). Police officers identify organizational factors, that is, aspects of job context as opposed to job content, like work overload, poor leadership, excessive administrative tasks or role conflicts as significant stressors in their daily working routine (Biggam et al., 1997; Newman & Rucker-Reed, 2004; Shane, 2010). Several large-scale studies have revealed that police officers assess organizational stressors to be as stressful as critical incidents in the field (e.g.,

Houdmont, 2017) and that organizational stressors in policing are even more likely to cause psychological distress than operational stressors (Brown, Fielding, & Grover, 1999; Kop & Euwema, 2001). A possible explanation for this finding is that these context-related job stressors are perceived to be beyond one's control and mark thus a greater source of stress for police officers in the daily working routine than stressors related to police operations (Shane, 2010). What makes organizational stressors especially burdensome and lead to frustration and resignation among police officers is that they are not prevented by those in the police department with the power to do so (Chan & Andersen, 2020). Results of a review on the relationship between organizational stressors and mental well-being within police officers indicate that lack of support, high job demands, job pressure, excessive administrative tasks and long working-hours are associated with the experience of emotional exhaustion (Purba & Demou, 2019). Furthermore, results of a recent study indicate that organizational stressors were positively associated with depressive symptoms among officers (Chan & Andersen, 2020).

Mental Health Issues in Policing

In a study on mental health of Australian police officers only 6% reported high well-being, while 32% of the officers reported high to very high psychological distress and 5% had suicidal thoughts (Kyron et al., 2020). However, even though policing is generally considered a high-risk profession for the development of job-related psychological strain, previous research yielded mixed results regarding a heightened prevalence of mental disorders among police officers. While some studies found elevated levels of mental health problems among police officers, other studies showed no substantial differences in mental health compared to other occupations (e.g., Hart, Wearing, & Headey, 1995; Johnson, Todd, & Subramanian, 2005). For example, a study with Dutch police officers found that the prevalence of symptoms of anxiety, depression and hostility were not significantly higher among officers than among other occupational groups that are not considered high-risk groups, such as employees of banks,

supermarkets, psychiatric hospitals and soldiers before deployment (Van der Velden et al., 2013). On the other hand, results of a recent meta-analysis including 272,462 police officers from 24 countries indicate that police officers show a substantial burden of mental health problems and point to the critical health care needs of police officers (Syed et al., 2020). In this large epidemiological study, the overall prevalence was 14.6% for depression, 9.6% for generalized anxiety disorder, 5.0% of alcohol dependence and 8.5% for suicidal ideation. The strongest risk factor for depression and suicidal ideation was high occupational stress. The authors conclude that previous studies may have underestimated the prevalence of mental health problems in the wider police population since most prevalence estimates rely on indirect data derived from mixed samples of multidisciplinary disaster workers, with little relevance to police.

Intrinsic to police work is the repeated confrontation with inherently dangerous situations that are potentially traumatic and pose a threat to the physical and psychological health and well-being of police officers. Even though rates of posttraumatic stress disorder (PTSD) among police officers are lower than those of civilians affected by the same traumatic events (Regehr et al., 2021), results of a recent review indicate that the average prevalence of PTSD among officers is with 14.2 % significantly higher than in the general population (Syed et al., 2020). Furthermore, a large study with over 10,000 police officers in the UK found a prevalence rate of 20.6% when also complex PTSD (CPTSD) is taken into account (Brewin, Miller, Soffia, Peart, & Burchell, 2020). The diagnosis of CPTSD requires that the person reports evidence of disturbances in affect regulation, negative self-concept and difficulties in affect regulation in addition to the regular PTSD symptoms (Maercker et al., 2013).

A further common health problem among working populations is burnout. Burnout is a form of enduring psychological strain that is characterized by emotional exhaustion and diminished interest in work, accompanied by feelings of ineffectiveness, depersonalization and

cynicism about the value of one's work (Maslach, Schaufeli, & Leiter, 2001). Often confused with its antecedent, work-related stress, burnout can result from prolonged exposure to job demands that exceed the individual's resources to cope (Cooper, Dewe, & O'Driscoll, 2001). Experiencing emotional exhaustion is regarded as the central quality of the burnout syndrome, as people refer to a feeling of exhaustion when they describe themselves as "burned out" (Maslach & Jackson, 1981). Emotional exhaustion is also the component of burnout that was found to be primarily related to work stress (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). While burnout is considered an important issue for a diverse range of occupations, it is especially pronounced in human service professions, like health care, social work and law enforcement personnel (Maslach, 1982). Employees from these occupational groups face constant demands from the public they serve, a lack of reciprocity in their working-relationships and often inadequate resources to mitigate those challenges (Buunk & Schaufeli, 1993). These factors also apply to policing, and burnout marks a serious health threat to police officers (Stearns & Moore, 1993). Furthermore, police officers face the difficulties of trying to develop an identity separate from the job, balancing healthy social interactions, dealing with internal department hassles and with frustrations of the legal system (Fishkin, 2015). A specific challenge for police officers poses shifting into different roles depending on the respective encounter and the need to suppress or fake emotions in various contexts (Guy, Mastracci, & Newman, 2008). While this emotional labor can act as a coping mechanism that allows officers to distance themselves from tragedies and misery they may encounter on duty, the repeated experience of emotional dissonance can also lead to higher levels of burnout, in particular to feelings of depersonalization (Schaible & Six, 2016).

Several studies found that police officers are prone to develop burnout and that the prevalence of burnout is high in this occupational group. For example, elevated rates of burnout were found in a sample of British police officers compared to prevalence rates in the general

population (Houdmont, 2013). Hawkins (2001) assessed burnout levels across four police departments in the U.S. and found that over one third of the officers scored high emotional exhaustion, the primary component of burnout, while over half reported high feelings of depersonalization. Results of a recent large-scale study on burnout levels among American police officers revealed that approximately 19% of the officers experienced severe levels of emotional exhaustion and 13% had extreme levels of depersonalization (McCarty, Aldirawi, Dewald, & Palacios, 2019). While there is evidence that burnout poses a significant health problem in police work, there are also studies that did not find elevated burnout levels among police officers in comparison with other occupational groups in Norway (Kop, Euuwema, & Schaufeli, 1999) and in the Netherlands (Martinussen et al., 2007).

The implications of burnout among police personnel are multifaceted and serious, not only for the officers themselves but also for their families, the quality of service provided to the public and the organization as a whole. Studies on potential links between the experience of burnout and health issues among police officers indicate that burnout is associated with various health complaints, such as headaches and insomnia (Michinov, 2005), medication use (Mikkelsen & Burke, 2004) and thoughts of suicide (Berg, Hem, Lau, Loeb & Ekeberg, 2003). There are also various negative outcomes for the families of police officers suffering from burnout, such as spouse violence (Johnson et al., 2005), work-family conflicts (Mikkelsen & Burke, 2004), displays of anger, unsatisfactory marriages, being uninvolved in family matters and spending time away from the family (Jackson & Maslach, 1982). With regard to job-related behaviors, police officers with high levels of burnout show a more positive attitude towards violence, a more frequent actual use of violence during the officers' duty (Kop et al., 1999) and negative coping mechanisms, like psychological distancing from the general public (Padyab, Backteman-Erlanson, & Brulin, 2016). With regard to impairments on an organizational level, burnout mediates the relationship between job demands and counterproductive work behaviors

among police officers (Smoktunowicz et al., 2015) and is associated with job dissatisfaction as well as desires to leave the job (Pines & Keinan, 2005).

Although psychological strain is a common health problem in policing, officers with mental health problems often refrain from asking for help and only few seek treatment (Jetelina et al., 2020; Violanti, 1995). Berg, Hem and Ekeberg (2006) found that less than 10% of officers suffering from anxiety and depression symptoms sought psychological help. Several factors have been identified for the hesitance among police officers toward using mental health services, including ethos of autonomy and emotional control (Kappeler, Sluder, & Alpert, 1998; Kirschman, Kamena, & Fay, 2013), and lack of confidence in mental health providers (Blau, 1994). Moreover, one of the most significant barriers for police officers to seek mental health services and support is mental health stigma (Jetelina, Molsberry, Gonzalez, Beauchamp, & Hall, 2020; Karaffa & Koch, 2016). Police officers may believe that their colleagues think that they are weak, not fit for duty and unreliable as a source of operational back-up when they make use of mental health care services (Levenson & Dwyer, 2003; Royale, Keenan, & Farrell, 2009; Wheeler, Fisher, Jamiel, Lynn, & Hill, 2018). Moreover, police officers are concerned that seeking support for mental health issues will have a negative impact on their promotion opportunities and their career progression (Haugen, McCrillis, Smid, & Nijdam, 2017; Wheeler et al., 2018). In a recent study among law enforcement personnel in the USA, over 90% of the officers perceive stigma as negatively influencing help-seeking behavior (Drew & Martin, 2021). The stigma-related avoidance of mental health service usage among police officers is associated with increased levels of both interpersonal and psychological impairment within police agencies (Levenson & Dwyer, 2003).

Leadership and Employee Health

The etiology of mental disorders include a wide array of social, psychological and biological factors ranging from significant life events, exposure to adverse social circumstances, deficient coping skills and low self-esteem to physiological or genetic factors (Mrazek & Haggerty, 1994). Leadership, defined as a social influence process, may work as a significant social factor in the development of mental disorders as well as in the promotion of positive mental health at the workplace (Montano et al., 2017). Leaders have an influential role and formal power within an organization and leaders' behavior and communication were found to have a direct influence on employee health and well-being (Dormann & Zapf, 1999). Since leaders are responsible for the delegation and organization of tasks, leaders also affect employee well-being indirectly by shaping employees' psychosocial working conditions, such as task variety, autonomy, role clarity, or meaningfulness (Jiménez, Winkler, & Bregenzer, 2017; Nielsen, Randall, Yarker, & Brenner, 2008). Furthermore, leaders also experience work-related stress and affect employees' psychological distress by their own strain (Li, Wang, Yang, & Liu, 2016). Finally, by showing more or less healthy work behavior and attitudes, leaders may also serve as role models for employees (Kelloway & Barling, 2010).

A leadership theory that has widely been studied regarding the association between leadership style and employee health is transformational leadership, which emphasizes the role and characteristics of leaders (Bass & Riggio, 2006). It refers to leaders influencing both values and aspirations of followers by activating higher-order needs and motivating followers to transcend self-interest for the benefit of the organization (Bass, 2010). The leader achieves this through idealized influence (charisma), inspiration, intellectual stimulation, or individualized consideration. *Idealized influence* and *inspirational leadership* are attained when leaders are able to envision a desirable future, provide strategies how it can be reached, set an example to be followed, set high standards of performance while showing determination and confidence.

Intellectual stimulation is displayed when the leader provides support for followers in order to become more creative and innovative. *Individual consideration* refers to paying attention to the job-related developmental needs of followers. Reviews on the association between leadership and health outcomes indicate that transformational leadership is negatively associated with negative mental health states (affective symptoms, burnout and stress) and positively associated with positive mental health, like well-being and psychological functioning (Gregersen, Kuhnert, Zimber, & Nienhaus, 2011; Montano et al., 2017; Skakon et al., 2010; Weberg, 2010). Besides transformational leadership, research also indicates a positive relationship of other leadership concepts such as relations-orientated, supportive, and considerate leadership with health and well-being among employees (for an overview see Montano et al., 2017). However, these classical leadership concepts were developed to explain employee performance and do not provide information on specific health-related behaviors of leaders and the process of how they influence health of followers (Vincent-Höper & Stein, 2019.). Thus, several researchers raised the concern that investigating the leadership-health link with general leadership concepts may lead to inappropriate conclusions with regard to specific health outcomes of employees (Barling & Cloutier, 2016; Gurt, Schwennen, & Elke, 2011). In the last decade a growing number of domain-specific leadership concepts were developed in order to better understand links to employee health and to identify specific leadership behaviors that protect and promote employee health (Gurt et al., 2011; Jiménez, Winkler, & Dunkl, 2017). Moreover, the traditional leadership research focuses on leaders' behaviors towards followers without taking motivational or cognitive aspects of leadership into account (Kelloway & Barling, 2010). To address these issues of the existing traditional leadership theories, the concept of health-oriented leadership (HoL) was developed (Franke, Felfe, & Pundt 2014). The HoL framework provides a model of health-specific leadership that also attends to the leaders' attitudes towards follower health besides behavioral aspects of leadership. In sum, HoL incorporates three dimensions of leadership: health behaviors, value of health, and health awareness (Franke & Felfe, 2011).

Health behavior refers to engaging in health-relevant activities that promote the health of followers, such as reducing work-related sources of strain, providing health-relevant information and shaping health-promoting working conditions. *Health awareness* refers to the leaders' attention and sensitivity to health and the conditions causing strain at the workplace. For example, a leader with a high awareness for health issues is more likely to recognize signs of strain among followers at an early stage and to address this in direct communication. *Value of health* describes the importance leaders place on their own health and on the health of their employees as well as on health-related topics in the work context in general. For effective health-oriented leadership ideally all three dimensions should be addressed by leaders (Franke et al. 2014).

Besides leadership behaviors and attitudes, the HoL concept also addresses how followers care for their own health in the working context. It proposes that health-oriented leadership promotes health through the followers' own health behavior (*self-care*), accounting for an active role of employees in the leadership-health link (Franke et al., 2014). According to the HoL model, the degree of how employees are capable of handling demands and resources at work and whether they take care of their own well-being depends on the degree leaders show health-oriented behaviors and attitudes at the workplace. HoL can thus be categorized as a resource that promotes employees' health-related behaviors and helps to maintain their health (Arnold & Rigotti, 2020). Finally, the HoL concept also places emphasis on the leaders' own health-related behavior, that is, their self-care, assigning leaders a role model function and claiming cross-over effects from leaders to followers (Franke et al., 2014). Klug et al. (2019) found most favorable health outcomes among employees when both leaders' and followers' self-care was high. Interestingly, diminished self-care of leaders was associated with more strain and poorer health among followers, supporting the presumed role model function of leaders for employee health.

Previous research supports the structure and validity of the HoL concept (Franke et al., 2014; Horstmann, 2018; Köppe, Kammerhoff, & Schütz, 2018). In addition, the validity and usefulness of health-specific leadership constructs to predict employee health and well-being were supported by several studies showing that they explain variance in employee health outcomes above and beyond general task-oriented or transformational leadership (Franke et al., 2014; Gurt et al., 2011; Vincent-Höper & Stein, 2019). Furthermore, results of a study by Kranabetter and Niessen (2017) indicate that the negative relationship between transformational leadership and employee exhaustion and cynicism was stronger when leaders scored high on health-oriented leadership. A major advantage of health-specific leadership concepts is that they allow conclusions about concrete and health-specific practical indications for the promotion of employee health.

Police Leadership and Health

Leadership is a key force shaping police organizations and one of the most important predictors of whether organizations are able to function effectively in dynamic environments (Pearson-Goff & Herrington, 2013). Early studies on police leadership indicate that most police organizations adopted a quasi-military organization model characterized by a rigid hierarchy of authority, impersonality, and authoritarian command structures (Brief, Aldag, Russel, & Rude, 1981). Traditionally, the predominant leadership style of law enforcement leaders can thus be considered as authoritarian and autocratic, characterized by little consideration for the aims and concerns of subordinates in the decision-making process (Beito, 1999). Over the last decades, studies on leadership styles and supervisory within policing indicate that leaders employ a broader range of styles and that there has been a transition toward a more democratic leadership and mutual relationship style in police organizations (Sarver & Miller, 2014). This transition of leadership styles is in line with research on police leadership indicating that a transformational leadership style is more effective and that police officers respond best to leaders who encourage

open communication and participation (Andreescu & Vito, 2010; Krimmel & Lindenmuth, 2001; Silvestri, 2007). A literature review on effective police leadership identified ethical behavior, trustworthiness, legitimacy, being a role model, open communication and critical, creative and strategic thinking ability as key characteristics of effective police leaders (Pearson-Goff & Herrington, 2013). Furthermore, five activities that effective police leaders engage in were problem solving, creating a shared vision, engendering organizational commitment, driving and managing change, and caring for subordinates. Overall, there is growing support for favoring a less authoritarian style in police leadership. However, studies also point to the importance of being able to adapt leadership styles in policing to suit the respective context (for an overview see Campbell & Kodz, 2011), that is, in certain crisis or emergency situations police leaders need to be able to switch to a directive and active leadership style if required.

Despite the specific characteristics and demands of police leadership, it is likely that leadership is not only important for the efficient functioning of police organizations and job performance but that it also affects the health of subordinate officers. While there is a large body of research that supports the association between leadership and employee health across different occupational groups (Kuoppala et al., 2008; Skakon et al., 2010), studies on the relationship between police leadership and health outcomes of subordinates are still rare. Results of studies on the leadership-health link in policing indicate that there is a positive relationship between beneficial health outcomes among police officers and supervisor support (Thompson, Kirk & Brown, 2005), positive leadership climate (Engel et al., 2018), and transformational leadership (Can, Hendy & Can, 2017; Russell, 2014). Despite these promising results, more studies on the potential health promoting impact of police leadership on subordinates are needed to understand through which specific behaviors and attitudes leaders affect the health of subordinate police officers.

Protective Factors against Work-related Strain in Policing

Besides the health-promotion potential of leadership, research on occupational health in policing has identified several job resources that are associated with beneficial effects on police officers' health. For example, social support by colleagues and supervisors at work is regarded as a key job resource in policing that is associated with work-related well-being (Biggs, Brough, & Barbour, 2014; Gillet, Huart, Colombat, & Fouquereau, 2013; Van Gelderen & Bik, 2016) and reduced mental health problems among police officers (Hansson, Hurtig, Lauritz, & Padyab, 2017; Van den Broeck, Cuyper, De Witte, & Vansteenkiste, 2010).

Furthermore, the availability of job rewards was identified as a protective factor against mental health problems among police officers (Janzen, Muhajarine, Zhu, & Kelly, 2007; Violanti et al., 2018). The studies applied the effort-reward imbalance model (ERI) to the context of police work, a well-established occupational stress model that claims that the availability of rewards in the work context is of key importance for employee health (Siegrist, 1996). In the ERI model, rewards include money, esteem, status consistency and career opportunities while efforts refer to the demands and requirements related to the job, including heavy workload, time pressure and being interrupted at work. The model is based on principles of social reciprocity and states that an imbalance due to high effort and low reward at work generates strong negative emotions and stress responses among employees, which in turn increase the risk of long-term adverse health effects. Violanti et al. (2018) found that imbalance between effort and reward is associated with increased levels of the burnout dimensions emotional exhaustion and cynicism among police officers. The experience of ERI was also found to be related to the subjective likelihood of health-related early retirement (Georg et al., 2019), greater psychological distress (Janzen et al., 2007), and a nearly eight times higher risk of suffering from depression (Garbarino et al., 2013) across different samples of police officers. Thus, there is preliminary evidence that the availability of job resources is crucial for police

officers confronted with high work demands in order to reduce the risk of developing mental health problems.

Research Objectives

Due to the highly stressful nature of police work and its negative consequences for police officers' health, their social environment and the organization as a whole, the identification and promotion of protective factors against work-related strain appears to be of particular importance in this occupational group. The aim of the first study of this thesis is to

1. identify job demands and job resources specific to police work that are associated with depression and anxiety levels among officers
2. test if work-related emotional exhaustion, the core symptom of burnout, plays a mediation role in the relationship between job demands and depression levels among police officers
3. examine if job resources (social support, shared values, positive leadership climate) buffer the effect of job demands on emotional exhaustion and thus serve as a protective factor against job-related strain in policing

Leadership is an important determinant of work-related health outcomes in organizations and a large body of research supports a substantial association between leadership and employee well-being. Especially a transformational leadership style is associated with positive health outcomes among employees. Also in the context of police work research indicates that rather a transformational leadership style that encourages communication and participation is associated with health and well-being among subordinates. However, classical leadership theories like transformational leadership focus on performance and motivational aspects of employees and do not provide information on health-specific leader behaviors and attitudes. The aim of the second study is thus to

1. apply the concept of health-oriented leadership (HoL) to the context of police work for the first time
2. examine the impact of health-oriented leadership (HoL) on health outcomes of police officers
3. test whether HoL has a direct effect on police officers' mental and physical health and whether this relationship is mediated by work-related health behaviors (*self-care*) of the officers themselves

The availability of rewards as defined in the effort-reward imbalance (ERI) model (money, esteem and career opportunities) was identified as an important factor to alleviate the potential health impairing impact of high work effort among police officers. Thus, the third study aims to

1. replicate the finding that job rewards are associated with reduced burnout levels among police officers
2. examine whether also health-oriented leadership (HoL) is associated with reduced burnout levels among police officers
3. test whether besides job rewards HoL is also capable of buffering the health impairing effects of high work effort in the context of police work

Study 1

The Role of Job Demands and Job Resources in the Development of Emotional Exhaustion, Depression, and Anxiety among Police Officers

Chapter 2

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Abstract

The aim of this study was to examine whether job demands and job resources predict depression and anxiety levels among police officers and whether emotional exhaustion plays a mediating role in this relationship. In addition, we tested whether job resources can serve as a protective factor against job-related strain. A total of 843 German police officers completed the questionnaires in an online survey. Results showed that job demands (high workload and assaults by citizens) predicted higher levels of depression and anxiety among police officers, mediated through emotional exhaustion. Furthermore, job resources (social support by colleagues, shared values, and positive leadership climate) buffered the effect of job demands on emotional exhaustion and were negatively associated with depression and anxiety levels. The identification of job demands and job resources that are related to psychological strain among police officers provides important information for interventions in order to promote mental health in the context of police work.

Keywords: police officers, emotional exhaustion, depression, anxiety, job demands–resources model

Introduction

Previous studies have shown that workplace stress has a profound impact on employees' mental health (Bonde, 2008; Stansfeld & Candy, 2006). The job of police officers is regarded as especially stressful and demanding (Liberman et al., 2002; Violanti et al., 2006). Thus, it can be assumed that this subset of employees is particularly prone to job-related strain and health issues. In a British study of 26 occupations, police work was identified as one of the six most stressful jobs, indicated by lower than average scores on physical health, psychological well-being, and job satisfaction (Johnson et al., 2005). However, results of studies on job-related strain and mental health in the context of police work are mixed, indicating no clear evidence that police officers suffer from elevated levels of burnout and mental illness (Anson & Bloom, 1988; Chen et al., 2006; Kop, Euwema, & Schaufeli, 1999; Newman & Rucker-Reed, 2004; Storch & Panzarella, 1996). It is important to note that job-related stress and strain are not perceived per se as negative by police officers, in fact it can initially promote social bonding among colleagues and increase feelings of excitement and attraction to the job (Gilmartin, 1990). Nevertheless, there is evidence that organizational and operational stressors can lead to burnout and mental disorders among police officers in the long run (Collins & Gibbs, 2003; Gaines & Jermier, 1983; Gershon, Lin, & Li, 2002; Golembiewski & Kim, 1990), while job resources are associated with beneficial health outcomes (e.g., Marchand & Durand, 2011). The aim of the present study was to identify job demands and job resources that are relevant to police work and to examine their relationship to the occurrence of depression and anxiety symptoms among police officers. Furthermore, in order to target potential underlying processes in the development of depression and anxiety in an organizational context, we also investigated whether job-related emotional exhaustion plays a mediating role in the

relationship between job demands and psychological strain and whether job resources can serve as a protective factor in this process.

Emotional Exhaustion, Depression and Anxiety among Police Officers

Emotional exhaustion is a key aspect of burnout, a syndrome that occurs in response to high work demands and chronic work-related stress (Maslach, Schaufeli, & Leiter, 2001). Burnout is defined as a state of exhaustion in which one is cynical about the value of one's work accompanied by feelings of ineffectiveness and reduced ability to cope. Emotional exhaustion is regarded as the central quality of the burnout syndrome, as people refer to a feeling of exhaustion when they describe themselves as *burned out* (Maslach & Jackson, 1981) and it is the component of burnout that is primarily related to job demands (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

Studies on potential links between the experience of burnout and health issues among police officers indicate that burnout is associated with subjective health complaints, such as headaches, insomnia, and stomach pain (Michinov, 2005); medication use (Mikkelsen & Burke, 2004); and thoughts of suicide (Berg, Hem, Lau, Loeb, & Ekeberg, 2003). On an organizational level, burnout mediates the relationship between job demands and counterproductive work behaviors among police officers (Smoktunowicz et al., 2015) and is associated with job dissatisfaction as well as desires to leave the job (Pines & Keinan, 2005). With regard to job-related behaviors, police officers with high levels of burnout show a more positive attitude toward violence and a more frequent actual use of violence (Kop et al., 1999). Burnout was also found to influence police officers' behavior in conflict situations with civilians (Euwema, Kop, & Bakker, 2004) and is associated with negative outcomes for their families, such as spouse violence (Johnson, Todd, & Subramanian, 2005), work-family conflicts (Mikkelsen & Burke, 2004), displays of anger,

unsatisfactory marriages, being uninvolved in family matters, and spending time away from the family (Jackson & Maslach, 1982).

With regard to prevalence rates of burnout among police officers, there are few consistent findings to date. In a British sample, elevated rates of burnout were found in police officers compared to normative data (Houdmont, 2013). However, in relation to other occupations in the criminal justice systems, police officers showed no higher burnout rates in an American study (Anson & Bloom, 1988) and were found to have relatively low levels of emotional exhaustion in comparison with workers in the human services sector in the Netherlands (Kop et al., 1999). In a study of the Norwegian police force, the overall level of burnout was low among police officers compared to other occupational groups (Martinussen, Richardsen, & Burke, 2007).

Besides burnout, depression is another common health problem in working populations today, and psychosocial stressors at work are related to an elevated risk of subsequent depressive symptoms or major depressive episodes (Bonde, 2008). Depression is assumed to be closely related to burnout. A previous study on the relationship between burnout and depression found that the risk of developing a depressive disorder was greater among employees if burnout was severe (Ahola et al., 2005). A further longitudinal study indicated that job demands predicted burnout over time, which in turn predicted future depression but not vice versa (Hakanen, Schaufeli, & Ahola, 2008). This supports the assumption that burnout and depression are related but distinct mental health impairment processes. To date, only a few studies focused on the prevalence rates of depressive disorders in the context of police work. A Taiwanese study found that depression rates among police officers were high compared to the general population (Chen et al., 2006). The results of an American study on mental health

conditions of police officers indicated that 9% of the respondents suffered from clinically significant depression (Fox et al., 2012).

Besides burnout and depression, high job demands are also associated with the development of clinically significant anxiety symptoms. Workers with high job demands were found to have a two-fold risk of developing generalized anxiety disorder compared to workers with low job demands (Melchior et al., 2007). Results of a further study indicated that high psychological job demands predict the incidence of anxiety disorders (Plaisier et al., 2007). With regard to the prevalence of anxiety levels among police officers, two studies with police officers in the United States indicated that their levels of both state and trait anxiety were similar or slightly lower compared to normative data for working males (Newman & Rucker-Reed, 2004; Storch & Panzarella, 1996).

The Relationship between Job Demands, Job Resources and Health Outcomes of Police Officers

Although the results of previous studies regarding the level of mental disorders and psychological strain of police officers in comparison with other occupational groups or normative data are mixed, there is clear evidence that job-related demands and stress can have a negative impact on employees' mental health (e.g., Stansfeld & Candy, 2006). A study differentiating typical operational stressors of police work in a British sample revealed exposure to death and disaster, violence and injury, and sexual crime as three distinct categories of stressors that the police officers are confronted with on duty (Brown, Fielding, & Grover, 1999). Besides operational stressors related to physical harm and aggression, verbal threats, insults, and criticism by citizens also appeared to be important stressors for police officers on patrol (Collins & Gibbs 2003; McCreary & Thompson, 2006). For example, besides physical force and threats with a weapon, verbal threats by citizens had a strong influence on the experience of job-related stress among police officers

(Manzoni & Eisner, 2006). However, several studies indicate that organizational factors such as inconsistent leadership styles and excessive administrative duties are more often identified as negative stressors by police officers than operational stressors, such as potential traumatic incidents or exposure to human misery (Biggam, Power, Macdonald, Carcary, & Moodie, 1997; Newman & Rucker-Reed, 2004; Shane, 2010). For example, heavy workload predicted depression among police officers in a Taiwanese sample (Chen et al., 2006) and was negatively associated with well-being in a British sample of police officers (Juniper, White, & Bellamy, 2010). Another British study found excess workload to be one of the stressors that was most associated with mental ill-health among police officers (Collins & Gibbs, 2003). Further organizational stressors of police work linked to mental health problems are poor management, time pressure, staff shortages, and shift work (Brown & Campbell, 1990; Biggam et al., 1997; Kop et al., 1999).

Whereas these job demands are associated with negative health outcomes in police officers, there are job resources linked to beneficial health outcomes and reduced work-related strain. Seeking social support as a coping strategy in general buffered the relationship between stressful work events and the experience of distress among police officers (Patterson, 2003). More specifically, social support by colleagues in the context of work was found to be negatively associated with the burnout dimensions emotional exhaustion and cynicism, whereas social support by supervisors was additionally linked to less psychological distress among the police officers (Marchand & Durand, 2011). The results of a further study indicated that social support by colleagues and supervisors was negatively associated with all three burnout dimensions in a sample of Norwegian police officers (Martinussen et al., 2007). Leadership style also appeared to be an important job resource in a study of a large urban police force in the United States (Trinkner, Tyler, & Goff, 2016). The officers' perception of the degree to which their supervisors treated them

in a respectful manner and were transparent regarding their decision-making was linked to the officers' well-being and increased organizational efficiency.

The Job-Demand Resources Model and Police Work

In order to investigate the influence of job demands and resources on job-related strain and mental health of police officers, the current study applied the integrative framework of the Job Demands-Resources (JD-R) model (Demerouti et al., 2001; Schaufeli & Bakker, 2004). The JD-R model proposes that job characteristics influence employee health and well-being by a motivational and a health impairment process. The motivational process postulates that the availability of job resources promotes employees' motivation and leads to favorable work outcomes. The main focus of the present study was on the health impairment process of the JD-R model, stating that high job demands and poor job resources result in a state of emotional exhaustion, which will in turn lead to health problems, such as depression, anxiety, or psychosomatic complaints (Schaufeli & Taris, 2014). Thus, the model proposes that emotional exhaustion mediates the relationship between job demands and employee health by the gradual reduction of mental resources (i.e., burnout). In addition to this main effect, the JD-R model suggests that job resources can buffer the effect of job demands on emotional exhaustion and thereby reduce job-related strain. Employees possessing high job resources should experience lower levels of job-related strain and emotional exhaustion, since the availability of job resources makes them more capable of dealing with the demands they encounter at work (Bakker, Demerouti, & Euwema, 2005).

To date, only few studies have applied the JD-R model in the field of policing. A study on American police officers utilized the JD-R model as a theoretical framework and found that role identification as a personal resource served to reduce the negative effects of working in a community with a low socioeconomic status on the experience of

emotional exhaustion (Grawitch, Barber, & Kruger, 2010). A Taiwanese study tested the hypothesis that the relationship between job demands and health problems among police officers is mediated by emotional exhaustion, as postulated by the JD-R model (Wu, 2009). In this study, job demands were defined as role conflicts that police officers experience with regard to balancing work and family life and the public's expectation of the officers being uncompromising and friendly at the same time. Results indicated that role conflicts, emotional exhaustion, and health problems were positively correlated and that emotional exhaustion played a partially mediating role in the relationship between the experience of role conflicts and health problems. A further study in the context of police work using the JD-R model as a conceptual framework found that job demands (overtime work, work conflicts, and work-family pressures) and job resources (autonomy and social support) were related to burnout. This in turn predicted individual outcomes, such as psychosomatic complaints and satisfaction with life, as well as work-related outcomes, such as job satisfaction, intention to quit, and organizational commitment (Martinussen et al., 2007). Hall, Dollard, Tuckey, Winefield, and Thompson (2010) investigated the role of work-family conflicts with regard to job demands and emotional exhaustion in police officers, using the JD-R theory among other theories as a theoretical basis. They found that a more comprehensive model with reciprocal and cross-linked effects fitted the data better than models with work-family conflict or emotional exhaustion as mediators in the relationship between job demands and emotional exhaustion and work-family conflicts, respectively.

To date, no study has tested the impact of job demands inherent to police work on the development of emotional exhaustion, anxiety, and depression among police officers while taking the potential beneficial effects of job resources on psychological strain into account at the same time. The aim of the present study was thus to test this

complex relationship by applying the JD-R model to the context of police work. The benefit of the JD-R model is that it enables the examination of underlying processes in the development of work-related health problems as well as potential buffering effects of job resources on job-related strain. Furthermore, instead of being restricted to a limited set of predictors, the JD-R model allows to implement job resources and job demands that are specific and of high relevance for police work.

According to the health impairment process of the JD-R model, we hypothesized that job demands (workload and assaults by citizens) predict emotional exhaustion, which in turn predicts the experience of depression and anxiety among police officers. With regard to the motivational process of the JD-R model, a second hypothesis was that job resources, defined as social support by colleagues, shared values, and a positive leadership climate, are negatively related to the depression and anxiety levels. A third hypothesis refers to the potential buffering effect of job resources on job-related strain. As postulated by the JD-R model, we hypothesized that job resources buffer the impact of job demands on levels of emotional exhaustion experienced by the police officers.

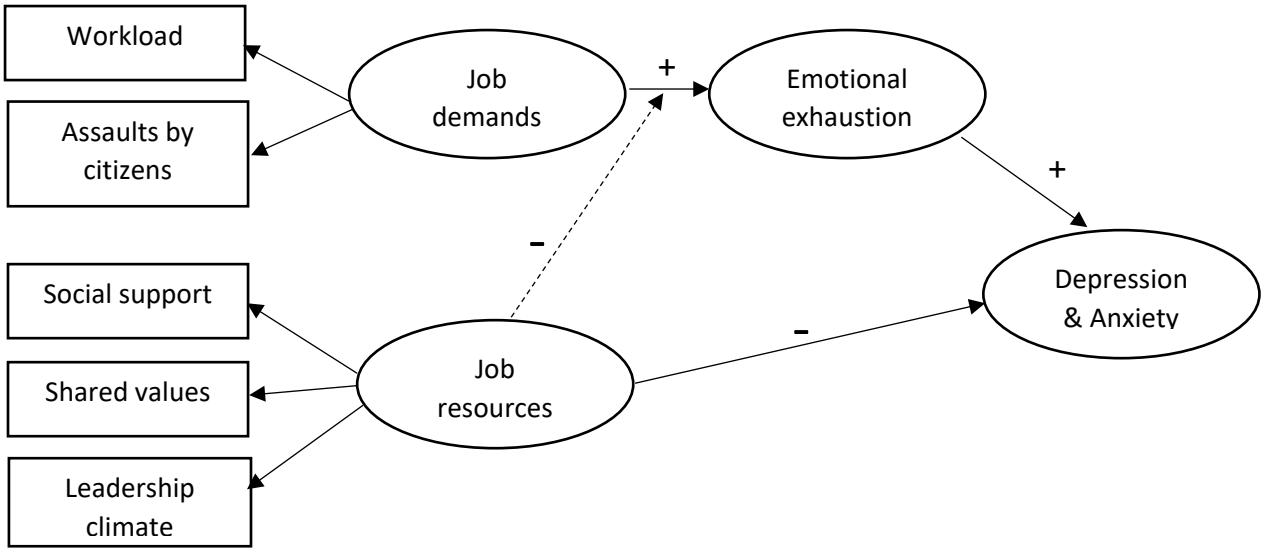


Figure 1: Overview of the hypotheses of the JD-R model that were examined in the present study (the interaction path is indicated by a dashed line)

Method

Participants and Procedure

The present study was part of a health-monitoring program in a large urban police department in Germany and was conducted in form of an online survey. The department had 1,857 members at the time and was part of a larger agency that consisted of six departments with a total of approximately 23.550 employees. Police officers received an invitation to participate in the survey via their working e-mail address. Officers who were out of the office due to temporary or permanent inability to work were identified and were sent a paper pencil version of the questionnaire to their home addresses by the agency. The paper pencil version included a link to the online survey, in case the person preferred to answer the questionnaire online. In total, we received 27 completed paper pencil questionnaires from police officers currently unable to work due to health issues. All participants were informed that participation was voluntary and anonymous. The data were kept confidential and protected at all stages of the study. All 1,857 police officers of the department were invited to take part in the survey, of which 941 answered the questionnaire completely, resulting in a response rate of 50.7%. In the present study, only police officers with citizen encounters were included in the data analysis (N = 843). Of the sample, 72.2% (n = 609) were male and 27.8% were female (n = 234), which reflects the gender distribution of the agency as a whole. The mean age of the sample was 40.9 years (SD = 9.0). Compared to the mean age of all employees of the larger agency (43.4 years), the participants of the present study were slightly younger. The participants had been in the police force for 1 up to 43 years with an average of 19.8 years of service (SD = 10.1). The study design was approved by the ethics committee of Freie Universität Berlin and by the personnel board of the police department.

Measures

Job demands were assessed by workload and assaults by citizens while being on duty. W*orkload* included work and time pressure on the job, being distracted by additional tasks, as well as the growing amount of work over the last years. It was measured by a subscale of the short version of the Effort-Reward Imbalance Questionnaire (Siegrist, 2012). Participants were asked to estimate the extent of their work and time pressure on a 4-point frequency rating scale ranging from *I don´t agree at all* (1) to *I totally agree* (4). Workload was measured by four items. A typical item was "I am constantly under time pressure at work due to high workload." The internal consistency of *workload* was acceptable (α = .75). *Assaults by citizens* were measured with three items (Bosold, Ohlemacher, Kirchberg, & Lauterbach, 2002). The items assessed the amount of verbal threats, insults and abuse that police officers had experienced in the last 12 months. Participants were asked to estimate the extent of experienced assaults on a 9-point frequency rating scale ranging from *never* (1) to *several times per day* (9). A typical item was "In the last 12 months I was verbally insulted by citizens…". The internal consistency of assaults by citizens was excellent (α = .96).

Job resources were assessed by the degree of social support, shared values and leadership climate. *Social support* and *shared values* were measured by an adapted German version of the Organizational Check-up Survey (Leitner & Maslach, 2000) by Beerlage, Hering and Springer (2007). *Social support* was measured by four items that included mutual trust and support among colleagues, work-sharing, and feelings of group identity. A typical item was "The members in my team support each other". The participants were asked to estimate the levels of social support on a 5-point frequency rating scale ranging from *I don´t agree* (1) to *I totally agree* (5). The internal consistency of social support was good (α=.84). *Shared values* assessed whether the participants consider the values, goals, quality standards, and career development opportunities in accordance with the agency, respectively (Beerlage et al., 2007).

It was measured by four items on a 5-point frequency rating scale ranging from *I don´t agree* (1) to *I totally agree* (5). A typical item was "I can identify with the values of the police department." The internal consistency of shared values was acceptable (α = .75). *Leadership climate* assessed the degree of the supervisors' consideration for individual employees, provision of clarity in goals and role expectations, supplying information, feedback, and support (Hollmann & Hanebuth, 2011). Leadership climate was measured by four items on a 4-point frequency rating scale ranging from *never* (1) to *often* (4). A typical item was "My superior acknowledges it when I perform well at my work." The internal consistency of the leadership climate was acceptable (α = .77).

Emotional exhaustion was assessed by an adapted version of the burnout dimension emotional exhaustion of the Maslach Burnout Inventory Human Service Survey (Bosold et al., 2002). Emotional exhaustion describes the feeling of being overstrained and depleted by work activities. It was measured by four items on a 7-point frequency rating scale ranging from *never* (0) to *every day* (6). A typical item was "I feel depleted / exhausted because of my work." The internal consistency of emotional exhaustion was good (α = .85).

Depression and anxiety were assessed by the Patient Health Questionnaire-4 (PHQ-4), an ultra-brief self-report questionnaire that consists of a 2-item anxiety scale (GAD-2) and a 2-item depression scale (PHQ-2) (Kroenke, Spitzer, & Williams, 2003; Löwe et al., 2010). The PHQ-4 is an efficient screening tool for identifying individuals who may be suffering from one or both of these mental disorders. The participants were asked: "Over the last two weeks, how often have you been bothered by the following problems?" Response options were *not at all* (0), *several days* (1), *more than half the days* (2) and *nearly every day* (3). The PHQ-2 includes the two core criteria for depressive disorders, assessed by the following two items: "Feeling down, depressed or hopeless" and "Little interest or pleasure in doing things". The following two items of the GAD-2 assess the core criteria for generalized anxiety disorders, which are

also good screening items for panic, social anxiety, and posttraumatic stress disorder (Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007): “Feeling nervous, anxious, or on edge” and “Not being able to stop or control worrying”. The total scores of the GAD-2 and PHQ-2 range from 0 to 6, with the cutoff score of 3 for both scales. A study on the psychometric properties of the PHQ-4 revealed good internal reliability, construct validity, and factorial validity of the instrument and confirmed that depression and anxiety worked as two discrete factors (Kroenke, Spitzer, Williams, & Löwe, 2009). In the present study, the internal consistency of the PHQ-4 was acceptable ($\alpha = .79$).

Data Analysis

Descriptive statistics (means, standard deviations) and reliability measures were obtained by using SPSS 23. In order to test the hypotheses regarding the JD-R model, structural equation modeling (SEM) was conducted, using Mplus version 7.4 (Muthen & Muthen, 2014). The fit of the model to the data was assessed by the Chi-Square goodness-of-fit statistic, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Comparative Fit Index (CFI), and the Tucker Lewis Index (TLI), as recommended by Schermelleh-Engel, Moosbrugger, and Müller (2003). For the RMSEA, a cutoff value close to .06, for the SRMR a cutoff value close to .08, and for the CFI and the TLI a cutoff value close to .95 indicate that the hypothesized model fits the data well (Hu & Bentler, 1999). The measurement models were specified and tested first, assuring that issues regarding the measurement of the model could be identified and addressed before the full structural model was tested (Herting & Costner, 2000). First, we tested the measurement model of the two exogenous variables (job demands, job resources). Second, we assessed the measurement model of the two endogenous variables of the model (emotional exhaustion, depression, and anxiety). In order to test the Hypothesis 1 and 2, a model was specified depicting the health impairment process and partially the motivational process of the JD-R model (see Fig. 1). The

latent factor job demands was operationalized by the two exogenous factors workload and assaults by citizens, while the latent factor job resources was operationalized by the three exogenous factors social support, shared values, and leadership climate. In addition, the structural model includes two endogenous variables: first, emotional exhaustion as a mediator variable, and second, depression and anxiety. In order to test hypothesis 3, an interaction term (Job Resources × Job Demands) was included in the model in order to assess whether job resources can buffer the impact of job demands on emotional exhaustion. A significant interaction effect is evident when the path coefficient from the interaction variable to the endogenous variable, in this case emotional exhaustion, is statistically significant. Robust Maximum Likelihood (MLR) estimation was used for all model estimations.

Results

Descriptive Statistics

Table 1 shows the correlations between the study items. Descriptive statistics including means, standard deviations, intercorrelations and reliability coefficients (Cronbach's alpha) of the constructs measured are presented in Table 2. The reliability coefficients (Cronbach's alpha) of the latent exogenous and endogenous variables varied between .75 and .96, indicating good reliability for all the scales. Furthermore, all correlations between the variables were significant at the $p < .01$ level.

Table 1. *Correlations between the study items*

	Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18.	19	2.	21	22	23	24	25	26	27
1.	wl01																											
2.	wl02	.49																										
3.	wl03	.54	.41																									
4.	wl04	.47	.34	.39																								
5.	abc01	.13	.10	.11	.09																							
6.	abc02	.14	.11	.12	.10	.87																						
7.	abc03	.14	.10	.11	.10	.85	.92																					
8.	ss01	-.12	-.09	-.10	-.09	-.07	-.08	-.07																				
9.	ss02	-.13	-.10	-.11	-.09	-.08	-.08	-.08	.64																			
10.	ss03	-.12	-.09	-.10	-.08	-.07	-.07	-.07	.56	.60																		
11.	ss04	-.11	-.09	-.09	-.08	-.07	-.07	-.07	.55	.59	.52																	
12.	sv02	-.12	-.09	-.10	-.08	-.07	-.07	-.07	.24	.26	.23	.22																
13.	sv02	-.10	-.08	-.08	-.07	-.06	-.06	-.06	.21	.22	.20	.19	.41															
14.	sv03	-.12	-.09	-.10	-.09	-.07	-.07	-.07	.25	.26	.23	.23	.48	.42														
15.	sv04	-.11	-.08	-.09	-.08	-.06	-.07	-.06	.22	.23	.20	.20	.43	.37	.43													
16.	lc01	-.15	-.11	-.12	-.10	-.08	-.09	-.09	.30	.32	.28	.27	.29	.25	.29	.26												
17.	lc02	-.14	-.10	-.11	-.10	-.08	-.08	-.08	.28	.30	.26	.26	.27	.23	.27	.24	.57											
18.	lc03	-.13	-.01	-.11	-.09	-.08	-.08	-.08	.27	.29	.25	.25	.26	.22	.26	.23	.55	.51										
19.	lc04	-.14	-.11	-.12	-.10	-.08	-.09	-.09	.29	.31	.27	.27	.28	.24	.28	.25	.60	.56	.54									
20.	phq01	.20	.15	.17	.15	.12	.13	.12	-.18	-.19	-.17	-.17	-.17	-.15	-.18	-.16	-.21	-.20	-.19	-.21								
21.	phq02	.25	.19	.20	.18	.14	.15	.15	-.22	-.24	-.21	-.20	-.21	-.18	-.21	-.19	-.26	-.24	-.23	-.25	.50							
22.	phq03	.21	.15	.17	.15	.12	.13	.12	-.18	-.20	-.17	-.17	-.18	-.15	-.18	-.16	-.22	-.20	-.29	-.21	.42	.51						
23.	phq04	.23	.17	.19	.17	.13	.15	.14	-.21	-.22	-.19	-.19	-.20	-.17	-.20	-.18	-.25	-.23	-.22	-.24	.48	.58	.48					
24.	ee01	.39	.29	.32	.28	.22	.24	.24	-.21	-.23	-.20	-.19	-.20	-.17	-.21	-.18	-.25	-.23	-.22	-.24	.39	.47	.39	.45				
25.	ee02	.36	.27	.29	.25	.20	.22	.22	-.19	-.21	-.18	-.18	-.19	-.16	-.19	-.17	-.23	-.21	-.20	-.22	.36	.43	.36	.41	.70			
26.	ee03	.32	.24	.26	.23	.18	.20	.19	-.17	-.18	-.16	-.16	-.16	-.14	-.17	-.15	-.20	-.19	-.18	-.20	.32	.38	.32	.36	.62	.57		
27.	ee04	.31	.23	.26	.22	.17	.19	.19	-.17	-.18	-.16	-.16	-.16	-.14	-.17	-.15	-.20	-.19	-.18	-.20	.31	.38	.32	.36	.61	.56	.50	

Note: wl= workload, abc= assaults by citizens, ss= social support, sv= shared values, lc= leadership climate, phq= patient health questionnaire (depression & anxiety), ee= emotional exhaustion; $N = 843$

All item correlations are highly significant ($p < .01$).

Table 2. *Means, standard deviations, internal consistencies (Cronbach's Alpha), and correlations between the study variables*

	Variable	Range	M	SD	1	2	3	4	5	6	7
1.	Workload	1 - 4	3.03	.57	(.75)						
2.	Assaults by citizens	1 - 9	3.90	2.01	.18	(.96)					
3.	Shared values	1 - 5	3.04	.82	-.21	-.11	(.75)				
4.	Social support	1 - 5	3.63	.86	-.20	-.10	.45	(.84)			
5.	Leadership Climate	1 - 4	3.07	.74	-.23	-.12	.53	.49	(.83)		
6.	Depression & Anxiety	0 - 3	.69	.62	.39	.20	-.39	-.36	-.43	(.79)	
7.	Emotional Exhaustion	0 - 6	2.72	1.50	.55	.28	-.34	-.31	-.37	.69	(.85)

Note. All variable correlations are significant at the $p < .01$ level.

Measurement Models

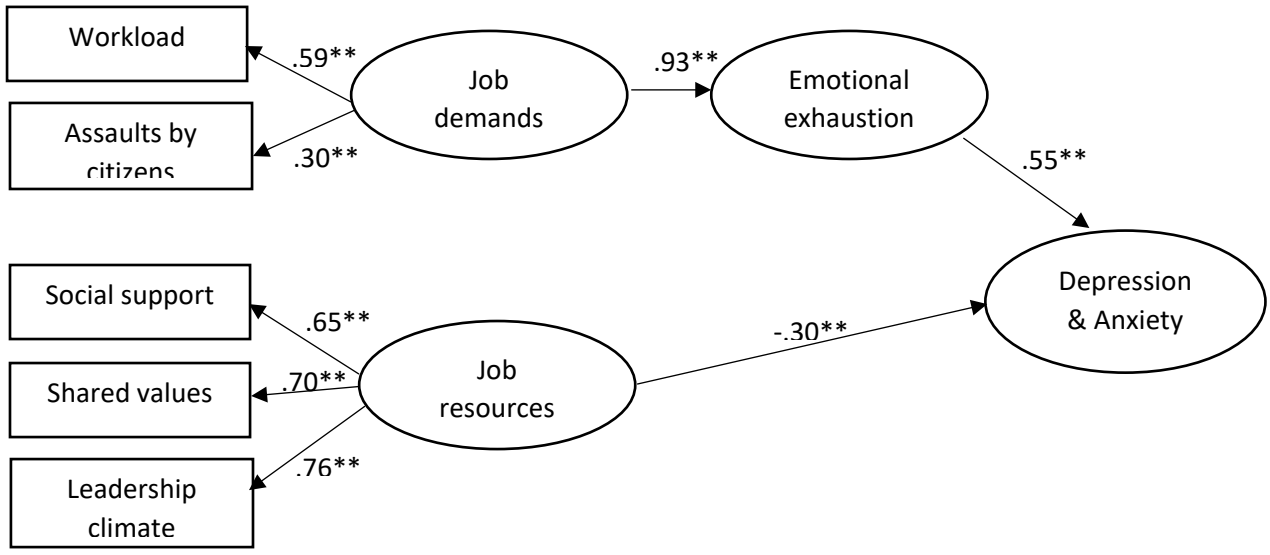
The analysis of the measurement model of the exogenous variables (job demands, job resources) showed that the model fits the data adequately (χ^2 [142, N = 843] = 218.074, $p <$ .001, CFI = .99, TLI = .99). The fit of the measurement model of the endogenous variables (emotional exhaustion, depression, and anxiety) was also acceptable (χ^2 [19, N = 843] = 135.971, $p < .001$, CFI = .95, TLI = .92). The factor loadings of the measurement model of the exogenous variables ranged between .56 and .97, while the range of the measurement model of the endogenous variables ranged between .63 and .87. The wide range of the factor loadings in the exogenous measurement model are a result of the versatility of the indicators that constitute the latent variables and reflect the diversity of specific job demands police officers face in their daily working routines.

Model Testing

The proposed model including the assumed relationships of Hypotheses 1 and 2 (see Fig.1) was tested with SEM-analyses, resulting in the following goodness-of-fit measures: χ^2 [315, N = 843] = 644.026, $p < .001$, RMSEA = .04, SRMR = .05, TLI = .96 and CFI = .97. The

χ^2 test of the model test was significant, however, since the χ^2 test is sensitive to sample size, this is common for large samples (Hu & Bentler, 1999). Overall, the fit statistics indicate a good fit of the hypothesized model to the data.

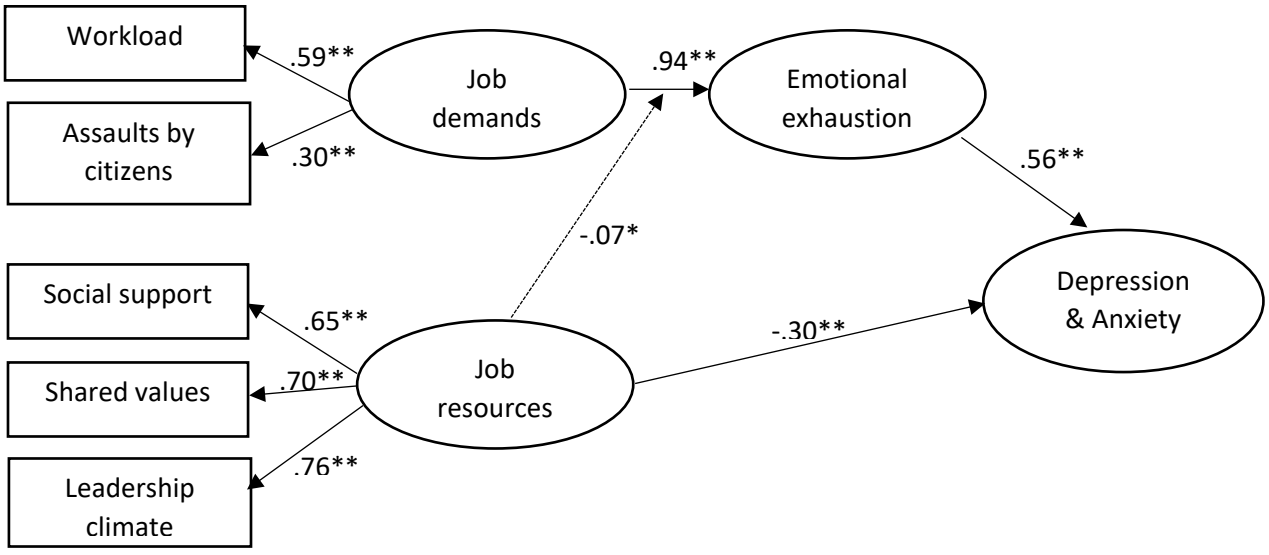
As can be seen in Figure 2, job demands are positively associated with emotional exhaustion (ß = .93, $p < .001$), which is in turn positively associated with depression and anxiety (ß = .55, $p < .001$). In addition, the positive indirect effect of job demands on depression and anxiety through emotional exhaustion was significant (ß = .51, p < .001). This indicates that the higher the job demands of the police officers, the higher their level of emotional exhaustion, and the higher their levels of depression and anxiety, confirming the health impairment path of the JD-R model (Hypothesis 1). In contrast, the coefficient of the path from job resources to depression and anxiety was negative (ß = -.30, $p < .001$), indicating that, in line with Hypothesis 2, the higher police officers perceive their job-related resources, the less depression and anxiety they experience.



* $p < .05$
** $p < .001$

Figure 2: Standardized solution for the hypothesized relationships of the JD-R model.

Finally, we tested Hypothesis 3 by including an interaction term of job demands and job resources in the structural model (see Fig. 3). The common goodness-of-fit measures (CFI and TLI) are not provided by Mplus when the model includes an interaction term. Thus, the comparison of the two models is obtained by the Akaike information criterion (AIC) and the z-test of the interaction, since the interaction term is the only parameter in which the two models differ. The AIC of the model with the interaction term is slightly smaller than in the basic model (see Table 3), indicating that it fits the data more adequately (Schreiber, Nora, Stage, Barlow, & King, 2006). Furthermore, the interaction term was significant ($p < .05$), confirming the hypothesis that job resources have a buffering effect on the relationship between job demands and emotional exhaustion. However, the coefficient of the path from the interaction term to emotional exhaustion was -.07, indicating a small effect.



* $p < .05$
** $p < .001$

Figure 3: Standardized solution for the hypothesized relationships of the JD-R model including the interaction term.

Table 3. *Fit statistics for the basic model and the interaction model*

	RMSEA	SRMR	TLI	CLI	AIC
Basic Model	.04	.05	.96	.97	58031.336
Interaction Model	-	-	-	-	58028.658

Note. AIC=Akaike information criterion; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual; TLI=Tucker Lewis Index.

In sum, the SEM-analyses confirmed central assumptions of the JD-R model and our hypotheses. Job demands, operationalized as workload and assaults by citizens, predicted emotional exhaustion, which in turn predicted depression and anxiety levels among police officers. Job resources, operationalized as social support by colleagues, shared values, and a positive leadership climate, were negatively associated with self-reported depression and anxiety levels and buffered the impact of job demands on emotional exhaustion, although this buffering effect was small.

Discussion

The aim of the present study was to investigate the association between job demands, job resources, and ill-mental health in the context of police work, taking the potential mediating role of emotional exhaustion as a key component of burnout into account. Furthermore, we tested whether job resources can buffer the negative effect of job demands on emotional exhaustion.

To examine the postulated relationships of police-specific job resources and demands with emotional exhaustion and ill-mental health, the JD-R model was tested with structural equation modeling. Earlier studies in the context of police work that focused on the influence of job demands and job resources on personal and organizational outcomes

had used the JD-R theory solely as a theoretical basis without explicitly testing the assumptions inherent to the model (Hall et al., 2010) or they tested only a single aspect of the JD-R model (Grawitch et al., 2010; Martinussen et al., 2007; Wu, 2009).

Overall, the results of the present study support the postulations of the JD-R model. It becomes evident that certain job demands and job resources influence the degree of emotional exhaustion that police officers experience and that there is a clear link between emotional exhaustion and psychological strain. First, the health impairment process of the JD-R model was confirmed. High job demands with regard to workload and assaults by citizens predicted the experience of emotional exhaustion among police officers, which in turn predicted levels of depression and anxiety. This is in line with earlier studies with police officers, which indicate that job demands are associated with emotional exhaustion (Grawitch et al., 2010; Hall et al., 2010; Martinussen et al., 2007; Wu, 2009). However, the studies used different indicators for job demands, ranging from overtime work (Martinussen et al., 2007) and role conflicts (Wu, 2009) to community socioeconomic status demands (Grawitch et al., 2010). None of the previous studies selected assaults by citizens as a demanding aspect of police work, although it is a relevant job demand with a clear link to the experience of emotional exhaustion in the present sample of police officers. This provides an important additional job demand that police officers are confronted with. Assaults by citizens should be included in future studies investigating the relationship between police-specific job demands and health-related and organizational outcomes.

A further important finding was that social support by colleagues, shared values, and positive leadership climate constitute job resources that were negatively associated with the experience of depression and anxiety among police officers. This is in line with the motivational process of the JD-R model, whereby it is assumed that job resources lead

to high work engagement, which in turn has a positive influence on important organizational outcomes, such as the employee's health condition (Bakker & Demerouti, 2007). Although the level of engagement was not assessed in the present study, the results support the assumption that job resources play an important role with regard to employees' health. Social support as a job resource was found to have beneficial effects on emotional exhaustion of police officers in earlier studies (e.g., Marchand & Durand, 2011; Martinussen et al., 2007). However, shared values and positive leadership climate were not included as job resources in previous research on police work. The present study identified these factors as important job resources and they should be included in future studies in order to see whether they function as influential job resources across different samples of police officers. Besides positive leadership climate as a job resource, evidence has emerged recently that leaders' own health behavior, awareness, and attitudes toward health influence the health-related self-care of employees in a positive way. Self- care of employees is in turn associated with better health outcomes and less irritation among employees (Franke, Felfe, & Pundt, 2014). Future research should thus also investigate to what extent police leaders influence their employees' health by their own health-related awareness, attitudes, and behaviors at work.

Furthermore, an important finding of the present study was that job resources buffered the effect of job demands on emotional exhaustion, indicating that the higher the police officers assess their job resources, the lower is the negative impact of job demands on emotional exhaustion. However, the effect was rather small and the buffering capabilities of job resources should not be overestimated. This finding is in line with the results of earlier studies showing that job resources buffer the relationship between job demands and the experience of emotional exhaustion albeit with small effect sizes of the interaction terms (Bakker et al., 2005; Bakker, Demerouti, Taris, Schaufeli, & Schreurs,

2003). Taking into account that effect sizes for interactions are generally small (Frazier, Tix, Barron, & Kenneth, 2004), it is apparent that job demands have a profound impact on the experience of emotional exhaustion and that the availability of job resources can only diminish this impact to a rather small degree.

Limitations and Future Directions

There are some limitations of the present study that should be noted. First, the data collected in the study are based on self-report measures, which may increase the problem of common method variance, causing an overestimation of the strength of the observed relationships. This issue may be resolved in future research by using objective rather than subjective measures of job characteristics. Second, the model was tested in a cross-sectional design, which does not allow causal inferences regarding the direction of the relationship between job characteristics and the experience of emotional exhaustion and psychological strain. However, earlier studies have provided an empirical validation of the processes postulated by the JD-R model using longitudinal study designs (Hakanen et al., 2008; Schaufeli, Bakker, & van Rhenen, 2009), which supports the hypothesized directions of the relationships between job demands, job resources, and the development of emotional exhaustion and psychological strain found in the present study. Third, even though we obtained a very good response rate (50.7%) in the health monitoring online survey, the risk remains that results may be biased by nonparticipation, if the refusal of participation was not randomly distributed. Studies focusing on response rate bias showed that responders are slightly healthier than nonresponders in large, population-based health surveys, but that the impact of these differences on prevalence rates is small, resulting in relatively unbiased results even for studies with only moderate response rates (Søgaard, Selmer, Bjertness, & Thelle, 2004; Vink et al., 2004). Finally, although we feel confident

that we selected job demands and job resources that are of central importance to the work of police officers, there may be further potential job demands and job resources of relevance in the context of police work that were not addressed in the present study. This comes at the cost of limited generalizability of the findings of this study to the whole field of policing or even to other work contexts. However, the fact that the JD-R theory allows the inclusion of different demands and resources can also be regarded as a strength, since it provides flexibility to investigate demands and resources that are specific to a certain work environment (Bakker & Demerouti, 2014). Taking both perspectives into account, it seems advisable that future research should combine the specific job demands and resources in the context of police work that were found to be related to burnout and psychological strain across different studies, in order to test a model that is more applicable to the whole occupational field of police work.

With regard to the applicability of the results to the field of police work, it should be noted that the data of the present study were obtained from a local police department in the center of Berlin, the capital of Germany. Although there appear to be similarities regarding job demands and resources of police officers across different states and countries, regional and cultural differences must be taken into account when applying the results to a wider context. Concerning regional aspects, it is likely that job demands differ in police departments located in smaller cities or rural areas. Rural areas with lower crime rates are likely to produce less strain due to high workload and assaults by citizens may also be less frequent in the daily working routine of the police officers. This is in line with the results of a study on occupational stress in a Scottish police force, indicating that officers working in rural areas reported lower levels of both organizational and operational stressors compared to urban officers (Biggam et al., 1997). Furthermore, cross-cultural differences may also emerge. While results of a study on job-related stressors in different

police environments indicate that there are several similarities, there is also evidence that sources of stress and the experience of stress can differ across European countries (Kirkcaldy, Brown, & Cooper, 1994). Cross-cultural differences may become even more relevant when comparing police work in Western to non-Western countries. For example, assaults by citizens may be less common in countries where the police force represents a greater authority for the public and the punishment for assaulting an officer is more severe. Taken together, the results of the present study appear to be applicable particularly to police work in metropolitan areas in a Western cultural context.

Practical Implications

The results of the present study provide valuable information for practical interventions with regard to job demands and job resources and their relationship with emotional exhaustion and psychological strain among police officers. First, the results of the present study stress the importance of working conditions for police officers' mental health. Specifically, high workload due to staff shortage was a clear source for psychological strain in the present sample of police officers, implicating the need for structural interventions, that is, hiring more staff. Considering both the costs for the health-care system and for the agencies with regard to nonproductive time due to mental illness, staff savings may produce even higher costs in the long run. The results of the present study provide further empirical evidence that supports the need to reduce workload and staff shortages in order to maintain health and working ability among police personnel.

With regard to interventions on an individual level, a systematic review of existing stress management interventions for police officers found only small effect sizes, suggesting that the interventions were not effective (Patterson, Chung, & Swan, 2014). The interventions included in the review ranged from stress management or stress

reduction programs to more specialized interventions such as stress inoculation training, brief psychotherapeutic interventions, or weight training. The authors concluded that future research is needed to develop effective interventions that address specific field work and organizational and personal stressors of police officers. In the present study, citizen assaults were found to be an important stressor, since it was associated with significant psychological strain. The experience of emotional dissonance is likely to play a crucial role for the subjective distress that police officers experience when they are insulted, verbally threatened, or abused by citizens. Emotional dissonance refers to the discrepancy between felt emotions and the display of emotions that is appropriate in a certain working context (Zapf, 2002). For example, police officers are expected to suppress emotions of anger or consternation when confronted with someone who is insulting or humiliating in order to obtain a neutral, controlled facial and physical expression. Emotional dissonance is associated with the experience of job burnout and impaired performance among police officers (Bakker & Heuven, 2006). Since citizen assaults appear to be inherent to the working routine of police officers on duty, they are unlikely to be reduced by image or educational campaigns directed at the public. A practical intervention on an individual level could train police officers in how to deal with citizen assaults by implementing strategies derived from cognitive behavioral therapy. A first step in such an intervention could be that police officers identify typical situations in which they experience high amounts of emotional dissonance and to reflect on attitudes, beliefs, and automatic thoughts that might intensify their incompatible emotions. It is likely that there are common situations in which most police officers experience emotional dissonance. However, other situations may be specific to individual officers, depending on job-related experiences and their biographical background. A next step could include a categorization of typical types of citizen encounters that elicit emotional dissonance to determine the corresponding emotions and to develop individual mental and

behavioral strategies that prepare police officers to deal with a given situation efficiently. For example, when confronted with an angry and agitated person during a traffic control, a police officer could reduce his or her experience of emotional dissonance by attributing the anger of the citizen to situational characteristics instead of taking it personally. Another strategy could consist of lessening the person's anger by making the cause for the traffic control transparent and by validating the person's emotional response while making personal boundaries as well as the legal framework perfectly clear.

Besides interventions targeting police-specific job demands, the study results also provide practical implications with regard to job resources. Since social support by colleagues, shared values, and a positive leadership climate were negatively associated with psychological strain, it seems advisable to strengthen these resources in order to reduce the likelihood that police officers develop a state of emotional exhaustion, depression, and anxiety symptoms. For example, social support by colleagues as well as the identification with shared values could be promoted by team supervision and team building activities on a regular basis. Social support provided by police supervisors also appeared to be an important resource with regard to the leadership climate in the department. The perceived social support by police supervisors could be increased by regular debriefings of stressful operations in order to identify potential psychological strain among police officers and to provide support for the affected staff member, if necessary. Beyond that, leadership could be explicitly addressed and utilized as a valuable resource with regard to organizational health by educating police leaders in the principles of health-oriented leadership and by promoting health-oriented awareness, attitudes, and behaviors among them. Since a total 22% of the police officers in the present sample showed elevated levels of depression and anxiety, a practical intervention could also focus on educating police supervisors on common symptoms of depression and anxiety disorder

and providing information about existing treatment options in order to identify psychological strain among officers at an early stage. This would potentially stimulate the provision of appropriate and effective support for affected persons. An intervention focusing on knowledge transfer regarding mental illness and conversational skills could be beneficial since supervisors are often unsure about when and how to address an employee's mental health and are also hesitant to discuss possible performance impairments involved. Since psychological strain and mental problems are common problems among police personnel, agencies are likely to benefit from providing police leaders with appropriate guidelines for dealing with mental health issues among their staff members.

Taken together, not only the reduction of strain-related job demands but also the promotion of job resources that are specific to the daily routines of police officers are likely to have a beneficial impact on police officers' health. Combining these two approaches and adapting them to actual working conditions in the police context could be a central strategy for promoting the health of police officers and for maintaining their working capacity long term.

Study 2

The Impact of Health-oriented Leadership on Police Officers' Physical Health, Burnout, Depression and Well-being

Chapter 3

The following paper was published in Policing: A Journal of Policy and Practice

Santa Maria, A., Wolter, C., Gusy, B., Kleiber, D., & Renneberg, B. (2019). The impact of health-oriented leadership on police officers' physical health, burnout, depression and well-being. *Policing: A Journal of Policy and Practice,* 13(2), 186-200. https://doi.org/10.1093/police/pay067

Abstract

The present study examines the impact of health-oriented leadership (HoL) on health outcomes of police officers. HoL refers to leaders' health-specific orientation towards followers and includes behavioral as well as motivational and cognitive aspects. We tested whether HoL has a direct effect on police officers' mental and physical health and whether this relationship is mediated by work-related health behaviors of the officers themselves. Data were collected at a large urban police department in Germany (N=811). Results indicate that HoL is negatively related to levels of burnout, depression and physical complaints among police officers and is positively related to their state of well-being. The relationship between leadership and well-being was partially mediated by the officers' own health-related behaviors, indicating that HoL also affects followers' well-being by promoting health-related self-care at work. The results emphasize the importance of leadership for follower health and provide valuable information for leadership development in the context of police work.

Key words: police, leadership, health-oriented leadership, burnout, depression, well-being, health problems

Introduction

In the field of policing leadership is primarily associated with outcomes like compliance, work effort or job performance of police officers (e.g., Breevaart, Bakker, Demerouti, & van den Heuvel, 2015; Hawkins & Dulewicz, 2009). However, reviews on leadership styles and employee health across different occupations show that leaders also play an important role with regard to health and well-being as well as to negative health outcomes like the experience of stress and burnout among employees (Kuoppala, Lamminpää, Liira, & Vainio, 2008; Montano, Reeske, Franke, & Hüffmeier, 2017; Skakon, Nielsen, Borg, & Guzman, 2010). Therefore, it is likely that leadership is not only important for the efficient functioning of police organizations and job performance but that it also affects the health of subordinate officers. Health promotion is of particular importance in the context of police work since the job of police officers is considered to be especially stressful and demanding (Liberman et al., 2002; Violanti et al., 2006). The job is characterized by various operational and organizational stressors like confrontation with violence, situations requiring the use of force and shift work (Biggam, Power, Macdonald, Carcary, & Moodie, 1997). Especially operational stressors related to difficult police-citizen encounters and confrontation with physical harm are job demands inherent to police work and can hardly be eliminated. Thus, the promotion of job resources that are associated with a reduction of stress and accompanying health problems are of central importance for maintaining police officers' performance and working capacities. Against this background, the present study examines to what extent a health-oriented leadership style can serve as a protective factor against job-related burnout, depression and physical complaints among subordinate police officers and whether it is positively associated with their state of well-being.

Police Leadership and Health Outcomes among Police Officers

Leadership is recognized as a key factor to shape the performance and outcomes of a police department. Traditionally, the predominant leadership style of law enforcement leaders can be considered as authoritarian, characterized by little consideration for the aims and concerns of subordinates in the decision-making process (Beito, 1999). Over the last decades, different leadership styles have been studied that go beyond this traditional autocratic approach, indicating that police officers respond best to leadership styles in which supervisors encourage open communication and participation of their officers (e.g., Sarver & Miller, 2014). However, research on the relationship between police leadership style and health outcomes of subordinate officers is still rare, providing only preliminary evidence of the potential leadership-health link in the context of police work to date. Results of a recent study indicated that a positive leadership climate was associated with reduced levels of emotional exhaustion among German officers and buffered the negative impact of high work effort on the experience of emotional exhaustion (Engel et al., 2018). A study on American police officers analyzed the relationship of stress and burnout among police officers and examined whether transformational leadership moderates this relationship (Russell, 2014). Transformational leadership refers to leadership behaviors that influence both values and aspirations of followers by activating higher-order needs and motivating followers to transcend self-interest for the benefit of the organization (Bass, 1999). Results indicated that police stress exacerbates perceived burnout while transformational leadership style attenuated this relationship. However, the decrease was weaker under highly stressful conditions. Transformational leadership was also found to be related to increased psychosocial well-being of police officers in a recent study by Can, Hendy, & Can (2017). Police officers perceiving their immediate supervisor's leadership behavior as transformative reported higher degrees of well-being, indicated by better self-esteem, more perceived social support at work, and less romantic partner conflict. A further study did not

focus on a specific leadership style but examined whether social support of supervisors and colleagues influenced the experience of work stress, emotional exhaustion and spillover of work stress to the family environment of policewomen in the Australian state police (Thompson, Kirk, & Brown, 2005). Results indicated that supervisor, but not coworker support reduced work stress which had a significant impact on family cohesion and family conflicts through emotional exhaustion. The authors concluded that social support of police supervisors plays a critical role in reducing negative effects of work stress on policewomen's' mental health and family life. Finally, a study on the effectiveness of police leadership examined the impact of leadership on positive psychological outcomes of subordinates (Dobby, Anscombe, & Tuffin, 2004). Results showed a strong relationship between leaders showing genuine concern for others' well-being and positive psychological outcomes among subordinates, such as increased self-confidence, a sense of fulfillment for the job and their self-esteem. Taken together, there is preliminary evidence that leadership influences health outcomes of police officers.

Health-oriented Leadership

In contrast to the field of policing, the relationship between leadership behavior and health outcomes of employees is widely studied across other occupational groups. The majority of the studies focusing on leader behavior and follower health applied the concept of transformational leadership (Skakon et al., 2010). However, since transformational leadership is a measure of general leadership behavior, it may be too vague with regard to explicit health-related actions of leaders (Franke & Felfe, 2011). Moreover, most of the studies examine the influence of leaders' behaviors towards followers without taking motivational or cognitive aspects of leadership into account. To address this issue, the concept of "Health-oriented Leadership" (HoL) was developed by Franke, Felfe, and Pundt (2014). The HoL concept provides a broader model of an explicit health-specific leadership style that also attends to the leaders' values and awareness towards follower health besides relevant behavioral aspects of

leadership. A central aspect of HoL is *staff-care,* defined as a leadership style that provides followers with health-promoting working conditions and support that are protective of their health. Moreover, the HoL concept also addresses how followers care for their own health in the working context (*self-care*), assigning followers an active role in the leadership-health link. Health-oriented leadership (*staff-care*) and work-related health behavior of followers (*self-care*) comprise three specific dimensions respectively: health behavior, health awareness and value of health. With regard to leadership, *health behavior* refers to engaging in health-relevant activities that promote the health of followers. Follower-directed health behaviors of leaders include creating healthy working conditions, providing information on health and safety issues and enabling and encouraging followers to engage in healthy behavior at work. *Health awareness* refers to the attention and sensitivity of leaders to health and the conditions related to strain among employees at the workplace. A leader with a high awareness for health issues is more likely to properly evaluate followers' stress levels and to recognize signs of strain among followers at an early stage. *Value of health* includes the leaders' interest in health-related topics in the work context and the importance leaders attribute to health in general. Practically, it refers to the leaders' sense of responsibility for employee health and their concerns about health issues in the daily work routine of their staff members. According to Franke et al. (2014), all three dimensions (health behavior, health awareness, value of health) are relevant for effective health-oriented leadership and should ideally be fulfilled by leaders. The respective dimensions are also considered important for followers' *self-care* by the authors. However, especially the behavioral aspect of *self-care* was found to be important for employee health. Work-related health behaviors of employees include reducing work stress by optimizing one's working methods or the active promotion of a healthy work-life balance. While there was a clear link between these health *behaviors* of employees and their state of health in a validation study of the instrument (Franke et al., 2014), the relationships between health outcomes and their health *awareness* and *value of health* were weaker.

A major advantage of the health-oriented leadership concept is that it results in concrete and health-specific practical indications for the promotion of follower health. Its principles were empirically tested in a longitudinal study by Franke et al. (2014). Results indicated that health-oriented leadership (*staff-care*) was positively related to follower health four months later and negatively related to irritation, health complaints and work-family conflicts. Importantly, *staff-care* explained unique variance in the health outcomes beyond transformational leadership, which had been assessed as well in the study. Moreover, the relationship between s*taff-care* and health outcomes was mediated by the followers' own health behavior at work (s*elf-care)*. Thus, followers who perceived the leadership style of their direct supervisor as health-oriented showed higher levels of *self-care* at work which were subsequently associated with better health outcomes and fewer health complaints.

The present study applied the concept of health-oriented leadership in the context of police work and examined its impact on levels of burnout, depression, physical complaints and well-being among subordinate police officers. Burnout refers to a state of exhaustion in which one is cynical about the value of one's work accompanied by feelings of ineffectiveness (Maslach, Schaufeli, & Leiter, 2001). It typically occurs in response to high work demands and chronic work-related stress. Studies on potential links between the experience of burnout and job-related behaviors of police officers indicate that police officers with high levels of burnout show a more positive attitude towards violence and a more frequent use of violence (Kop, Euwema & Schaufeli, 1999). Moreover, on an organizational level, burnout mediates the relationship between job demands and counterproductive work behaviors of police officers (Smoktunowicz et al., 2015) and is associated with job dissatisfaction as well as desires to leave the job (Pines & Keinan, 2005). Depression is a closely related health problem associated with psychosocial work stressors in working populations today (Bonde, 2008). It is characterized by feeling sad, hopeless or empty over at least two weeks and is accompanied by diminished

interest in almost all activities and loss of energy (American Psychiatric Association, 2013). Suffering from depression is associated with absences and at-work performance deficits (Lerner & Henke, 2008). Furthermore, depressive symptoms among police officers were found to increase the risk of developing metabolic syndromes (Hartley et al., 2012). With regard to physical complaints, police officers are prone to musculoskeletal problems like neck or back pain due to the high physical demands they face in their job. Research indicates that these health complaints among police officers are related to daily working routines like spending most of the day driving in the car (Gyi & Porter, 1998) as well as to exposure to traumatic incidents and disasters (Huizink et al., 2006). However, high levels of musculoskeletal problems among police officers are also associated with job pressure and lack of social support (Berg, Hem, Lau, & Ekeberg, 2006). In order to consider also a positive dimension of mental health, we included well-being in the present study as an additional health outcome. Police officers' well-being was found to be positively related to social support by supervisors and colleagues (Hu, Schaufeli, & Taris, 2016; Van den Broeck, Cuyper, Witte, & Vansteenkiste, 2010) and is associated with higher levels of job satisfaction, work engagement and affective commitment to the organization (Brunetto, Teo, Shacklock, & Farr-Wharton, 2012).

Taken together, health promotion is of particular importance in the context of police work, since the job of police officers is highly demanding and results of previous studies have shown that burnout, depression and physical complaints are associated with serious consequences for officers and the functioning of police organizations as a whole. Leadership may be an important resource for reducing burnout and depression levels and promoting physical health and well-being among police officers. However, previous research has yielded only inconclusive evidence on this topic in the context of policing and to date no study has directly examined the impact of a health-specific leadership approach on officers' health and well-being. The aim of the present study was thus to examine the link between police leaders

applying a health-oriented leadership style and relevant health outcomes of subordinate officers. We hypothesized that a health-oriented leadership style is negatively related to levels of burnout, depression and physical complaints and positively related to the officers' well-being (see Fig. 1). Furthermore, we expected that these relationships are mediated by health-related behaviors of the officers themselves (*self-care*), indicating that health-oriented leadership promotes the *self-care* of officers which is beneficial for their mental and physical health in turn. All three dimensions (awareness, values, behavior) were considered with regard to leadership (*staff-care*) in the present study. With regard to the officers' own work-related health behavior (*self-care)* we focused solely on the behavioral component in the present study since previous results have indicated that health-related behavior of followers is most strongly associated with relevant health outcomes (Franke et al., 2014).

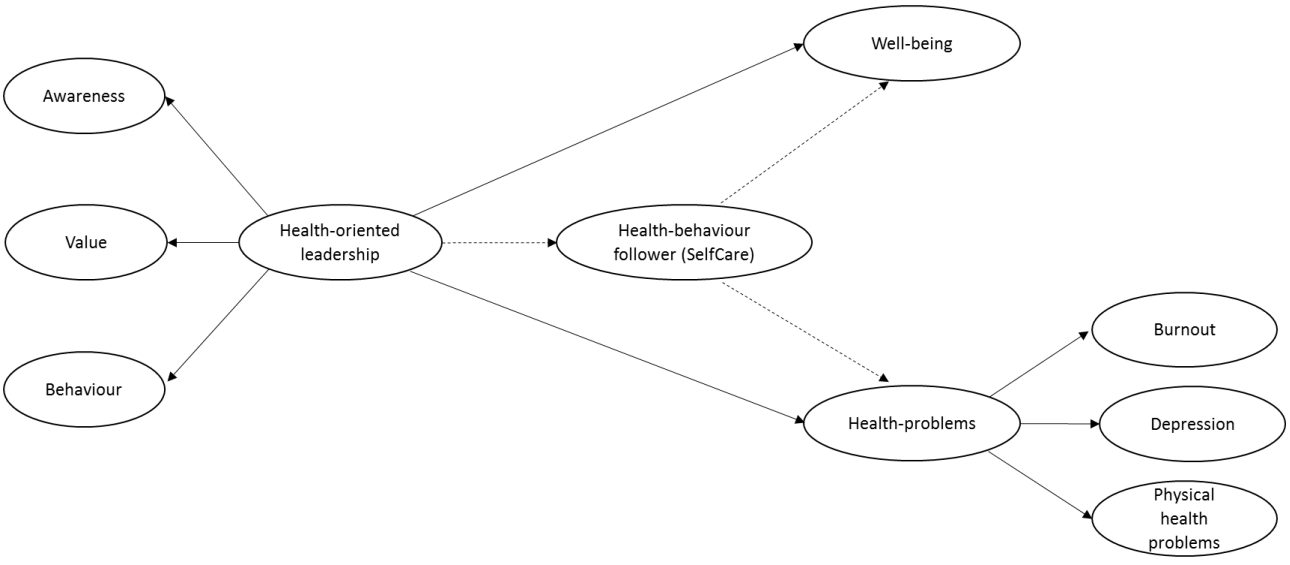


Figure 1. Model including the hypothesized relationships between health-oriented leadership, health behavior of followers and health outcomes.

Method

Participants and Procedure

Data of the present study were collected in a large urban police department in Germany via an online survey. The department had 1,462 members at that time and was part of a larger agency comprising six departments with approximately 23,550 employees. The police officers of the department received an invitation to participate in the survey via their working e-mail address. Police officers out of the office due to temporary or permanent inability to work were sent a paper pencil version of the questionnaire to their home addresses. Participants were informed that participation was voluntary and anonymous and that data were kept confidential at all stages of the study. Of the 1,462 members of the department, 811 police officers completed the online survey, resulting in a response rate of 51%. Of the sample, 72% (n = 587) were male and 28% were female (n = 224), which reflected the gender distribution of the department at that time. The mean age of the sample was 44.9 years (SD = 9.0). The participating officers had been in the police force for 1 up to 44 years with an average of 24 years of service (SD = 9.7). The study design was approved by the ethics committee of Freie Universität Berlin as well as by the personnel board of the police department.

Measures

Health-oriented leadership was measured by the *staff-care* scale of the health-oriented leadership questionnaire (Franke et al., 2014). Police officers assessed the extent to which their direct supervisors engaged in a health-specific leadership style on a 5-point rating scale ranging from *not at all true* (1) to *completely true* (5). *Staff-care* was measured by 15 items: 5 items covered *health awareness* (e.g., "My supervisor notices when I need a break"), 3 items *value of health* (e.g., "My supervisor feels responsible to take care/preserve of my health"), and 7 items *health behavior* (e.g., "My supervisor invites me to inform him/her about health risks at my workplace"). A study on the psychometric properties of the questionnaire provided support

for the internal consistency, construct validity and factorial validity of the instrument (Franke et al., 2014). In the present study, Cronbach's alpha for the three components of s*taff-care* ranged between .90 and .93.

Work-related health behavior of the subordinate police officers was assessed by the *self-care behavior* subscale of the health-oriented leadership questionnaire (Franke et al., 2014). Respondents rated their own health-related behavior in the working context on a 5-point scale from *not at all true* (1) to *completely true* (5) by means of 4 items (e.g., "I try to reduce my demands by optimizing my personal work-life balance, e.g., take regular breaks, avoid overtime"). The internal consistency of the behavior subscale of *self-care* was acceptable (α = .78).

Physical complaints captured police officers' musculoskeletal problems and were assessed by three items of the health subscale of the German version of the Salutogenetic Subjective Work Analysis Inventory (Rimann & Udris, 1997). Respondents were asked to rate how often they experienced musculoskeletal pain over the last 12 months (e.g., "Have you experienced back pain?", "Have you experienced pain in your shoulders or in your neck") on a 6-point frequency scale from *almost never* (0) to *permanently* (5). Cronbach's alpha was .75 in the present study**.**

Burnout was measured by the German version (Hanebuth, Aydin, & Scherf, 2012) of the work-related burnout subscale of the Copenhagen Burnout Inventory (CBI) by Kristensen, Borritz, Villadsen, and Christensen (2005). The subscale consists of 7 items assessing the experience of job-related burnout. Example items are "Do you feel burned out because of your work?" or "Are you exhausted in the morning at the thought of another day at work?" The possible scores for the scale ranged from 0 (*never*) to 100 (*always*). The work-related burnout scale of the CBI was shown to have very satisfactory reliability and validity (Kristensen et al., 2005). The internal consistency in the present study was good (α = .87).

Depression was assessed by the Patient Health Questionnaire-2 (PHQ-2), an ultra-brief self-report questionnaire that consists of a 2-item depression scale (Kroenke, Spitzer, & Williams, 2003). The PHQ-2 is an efficient screening tool for identifying individuals who may be suffering from depression. The participants were asked: "Over the last two weeks, how often have you been bothered by the following problems?" The PHQ-2 includes the two core criteria for depressive disorders, assessed by the following two items: "Feeling down, depressed or hopeless" and "Little interest or pleasure in doing things". Response options were *not at all* (0), *several days* (1), *more than half the days* (2) and *nearly every day* (3). The total scores of the PHQ-2 range from 0 to 6, with scores > 3 identifying individuals with potential depressive symptoms. A study on the psychometric properties of the PHQ-2 revealed good internal reliability, construct validity and factorial validity of the instrument (Löwe, Kroenke & Gräfe, 2005). In the present study the internal consistency of the PHQ-2 was acceptable ($\alpha = .76$).

Well-being was assessed by the German version of the WHO-5 well-being index (Brähler, Mühlan, Albani, & Schmidt, 2007) comprising five items. The respondents rated their levels of psychological well-being over the last two weeks on a 6-point scale ranging from 0 (*not present*) to 5 (*constantly present*). A typical item was "In the last two weeks I felt cheerful and in good spirits." The WHO-5 well-being index is a widely used instrument with high validity both as a screening tool for depression and as an outcome measure of well-being in clinical trials (Topp, Østergaard, Søndergaard & Bech, 2015). In the present study Cronbach's alpha for the well-being scale was .78.

Data Analysis

Descriptive statistics (means, standard deviations) of the study variables and reliability measures were obtained using SPSS 24. We conducted structural equation modeling (SEM) in order to test the hypotheses, using Mplus version 7.4 (Muthén & Muthén, 2014). The fit of the

model to the data was assessed by the Chi-Square goodness-of-fit statistic, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), the Tucker Lewis Index (TLI) and Standardized Root Mean Square Residual (SRMR), as recommended by Schermelleh-Engel, Moosbrugger and Müller (2003). For the RMSEA a cutoff value close to .06, for the CFI and the TLI a cutoff value close to .95 and for the SRMR a cutoff value close to .08 indicate that the hypothesized model fits the data well (Hu & Bentler, 1999). The measurement model of the variables was specified and tested before the full structural model was tested (Herting & Costner, 2000). In order to test the hypotheses, a model with health-oriented leadership as an exogenous variable and health problems (operationalized by burnout, depression and physical health complaints) and well-being as endogenous variables was specified (see Fig. 1). In order to test the potential mediating role of health-related behaviors of subordinate police officers (*self-care*), it was included in the model by means of an indirect path between leadership and each of the outcome variables (health problems and well-being). For all model estimations Robust Maximum Likelihood (MLR) estimation was used.

Results

Descriptive Statistics

In Table 1 the correlation matrix of the study items is provided. Descriptive statistics including means, standard deviations, intercorrelations and reliability coefficients (Cronbach's alpha) of the variables are presented in Table 2. Cronbach's alpha of the variables varied between .75 and .93, indicating good reliability for all the scales included in the study. Furthermore, all correlations between the variables were significant at the $p < .05$ level.

Tables

Table 1. *Correlations between the study items*

	Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.	stc01																		
2.	stc02	.79																	
3.	stc03	.82	.80																
4.	stc04	.61	.66	.68															
5.	stc05	.70	.78	.78	.67														
6.	stc06	.56	.59	.59	.49	.60													
7.	stc07	.55	.63	.62	.53	.62	.75												
8.	stc08	.50	.63	.64	.51	.65	.70	.80											
9.	stc09	.49	.52	.54	.46	.55	.55	.65	.66										
10.	stc10	.38	.43	.43	.35	.46	.43	.51	.48	.59									
11.	stc11	.50	.57	.57	.45	.57	.56	.66	.68	.65	.72								
12.	stc12	.49	.58	.58	.50	.59	.56	.64	.62	.58	.52	.65							
13.	stc13	.50	.54	.54	.46	.58	.47	.56	.58	.56	.53	.62	.72						
14.	stc14	.49	.55	.55	.42	.54	.54	.62	.58	.50	.42	.56	.69	.60					
15.	stc15	.55	.56	.56	.48	.55	.60	.64	.62	.55	.49	.59	.63	.53	.63				
16.	sec01	-.06	.13	.13	.11	.10	.03	.11	.10	.09	.08	.10	.12	.12	.12	.08			
17.	sec02	.08	.12	.12	.13	.12	.08	.14	.10	.13	.11	.14	.11	.16	.14	.09	.68		
18.	sec03	.07	.09	.09	.10	.07	.04	.11	.08	.06	.06	.09	.11	.11	.15	.07	.49	.49	
19.	sec04	.17	.20	.20	.19	.17	.20	.20	.18	.21	.14	15	.19	.14	.16	.16	.37	.41	.40
20.	cbi01	-.21	-.24	-.24	-.12	-.21	-.19	-.23	-.20	-.17	-.18	-.23	-.23	-.19	-.24	-.18	-.07	-.06	-.16
21.	cbi02	-.20	-.27	-.27	-.16	-.24	-.27	-.26	-.24	-.24	-.19	-.24	-.24	-.18	-.23	-.24	-.07	-.03	-.09
22.	cbi03	-.18	-.23	-.22	-.13	-.21	-.25	-.27	-.25	-.20	-.16	-.22	-.23	-.18	-.24	-.24	-.08	-.04	-.12
23.	cbi04	-.11	-.16	-.16	-.10	-.15	-.16	-.20	-.17	-.13	-.09	-.13	-.14	-.12	-.17	-.13	-.13	-.09	-.21
24.	cbi05	-.14	-.16	-.17	-.09	-.14	-.18	-.23	-.18	-.15	-.14	-.20	-.21	-.17	-.25	-.20	-.07	-.05	-.10
25.	cbi06	-.20	-.22	-.02	-.13	-.22	-.27	-.30	-.24	-.23	-.20	-.25	-.25	-.21	-.28	-.27	-.01	-.05	-.04
26.	cbi07	-.22	-.26	-.26	-.13	-.24	-.29	-.32	-.26	-.22	-.20	-.26	-.26	-.19	-.31	-.28	-.07	-.08	-.13
27.	phy01	-.13	-.14	-.15	-.10	-.14	-.17	-.15	-.15	-.15	-.13	-.15	-.14	-.11	-.16	-.16	.00	-.02	-.05
28.	phy02	-.14	-.16	-.18	-.15	-.15	-.19	-.19	-.12	-.11	-.11	-.15	-.19	-.19	-.15	-.17	-.07	-.07	-.13
29.	phy03	-.06	-.09	-.10	-.06	-.08	.-12	-.09	-.12	-.10	-.05	-.13	-.11	-.0.1	-.13	-.10	-.08	-.03	-.13
30.	who01	.12	.19	.19	16	.17	.22	.22	.18	.20	.16	17	.21	.14	.20	.20	.06	.03	.11
31.	who02	.12	.17	.16	09	.15	.16	.21	.16	.18	.14	16	.17	.13	.19	.19	.10	.10	.17
32.	who03	.14	.20	.20	14	.18	.20	.20	.17	.20	.20	20	.21	.19	.24	.21	.08	.10	.15
33.	who04	.15	.20	.20	16	.20	.15	.17	.17	.17	.18	22	.19	.18	.21	.16	.11	.13	.20
34.	who05	.13	-.19	.19	14	.18	.21	.23	.19	.19	.16	20	.21	.16	.22	.21	.06	.04	.10
35.	phq01	-.14	-.18	-.18	-.10	-.17	-.24	-.26	-.22	-.20	-.20	-.21	-.24	-.19	-.26	-.21	-.02	-.01	-.03
36.	phq02	-.11	-.14	-.14	-.14	-.13	-.19	-.18	-.15	-.14	-.14	-.15	-.12	-.07	-.17	-.16	-.08	-.05	-.09

	Item	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1.	stc01																		
2.	stc02																		
3.	stc03																		
4.	stc04																		
5.	stc05																		
6.	stc06																		
7.	stc07																		
8.	stc08																		
9.	stc09																		
10.	stc10																		
11.	stc11																		
12.	stc12																		
13.	stc13																		
14.	stc14																		
15.	stc15																		
16.	sec01																		
17.	sec02																		
18.	sec03																		
19.	sec04																		
20.	cbi01	-.20																	
21.	cbi02	-.15	.61																
22.	cbi03	-.14	.55	.71															
23.	cbi04	-.20	.47	.48	.50														
24.	cbi05	-.11	.52	.48	.45	.33													
25.	cbi06	-.14	.42	.54	.51	.29	.50												
26.	cbi07	-.19	.65	.65	.62	.50	.58	.64											
27.	phy01	-.07	.28	.33	.27	.21	.19	.25	.32										
28.	phy02	-.09	.35	.35	.33	.25	.26	.24	.37	.61									
29.	phy03	-.07	.30	.34	.30	.25	.20	.21	.32	.44	.44								
30.	who01	.14	-.35	-.46	-.47	-.40	-.34	-.41	-.47	-.22	-.29	-.25							
31.	who02	.13	-.47	-.48	-.47	-.46	-.39	-.37	-.502	-.26	-.34	-.25	.63						
32.	who03	.16	-.46	-.51	-.49	-.45	-.37	-.39	-.50	-.28	-.36	-.31	.69	.74					
33.	who04	.18	-.47	-.46	-.42	-.43	-.34	-.31	-.47	-.29	-.34	-.29	.54	.69	.73	.			
34.	who05	.13	-.33	-.39	-.38	-.37	-.29	-.39	-.43	-.23	-.27	-.20	.64	.55	.64	53			
35.	phq01	-.02	.35	.43	.45	.32	.37	.49	.49	.24	.28	.21	-.49	-.43	-.46	-.35	-.49		
36.	phq02	-.13	.38	.49	.47	.37	.35	.43	.51	.28	.29	.30	-.49	-.43	-.43	-.37	.38	.51	

Note: stc= StaffCare, sec= SelfCare, cbi= Copenhagen Burnout Inventory: work-related burnout, phy= physical health complaints, who= wellbeing, phq= depression; N = 811; all item correlations are significant (p < .01).

Table 2. *Means, standard deviations, internal consistencies (Cronbach's Alpha), and correlations between the study variables*

	Variable	Range	M	SD	1	2	3	4	5	6	7	8.
1.	StaffCare-awareness	1 - 5	2.10	.96	(.93)							
2.	StaffCare-value	1 - 5	2.54	1.10	.71	(.90)						
3.	StaffCare-behavior	1 - 5	2.23	.92	.65	.73	(.90)					
4.	SelfCare-behavior	1 - 5	3.28	.92	.15	.14	.17	(.78)				
5.	Wellbeing	0 - 5	2.31	1.15	.21	.26	.29	.17	(.78)			
6.	Burnout	0-100	47.50	19.20	-.28	-.38	-.33	-.16	-.64	(.87)		
7.	Depression	0 - 3	.70	.67	-.15	-.28	-.24	-.10	-.59	.62	(.76)	
8.	Phy. health problems	0 - 5	1.96	1.24	-.17	-.23	-.21	-.10	-.41	.44	.37	(.75)

Note. All variable correlations are significant at the $p < .05$ level.

Measurement Models

The measurement model of the exogenous (health-oriented leadership) and endogenous variables (work-related health behavior, health problems, well-being) showed that the model fits the data adequately (χ^2 [576, N = 811] = 1495.187, $p < .001$, CFI = .94, TLI = .94).

Model Testing

The model depicting the hypotheses (see Fig.1) was tested by means of an SEM-analysis, resulting in the following goodness-of-fit measures: χ^2 [582, N = 811] = 1504.298, $p < .001$, RMSEA = .04, SRMR = .04, CFI = .94 and TLI = .94. With regard to the χ^2 test of the model reaching statistical significance it must be noted that this is common for large samples, since the χ^2 test is sensitive to sample size (Hu & Bentler, 1999). Overall, the fit statistics indicate that the hypothesized model fits the data well. However, the link between *self-care* and health problems was not confirmed since the path between the two variables was not significant (ß = -.06, p = .204). Thus, an adjusted model without the path from *self-care* to health problems

was specified and tested. Results indicated no improvement of the model fit of the adjusted model compared to the original model. The fit indices and the path coefficients were essentially the same, indicating still a good fit of the model to the data (χ^2 [583, N = 811] = 1505.689, p < .001, RMSEA = .04, SRMR = .04, CFI = .94 and TLI = .94).

In line with our hypotheses, health-oriented leadership was negatively related to health problems (ß = -.42, p < .001), operationalized by burnout, depression and physical complaints (see Fig. 2), whereas it was positively related to officers' well-being (ß = .28, p < .001). In addition, health-oriented leadership was positively related to police officers' *self-care* (ß = .21, p < .001), indicating that a health-oriented leadership style stimulates the self-directed health behaviors of subordinate officers. *Self-care* in turn was associated with higher levels of well-being among the officers (ß = .07, p < .05), though the relationship was rather weak. The hypothesized mediating role of followers' health behavior in the leadership-health link was solely confirmed with regard to officers' well-being, indicated by a significant total indirect effect from health-oriented leadership to well-being via *self-care* (ß = .02, p < .05). The indirect effect from health-oriented leadership to health problems via *self-care* could not be tested, since the path from *self-care* to health problems failed to reach significance in the original model and was removed in the adjusted model.

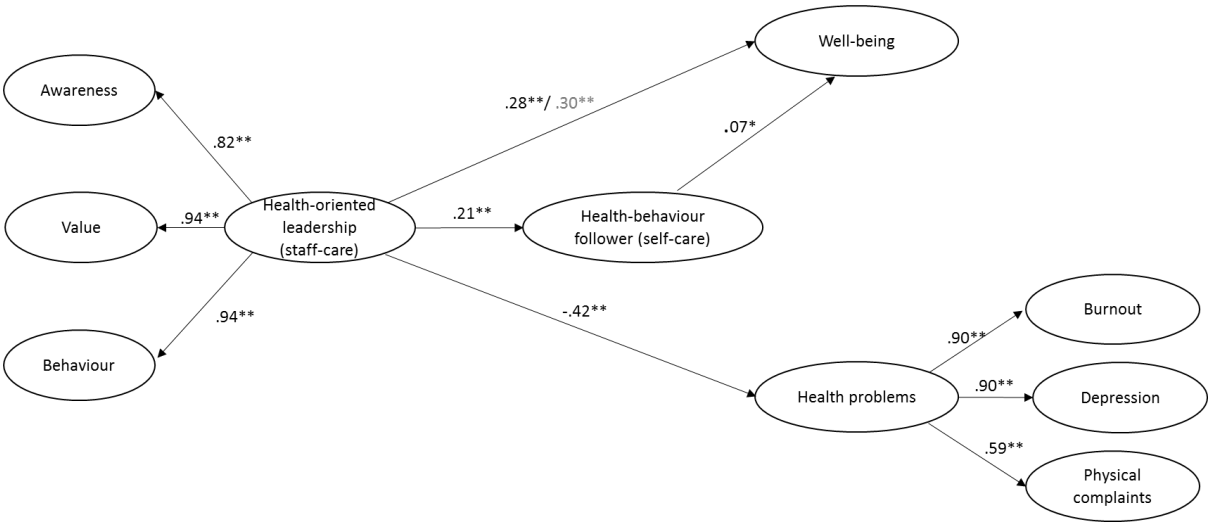


Figure 2. Standardized solution for the hypothesized relationships of the adjusted model without the non-significant path from *Health-behavior follower* (*self-care)* to *health problems* (Note: the path coefficient from *health-oriented leadership* to *well-being* without the mediation effect is depicted in light gray).

* $p < .05$
** $p < .001$

In sum, the SEM-analyses confirmed our central assumptions regarding the role of health-oriented leadership for follower health. Health-oriented leadership was related to higher degrees of well-being among the officers and to lower levels of mental and physical health complaints. Furthermore, a pronounced health-oriented focus of police leaders stimulated the health behaviors of subordinate officers in the department, which were in turn positively related to their well-being. However, the hypothesized link between officers' health behaviors (*self-care*) and their levels of burnout, depression and physical complaints was not confirmed in the present study. This points to the prominent role of leadership for the prevention of health problems in the context of police work.

Discussion

The aim of the present study was to examine the relationship between health-oriented leadership of police supervisors and health outcomes of subordinate officers. In addition, the

police officers' active role was addressed by investigating the influence of their own health behavior at work in this process.

The results indicated that a health-oriented leadership style was associated with improved well-being and lower levels of burnout, depression and physical complaints among the subordinate police officers. This finding highlights the importance of leadership for follower health in the context of police work. Previous studies on police leadership have provided preliminary evidence for the leadership-health link (e.g., Can et al., 2017; Russell, 2014). However, these studies focused on single mental health aspects like burnout or well-being while physical health complaints were not considered as outcome variables. Because of the physically demanding nature of police work, physical health aspects should be addressed when examining the impact of certain leadership styles on officers' health.

Moreover, previous studies have applied general leadership theories like transformational leadership (e.g., Russell, 2014) in order to examine leaders' impact on follower health, yielding no specific information on health-related aspects of leadership. It seems to be of high relevance to consider health-specific aspects of leadership, since previous research has shown that the effect of transformational leadership on follower health was fully mediated by health-oriented leadership (Franke et al., 2014). This means that the link between transformational leadership and health became non-significant once health-oriented leadership was added to the analyses, indicating that it captures the health-related aspects of transformational leadership.

Furthermore, the results of the present study show that besides health-specific leadership behavior, the awareness and value police supervisors attach to the health of their staff members also play a critical role for mental and physical health of the subordinate officers. Existing studies in the field of policing focused solely on behavioral aspects of leadership, without considering motivational and cognitive factors that are potentially relevant in the complex

leadership-health relationship. If subordinate police officers perceive that their supervisors care about their health by assigning importance to health issues at the workplace (value of health) and recognize their staff's stress and health troubles (health awareness), officers may feel better taken care of and taken more seriously. Our findings suggest that those feelings of value and awareness may have a positive effect on police officers' mental and physical health beyond the health-promoting behaviors of leaders themselves. Taken together, all three components of the applied health-oriented leadership approach in the present study seem to be important for a leadership style that promotes mental and physical health among police officers.

A further important finding is the positive relationship between health-oriented leadership and work-related health behavior (*self-care*) of subordinate police officers. Thus, leaders that employ a health-oriented leadership style promote self-directed health behaviors of their staff members that are in turn associated with higher levels of well-being. This supports the assumption that health behaviors of followers should be considered when studying the impact of leadership on well-being and that they have a mediating role in this process. An important implication of this finding is that police leaders do not solely affect officer health and well-being by creating favorable work conditions like previous studies suggest (e.g., Arnold, Turner, Barling, Kelloway, & McKee, 2007; Nielsen, Randall, Yarker, & Brenner, 2008) but also by influencing officers' own health-related behaviors. However, it is important to note that the relationships of the indirect path via officers' self-care were considerably smaller than the direct leadership-well-being link. Furthermore, there was no significant relationship between work-related self-care of subordinate officers and their levels of physical complaints, burnout and depression in the present sample, whereas there was a clear link between health-oriented leadership and the respective mental and physical health complaints. Thus, creating a health-promoting work environment through their style of leadership lies still within the responsibility of police supervisors and is of undeniable importance.

Limitations and Future Directions

Despite the promising results of the present study, there are some limitations that should be noted. First, the hypotheses were tested in a cross-sectional study design, which does not allow causal inferences regarding the direction of the relationship between leadership behavior and follower health. For example, reverse causation and followers' influence on leaders cannot be ruled out given the cross-sectional nature of the data. However, a previous study has provided empirical validation of the leadership-health process using a longitudinal study design (Franke et al., 2014), which supports the hypothesized directions of the relationships between health oriented leadership and follower health found in the present study. Nevertheless, future studies should use a comprehensive longitudinal research design in order to test the hypothesized causal influence of leadership on employee health. Second, all data collected in the present study are based on self-report measures. This may increase the risk of common method variance, causing an overestimation of the strength of the observed relationships. Thus, future studies should resolve this potential problem by using objective rather than solely subjective measures of leadership behavior and follower health. Third, even though we obtained a very good overall response rate (51%), results may be biased by nonparticipation. That might well be so, if the refusal of participation was not randomly distributed in the present study. For example, previous studies focusing on response rate bias have shown that responders are slightly healthier than non-responders in large population based health surveys (Søgaard, Selmer, Bjertness, & Thelle, 2004; Vink et al., 2004). However, the results of the studies also indicate that the impact of these differences on prevalence rates is rather small, resulting in relatively unbiased results even for studies with only moderate response rates. Given the good response rate obtained in the present study, it is thus reasonable to assume that our results are not significantly biased by nonparticipation.

Practical Implications

The results of the present study provide valuable information for leadership development and health promotion interventions in policing. First, the results of the present study stress the importance of leadership as a valuable resource for the promotion of health and well-being among police officers. A health-specific leadership style that goes beyond the principles of transformational leadership is likely to be an important factor for the creation of a health-promoting work environment for police officers. Thus, our findings suggest that during leadership development police leaders should be sensitized that a health-oriented leadership style exerts a positive influence on the mental and physical health of subordinate officers directly and also indirectly by motivating them to engage in health-related behaviors at work. Besides educating police leaders about the leadership-health link, it is most likely also beneficial to practically coach them the principles of a health-oriented leadership approach. A leadership training program on health-orientated leadership could address the sensitization of police supervisors for follower health by motivating them to show interest and awareness for the mental and physical condition of their staff members in the first place. Secondly, a training to adequately recognize stress symptoms among subordinate officers at an early stage could be applied. In a further step, police supervisors could be educated in specific leadership behaviors that are associated with positive health outcomes of followers (e.g., informing officers about safety regulations and health trainings provided by the agency; ensuring that officers comply with break times and working hours; reducing job-related strain by setting clear priorities, making critical decisions transparent and by avoiding repetitive physical strain among subordinates whenever possible). Besides demonstrating the importance of the active health-oriented leadership behavior of supervisors, our findings also indicate that subordinate officers should be encouraged to engage in health behaviors by adapting an active role in order to promote their health and well-being. For example, police officers should be encouraged to

report about perceived health risk at work and sources of job strain to their immediate supervisors. This requires an open communication structure and is facilitated by a rather transformational than traditional authoritarian leadership style. Thus, transformational leadership can be regarded as an important framework for health-oriented leadership, enabling leaders to be sensitive to health issues in the working context and allowing followers to actively engage in health-promoting behavior at the same time.

Taken together, the results of the present study provide preliminary evidence that police leaders play a key role for the physical and mental health and well-being of subordinate police officers. Educating and training police leaders towards a health-oriented leadership style and encouraging subordinates to actively engage in health-related behavior at work is thus likely to have beneficial effects for the health condition of police officers and the preservation of their long-term working capacity.

Study 3

Reducing work-related burnout among police officers: The impact of job rewards and health-oriented leadership

Chapter 4

The following paper was published in The Police Journal

Santa Maria, A., Wolter, C., Gusy, B., Kleiber, D., & Renneberg, B. (2020). Reducing work-related burnout among police officers: The impact of job rewards and health-oriented leadership. *The Police Journal*, *94*(3), 406-421.

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Abstract

The aim of the present study was to examine if work effort is associated with burnout among police officers and if job rewards and health-oriented leadership can mitigate the potential adverse effects of high work effort on officers' mental health. Data were collected in a German police department *(n*=573). The results indicated that high work effort was associated with higher levels of burnout while job rewards and health-oriented leadership were associated with lower levels of burnout. Additionally, health-oriented leadership buffered the effects of work effort on police officers' burnout levels while job rewards showed no buffering effect. The results emphasize the importance of leadership for health promotion in policing.

Key words: police, leadership, health-oriented leadership, burnout, work effort, job rewards

Introduction

The job of police officers is regarded as especially stressful and demanding, since it is characterized by various operational and occupational stressors like confrontation with violence, negative citizen encounters or shift work (Berg *et al.*, 2006; Biggam *et al.*, 1997). Especially, organizational factors like excessive administrative tasks or inconsistent leadership styles are identified as stressors by police officers (Biggam *et al.*, 1997; Newman and Rucker-Reed, 2004; Shane, 2010). At the same time, there are significant stressors related to police operations that commonly refer to the nature of police work. Particularly, the investigation of homicide is associated with cognitive and emotional stress among police personnel, like intrusive thoughts, disrupted sleep patterns and low mood (Roach, Cartwright & Sharratt, 2017). Furthermore, a recent survey in the UK found that nearly 90% of 16,857 police officers had been exposed to a work related traumatic event and almost one in five experienced post-traumatic stress symptoms subsequently (Police Care UK, 2019). Prolonged exposure to work stress is associated with a variety of adverse health outcomes and police officers show elevated risks for cardiovascular disease and higher rates psychological distress compared to other working populations (e.g., Violanti et al., 2006). A syndrome that is triggered by high job demands and chronic work stress is burnout, which is considered as a serious health threat to police officers (Santa Maria et al., 2018; Stearns & Moore, 1993). It refers to a state of emotional exhaustion, accompanied by feelings of ineffectiveness and cynicism about the value of one's work (Maslach et al., 2001). High levels of burnout among police officers in turn are associated with a more positive attitude towards violence and a more frequent use of violence during officers' duty (Kop et al., 1999) as well as with work-family conflicts (Mikkelsen & Burke, 2004) and spouse violence (Johnson et al., 2005). On an organizational level, burnout plays a mediating role in the relationship between job demands and counterproductive work behaviors of police officers (Smoktunowicz et al., 2015) and is associated with job

dissatisfaction and desires to leave the job (Pines & Keinan, 2005). Furthermore, burnout is a risk factor for developing depression (Hakanen et al., 2008), which is associated with at-work performance deficits (Lerner & Henke, 2008) and an increased risk for police officers to develop metabolic syndromes (Hartley et al., 2012).

While high work demands and work stress is associated with serious health impairments among police officers, the availability of job resources constitutes a protective factor against job-related burnout (e.g., Schaufeli & Bakker, 2004) and is capable to mitigate the negative impact of work demands on police officers' mental health (Santa Maria et al., 2018). Due to the highly stressful nature of police work and its negative consequences for police officers' health, their social environment and the organization as a whole, the identification of job resources that are protective against job-related strain appears to be of particular importance in this occupational group. The aim of the current study was to examine the link between work effort and burnout among police officers and if job rewards and health-oriented leadership can mitigate the potential adverse effect of high work effort on officers' mental health.

Effort-reward Imbalance in Police Work

According to the effort-reward imbalance (ERI) model by Siegrist (1996), the availability of rewards in the work context is of key importance for employee health. The model is based on principles of social reciprocity and claims that an imbalance due to high effort and low reward at work generates strong negative emotions and stress responses among employees, increasing their risk of long-term adverse health effects. Effort refers to the demands and requirements related to the job and includes heavy workload, time pressure and being interrupted at work. Rewards that counterbalance effort are money, esteem, status consistency and career opportunities. Additionally, the ERI model asserts that persons who are overcommitted to work, that is, who react with excessive engagement to demanding situations

at work and have a strong desire of being in control, have a heightened susceptibility to stress responses due to effort-reward imbalances (Siegrist & Li, 2016).

Many studies support the basic assumption of the ERI model that an imbalance in terms of high effort and low rewards elicits sustained stress responses in employees and leads to psychological strain. Above all, the strongest evidence exist for the link between effort-reward imbalance and depressive symptoms among employees (Siegrist, 2017). According to Siegrist (2017), the relative risk of depression is elevated by about 80 percent among employees who experience stress due to high efforts spent and low rewards received. Furthermore, empirical evidence points to a link between an effort-reward imbalance and increased burnout levels among employees across different occupational groups (Bakker et al., 2000; Klein et al., 2010; Unterbrink et al., 2007; Williams et al., 2018).

If employees have little choice with regard to alternative workplaces, the prolonged imbalance between high effort and low reward is a serious risk factor for health problems in working populations (Siegrist, 2012). Since the employment sector of police work is rather specific and does not offer a large number of alternative career opportunities, police officers may be especially prone to adverse health effects due to high effort and low rewards. A recent study examined the association between ERI and burnout among police officers (Violanti *et al.*, 2018). Results indicated that an increased ERI among police officers is associated with increased levels of the burnout dimensions emotional exhaustion and cynicism. ERI was also found to be related to the subjective likelihood of health-related early retirement of police officers (Georg et al., 2019). The results of further studies indicate that police officers who experience ERI have a nearly eight times higher risk to suffer from depression (Garbarino et al., 2013) and show greater psychological distress (Janzen et al., 2007). Thus, there is preliminary evidence that police officers who are exposed to high effort and limited rewards are at risk for developing significant health problems.

The Role of Leadership for the Health of Police Officers

There is growing evidence that leadership is an important job resource in occupational health. Reviews on leadership styles across different occupations show that leaders play a crucial role with regard to health and well-being as well as to negative health outcomes like the experience of stress and burnout among employees (Kuoppala et al., 2008; Montano et al., 2017; Skakon et al., 2010).

To date there are only a few studies examining the leadership-health link in the context of policing. Results of a recent study on German police officers indicated that a positive leadership climate was associated with reduced levels of emotional exhaustion, the core dimension of burnout (Engel et al., 2018). Furthermore, a positive leadership climate also buffered the negative impact of high work effort on the experience of emotional exhaustion in this study. Another study on the effects of leadership on positive psychological states among officers indicated a strong relationship between leaders showing genuine concern for others' well-being and increased self-confidence, a sense of fulfillment for the job and self-esteem among officers (Dobby et al., 2004). Russel (2014) examined whether transformational leadership moderates the relationship of stress and burnout among police officers. Transformational leadership refers to leaders motivating employees to transcend self-interest for the benefit of the organization through charisma, inspiration, intellectual stimulation, and individual consideration (Bass, 2010). Results indicated that the experience of stress exacerbates burnout levels among officers and that transformational leadership attenuated this relationship. However, the buffering effect of transformational leadership was weaker under highly stressful conditions. A further study found that transformational leadership was related to increased psychosocial well-being of police officers, indicated by better self-esteem, more perceived social support at work, and less romantic partner conflict (Can et al., 2017).

Transformational leadership and other existing leadership conceptions are measures of general leadership behavior which do not explicitly address health-related actions of leaders and do not take motivational or cognitive aspects of leadership into account. To address this gap, the concept of Health-oriented Leadership (HoL) was developed by Franke and Felfe (2011). The conceptualization of HoL focuses explicitly on health-related aspects of leadership and also attends to the leaders' values and awareness towards employee health besides behavioral aspects. *Health behavior* in the HoL concept refers to creating healthy working conditions, providing information on health and safety issues as well as enabling and encouraging employees to engage in healthy behavior at work. *Health awareness* refers to a leader's attention and sensitivity to health issues of employees and health impairing work conditions. A leader who scores high on health awareness is more likely to properly evaluate employees' stress levels and to recognize signs of strain at an early stage. The *value of health* aspect addresses the leaders' interest in health-related topics in the work context and the importance leaders attach to health in general. In the daily work routine it translates into the leaders' sense of responsibility for employee health and their concerns about health issues of their staff members. The HoL concept also addresses the active role of employees in the leadership-health link by investigating the role of the employees' own health-related behaviors, awareness and values in this process. According to Franke and Felfe (2011) a major advantage of the HoL concept is that it provides health-specific practical implications for the health promotion of employees.

In a longitudinal test-of-concept-study health-oriented leadership was positively related to employee health and negatively related to irritation, health complaints and work-family conflicts (Franke *et al.*, 2014). Importantly, health oriented leadership explained a unique variance in the health outcomes beyond transformational leadership. Moreover, the relationship between a health-oriented leadership style and health outcomes was mediated by the employees

own health behavior at work. Thus, employees who perceived the leadership style of their direct supervisor as health-oriented were more likely engaging in health promoting behaviors at work resulting in fewer health complaints. Recently, the concept of HoL was applied to the context of police work for the first time (Santa Maria *et al.*, 2018). Results indicated that a health-oriented leadership style was associated with more well-being and lower levels of burnout, depression and physical complaints among police officers. The officers' own health-behaviors only partially mediated the relationship between leadership and well-being while they did not mediate the relationship between leadership and adverse health outcomes. Thus, the results emphasize the importance leadership for the health of police officers beyond their own health behaviors in the work context.

The Present Study

The present study focuses on the association of work effort and police officers' burnout levels and examines the potential protective role of job rewards and leadership in this process. While the ERI model claims that the availability of rewards is crucial in order to reduce adverse health effects due to high efforts at work, leadership plays a minor role in the operationalization of the reward dimension in the ERI model. Thus, the aim of the current study is to enhance the ERI model by examining the potential beneficial role of leadership for police officers' health. We focus on the value and awareness dimension of health-oriented leadership since organizational and operational demands like high-risk operations, confrontation with violence, staff shortage or shift work may significantly reduce the potential of police leaders to engage in actual health-oriented behavior in the daily working routine. We assume that the amount to which police officers perceive leaders as being aware of job-related health risks (health awareness) and attach importance to their health and well-being (value of health) are important factors for mitigating stress-related adverse health effects in this occupational group.

In accordance with the ERI model we hypothesize that work effort is positively, and job rewards are negatively related to symptoms of burnout among police officers. Also in line with the postulations of the ERI model, we expect that the relationship between work effort and burnout is weaker for officers enjoying high job rewards, that is, we expect that job rewards buffer the health impairing effect of work effort. With regard to the potential health promoting role of leadership, we hypothesize that besides rewards also health-oriented leadership is associated with reduced burnout levels and is capable of buffering the adverse impact of work effort on officers' burnout levels (see Fig. 1).

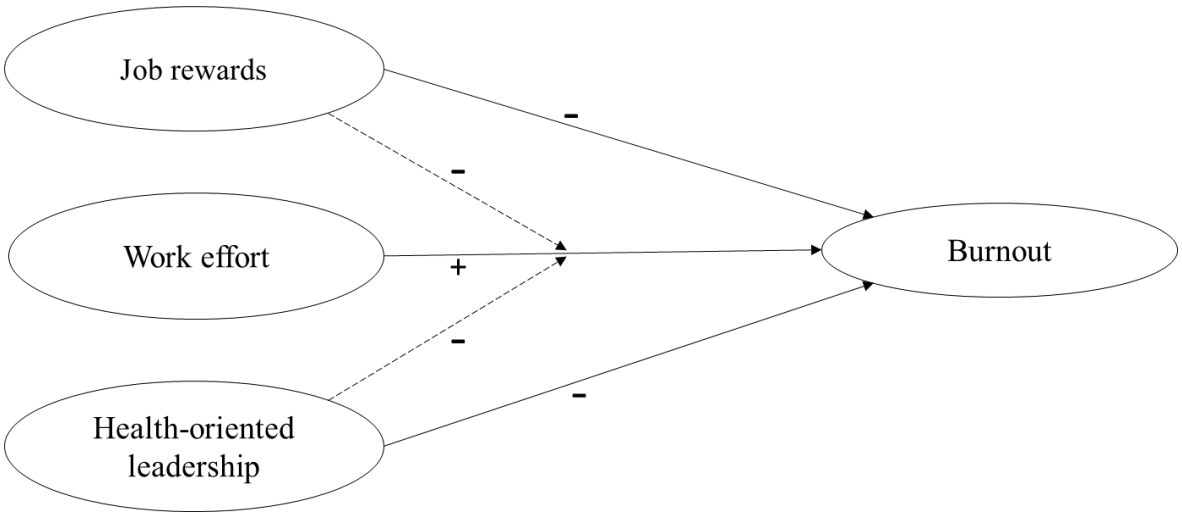

Figure 1. Model including the hypothesized relationships between health-oriented leadership, work effort, job rewards and burnout. The interaction paths are indicated by a dashed line.

Method

Participants and Procedure

Data of the present study were obtained via an online survey in an urban police department in Germany. All 1787 members of the department received an invitation to participate in the survey via their working e-mail address. Police officers out of the office received a paper pencil version of the questionnaire at their home addresses. Participants were

informed that participation was voluntary and that all data were kept confidential. In total, 573 police officers completed the survey, resulting in a response rate of 32%. Regular citizen encounters were part of the work routine for 87% of the police officers in the present sample. Furthermore, 60% of the officers were participating in police operations and 25% had leadership roles in the department. The vast majority of the police officers in the present sample were working full time (91%). The mean age of the sample was 42.5 years (*SD* = 9.8), 70% were male and 30% were female. The average years of service of the participating officers was 21.1 years (*SD* = 11.2). The study was approved by the ethics committee of the research institute as well as by the personnel board of the police department.

Measures

Work effort and job rewards were measured by the effort and reward subscale of the shortened Effort-Reward Imbalance Questionnaire (ERI-S; Siegrist et al., 2009). *Effort* was assessed by three items. A sample item is "Over the past few years, my job has become more and more demanding". Cronbach's alpha for the effort scale was .68 in the current sample. *Reward* was measured with six items in total belonging to three subscales – esteem reward, financial reward and security reward. *Esteem reward* was measured with two items. A sample item is "Considering all my efforts and achievements, I receive the respect and prestige I deserve at work". *Financial reward* was assessed by three items. A sample item is "Considering all my efforts and achievements, my job promotion prospects are adequate". *Security reward* is originally measured by two items within the ERI-S. Since police officers are civil servants, they do not need to worry about losing their job wherefore that item was eliminated from the questionnaire. Accordingly, one item, "I have experienced or I expect to experience an undesirable change in my work situation" (inverted) assessed job security. Cronbach's alpha for the overall reward scale was .77 in the current sample. All effort and reward items were rated on a four-point scale ranging from 'strongly disagree (1) to 'strongly agree' (4).

Health-oriented leadership was measured by the *health awareness* and the *value of health* subscale of the health-oriented leadership questionnaire (Franke et al., 2014). Police officers rated their direct supervisor's health-orientation on a 5-point rating scale ranging from *not at all true* (1) to *completely true* (5). *Health awareness* was measured by five items assessing the extent to which leaders show attention and sensitivity to health issues among employees and health impairing work conditions (e.g., "My supervisor notices when I need a break"). The *value of health* subscale assessed the importance leaders attach to employee health and was measured by three items (e.g., "My supervisor feels responsible to take care/preserve of my health"). In the current study, Cronbach's alpha for the health awareness subscale was .94 and for the value of health subscale .90.

Burnout was assessed by the German version (Hanebuth et al., 2012) of the work-related burnout subscale of the Copenhagen Burnout Inventory (Kristensen et al., 2005). The subscale consists of seven items (e.g., "Do you feel burned out because of your work?") with possible scores ranging from 0 (*never*) to 100 (*always*). In the present study the internal consistency was .89.

Data Analysis

Descriptive statistics with regard to characteristics of the study sample, outcome variables (means, standard deviations) and reliability measures were obtained using SPSS 24. For testing the hypotheses we conducted structural equation modeling (SEM) with Mplus version 7.4 (Muthén & Muthén, 2014). As recommended by Schermelleh-Engel et al. (2003), the fit of the models was assessed by the Chi-Square goodness-of-fit statistic, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), the Tucker Lewis Index (TLI) and Standardized Root Mean Square Residual (SRMR). For the RMSEA a cutoff value close to .06, for the SRMR a cutoff value close to .08 indicates a good fit. For the CFI

and the TLI values of .90 are acceptable and values close to .95 indicate a good fit of the hypothesized model to the data (Hu & Bentler, 1999).

The measurement model was specified and tested first, in order to identify and address potential issues regarding the model fit before the full structural model was tested (Herting & Costner, 2000). In order to test the hypotheses, a model with work effort, job rewards and health-oriented leadership as exogenous variables and burnout as an endogenous variable was specified in a first step. In a next step, two interaction terms (job rewards x work effort/ health-oriented leadership x work effort) were added to the model in order to test the respective buffering hypotheses. Thus, in order to test the combined effect of work effort and job rewards an interaction term (work effort x job rewards) rather than the commonly used ERI ratio term was utilized in the present study, as recommended by Van Vegchel et al. (2005).

For all model estimations Robust Maximum Likelihood (MLR) was used.

Results

Means, standard deviations, intercorrelations and reliability coefficients (Cronbach's alpha) of the study variables are presented in Table 1. The internal consistencies (Cronbach's alpha) of all scales except for work effort exceed the value of .70, indicating good reliability. Cronbach's alpha for the work effort scale was .67, indicating acceptable reliability. All correlations between the variables were significant ($p < .05$).

Table 1. *Means, standard deviations, correlations between the study variables and internal consistencies (Cronbach's Alpha).*

	Variable	Range	M	SD	1	2	3	4	5
1.	Work effort	1 - 4	3.12	1.75	(.68)				
2.	Job rewards	1 - 4	2.00	.56	-.36	(.77)			
3.	Health awareness	1 - 5	2.39	1.02	-.21	.45	(.94)		
4.	Value of health	1 - 5	2.83	1.10	-.23	.45	.76	(.90)	
5.	Burnout	0-100	46.62	20.15	.33	-.51	-.43	-.42	(.89)

Note. All correlations are significant at the $p < .05$ level.

The measurement model of the exogenous (work effort, job reward, health-oriented leadership) and endogenous variables (burnout) showed that the model fits the data adequately (χ^2 [244, $N = 573$] = 820.125, $p < .001$, CFI = .92, TLI = .91).

The model of the hypothesized relationships between health-oriented leadership, work effort, job rewards and burnout was tested using SEM (see Fig. 2). The hypothesized model showed a reasonable fit with the data, indicated by the following goodness-of-fit measures: χ^2 [244, $N = 573$] = 810.125, $p < .001$, RMSEA = .06, SRMR = .05, CFI = .92 and TLI = .91. Since the χ^2 test is sensitive to sample size, a significant χ^2 test is common for large samples (Hu & Bentler, 1999). In line with our hypotheses, work effort was positively (ß = .16, $p < .01$) and job rewards were negatively related to burnout (ß = -.37, $p < .01$), confirming the basic postulations of the ERI model. As expected, health-oriented leadership was also negatively related to burnout (ß = -.24, $p < .01$; Fig. 2).

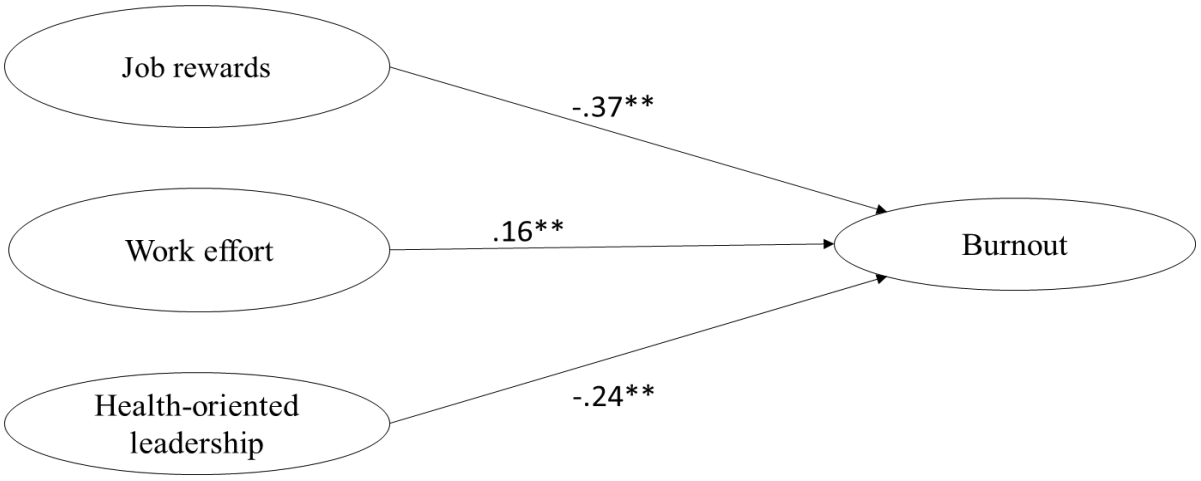

Figure 2. Standardized path coefficients for the hypothesized relationships between job rewards, work effort, health-oriented leadership and burnout.
** p < .05*
*** p < .001*

In order to test whether job rewards and health-oriented leadership buffer the adverse impact of work effort on mental health, a second model with the respective interaction terms was specified and tested. Since the goodness-of-fit measures (RMSEA, SRMR, TLI, CFI) are not assessable for interaction terms, the comparison of the second model with the first model was obtained by the Akaike information criterion (AIC) and the z test of the interaction terms. The AIC of the second model including the interaction terms (AIC= 56676.50) was smaller than in the first model (AIC= 56677.05), indicating that it fitted the data better (Schreiber *et al.*, 2006). The interaction term with health-oriented leadership was significant (ß = -.18, p < .05). However, the interaction term with job rewards was not significant (ß = .09, p = .26). Thus, an adjusted model without the non-significant interaction term was specified and tested (see Fig. 3), resulting in a better fit of the model to the data (AIC=56673.63). In the adjusted model the interaction term for health-orientated leadership was still significant, confirming the buffering effect of HoL on the relationship between work effort and burnout (ß = -.11, p < .05).

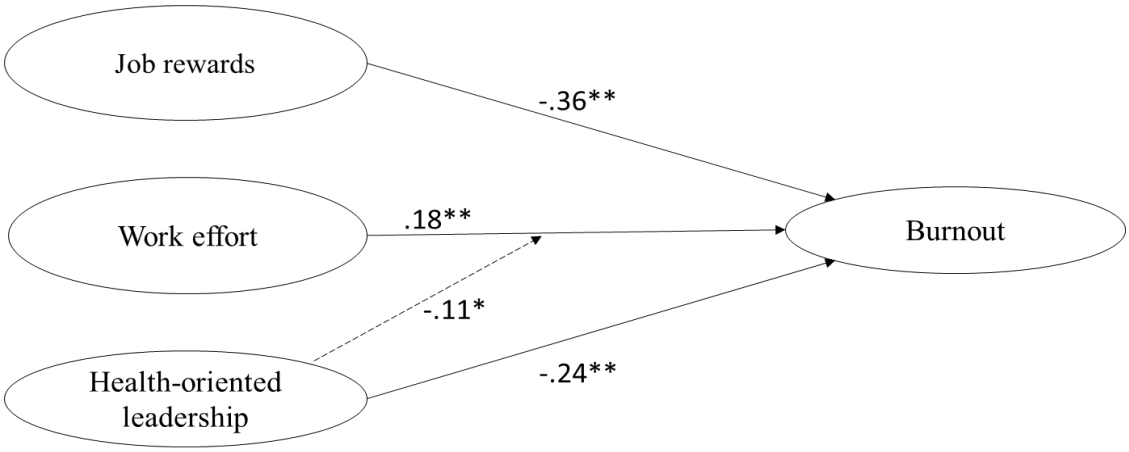

Figure 3. Standardized path coefficients for the adjusted model including the significant interaction term (Work effort x Health-oriented leadership).
* $p < .05$
** $p < .001$

Discussion

The aim of the present study was to examine the relationship between work effort and burnout among police officers and to identify protective factors against work-related psychological strain in the context of police work. While job rewards are regarded as an important resource that counteract health issues due to high demands at work in the well-established ERI model, the current study aimed to enhance the model by focusing also on the potential health promoting impact of health-oriented leadership in this process.

In sum, the results confirmed our central assumptions regarding the importance of leadership for police officers' health, while the hypotheses regarding the postulations of the ERI model were only partially supported. In line with the ERI model, work effort was associated with increased burnout levels while job rewards were associated with reduced burnout levels. However, only health-oriented leadership but not job rewards mitigated the health impairing effects of high work effort, pointing to the prominent role of leadership for health promotion in policing.

The result that work effort was associated with higher levels of burnout is in line with results of previous studies indicating that high work effort is linked to emotional exhaustion, the central component of the burnout syndrome (Hall et al., 2010; Willis et al., 2008). Furthermore, the finding of this study corresponds also to the results reported by Santa Maria et al. (2018) after which workload is linked to emotional exhaustion and subsequent depressive symptoms among police officers. Thus, our results contribute to the empirical evidence that high work effort constitutes a significant risk factor for adverse mental health effects among police officers.

As expected, job rewards were negatively related to the experience of job-related burnout, supporting the basic assumption of the ERI model that the availability of rewards in the working context constitutes a protective factor against work-related strain (Siegrist, 2017). However, job rewards did not buffer the adverse effects of work effort on officers' burnout levels in the present sample. This finding contradicts the assumption that the relationship between work effort and job-related strain is weaker for employees who perceive their work as rewarding. In the present study job rewards were assessed as a global measure without differentiating the three distinct reward systems (esteem rewards, financial rewards, security rewards). Thus, a possible explanation for the non-significant interaction effect is that potential effects of job rewards may have been averaged. While Siegrist and Peter (1996) advocate the use of reward as a global measure, van Vegchel et al. (2002) suggest that the reward structures should be examined independently since different rewards may have different effects on the outcome measures. For example, high work effort had the most adverse effects on employee health when esteem rewards were low, while low financial rewards did not have a strong effect on health outcomes (van Vegchel et al., 2002). Thus, instead of one global measure of job rewards, future research should examine the specific effects of the reward dimensions on health outcomes of police officers separately. Another possible explanation for the missing buffering

effect might be that there are other more important job resources in the occupational field of policing which alleviate the adverse effects of high work effort. For example, a study using the job demands-resources model (JD-R) found that social support by colleagues, shared values and a positive leadership climate were important job resources that buffered the adverse effects of high job demands on emotional exhaustion among police officers (Santa Maria et al., 2018). Police officers' work values were also identified as a protective factor against burnout and were positively related to work engagement in a recent study by Basinska and Daderman (2019). Thus, it may be advisable to use broader models like the JD-R model in future research to allow the integration of various job resources relevant to policing.

The finding that a health-oriented leadership style was associated with reduced levels of burnout among police officers in the present sample is consistent with existing studies on the leadership-health link showing that health-oriented leadership is associated with reduced physical and psychological health problems in the general working population (Franke et al., 2014) and among police officers (Santa Maria et al., 2018).

Furthermore, our results indicate that health-oriented leadership style was even capable of buffering the health-impairing effects of high work effort. That is, officers who perceive that their direct supervisor cares for their health and is aware of their current stress level have a reduced risk for job-related burnout. The potential of leadership to mitigate the adverse effects of job demands on mental health was also found in a previous study in which a positive leadership climate buffered the negative impact of high work effort on emotional exhaustion among police officers (Engel et al., 2018). Moreover, our results regarding health-oriented leadership are all the more remarkable as not behavioral aspects but the leaders' health awareness and their value for health mitigated the adverse effects of high work effort. Police officers who perceive that their supervisor attaches importance to health issues and recognizes when and why someone is stressed, may feel better cared for and taken more seriously. Thus,

HoL may reflect a leader's appreciation and recognition for individuals which had been shown to be positively associated with employee well-being in stressful work situations (Gilbert & Kelloway, 2018; Stocker et al., 2018). Leaders' health awareness and value of health may be especially important beyond behavioral aspects in the context of policing, since the potential of actual health-oriented leadership behavior, like protecting employees from physical strain at the workplace, is often restricted due to the challenging nature of police work as a high risk occupation (Dantzer, 1987). The everyday routine police officers face especially in stressful urban environments often implies the risk of physical and psychological harm. Furthermore, organizational factors like staff shortage or shift work may also hinder police leaders in health-oriented behavior, even if they do care and attach importance to the health of their subordinates. Since appreciation and recognition may be an important underlying mechanism in the leadership health link, future research should examine their role within the theoretical framework of health-oriented leadership. For example, it could tested whether appreciation and recognition moderate the relationship between leadership and beneficial health outcomes among employees.

Limitations and Future Directions

Despite its strength in providing knowledge about preventive factors against job-related burnout among police officers, the present study has some limitations that should be noted. First, all analyses were based on cross-sectional data which does not allow conclusions about the temporality and causality of the observed effects. Longitudinal studies are needed in order to assess causal influences of job rewards and leadership on health outcomes of police officers. However, the concept of health-oriented leadership (Franke et al., 2014) and the ERI model (Tsutsumi & Kawakami, 2004; van Vegchel et al., 2005) were both empirically validated in longitudinal studies. Thus, previous studies support the hypothesized directions of the relationships between work effort, job rewards, leadership and burnout tested in the present

study. Second, all data in the present study were obtained by self-report measures. This increases the risk of common method variance which may cause an overestimation of the strength of the observed relationships. This potential problem could be addressed by using objective rather than solely subjective measures. For example, the number of operations of police officers could be taken into account as a proxy for work effort. Third, even though we obtained a satisfactory overall response rate of 32%, there is the risk that results may be biased by nonparticipation. On the one hand studies have shown that responders are slightly healthier than non-responders in large population based health surveys. On the other hand those studies have also shown that the impact of these differences on prevalence rates was rather small, resulting in relatively unbiased results even for studies with only moderate response rates (Sogaard et al., 2004; Vink et al., 2004).

Practical Implications

The results of the present study show that high work effort has adverse consequences for mental health of police officers. There are several job demands that are inherent to policing and can hardly be changed. Still, it is nonetheless vitally important to reduce police officers' work effort whenever possible in order to prevent work-related health impairments. The aspects of work effort assessed in the present study, like working overtime or under high time pressure, represent organizational stressors which had repeatedly been identified as the greatest source of police stress (Shane, 2010; Violanti & Aron, 1995). Staff shortage is a major problem related to high workload and time pressure in the daily work routine of police officers. Hiring more staff may not only prevent job-related strain in police officers but is also advisable from an economic point of view since staff savings may result in even higher costs due to higher rates of sickness absence and associated costs for the health-care system in the long run. The results of the present study provide further empirical support for the necessity to reduce workload and

staff shortages in order prevent health problems among police personnel and to sustain police officers' long term working-capacities.

Besides reducing work effort, leadership appears to be of particular importance for the objective to promote police officers' health. Thus, police leaders have a special responsibility not only for performance aspects but also with regard to protecting the health of their subordinates. This is even true, when leaders' capabilities to engage in health-promoting behavior is restricted because of job demands in policing which can hardly be changed. First, our results implicate that the awareness of police leaders for signs of stress and strain among officers should be promoted during leadership development. For example, Chapin et al. (2008) describe a specific training program for police leaders to recognize and address stress symptoms among their personnel. Police leaders are educated in physical, emotional and social effects of stress and how to assess signs of stress experienced by officers in their unit. Besides focusing on stress management strategies, the training program provides a specific tool for rewarding officers who take action to manage their own stress, support a coworker in difficult times or challenge the social climate that discourages and stigmatizes help seeking in the department.

In order to reduce stigmata and create a working atmosphere wherein help seeking is encouraged the value leaders attach to health issues of subordinates is an important prerequisite. When a police leader expresses that he or she cares for the health of their subordinate officers and signals that it is nothing to be ashamed of to feel stressed and emotionally strained at times, it is more likely that they seek social support and take positive action to manage their stress. Thus, a health-oriented attitude that is characterized by valuing the health of subordinate officers should be promoted as well during police leadership development in order to prevent that officers postpone help seeking until job-related problems may force disciplinary action and mental health problems become chronic.

Taken together, the findings of the present study provide further evidence that police leaders play a key role for creating a healthy working environment and for reducing job-related mental health issues among police officers. A greater incorporation of health-orientated aspects of leadership in the education of police leaders is likely to have a beneficial impact on police officers' health and may support them to cope better with the daily hazards of a highly demanding job.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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General Discussion

Chapter 5

Summary of the Findings

Job-related stress is associated with a variety of adverse health outcomes among employees. Especially if workplace stress becomes chronic and a person lacks the ability to cope with the given stressors, there is a heightened risk of developing physical and mental health problems. Burnout is a particularly serious feature of prolonged workplace stress. The burnout syndrome is characterized by experiencing emotional exhaustion, depersonalization, and reduced feelings of personal accomplishment. Burnout is especially prevalent among human service professionals, resulting from demanding and emotionally charged interactions with clients (Maslach & Schaufeli, 1993). Police officers constitute a further occupational group that is confronted with emotionally demanding interactions on a daily basis, such as confrontation with death and illness, violence and victims of crime or accidents. Police work is considered as a high-risk occupation with serious stressors, and research has shown that police officers are especially vulnerable to develop burnout. Burnout among police officers is associated with a more positive attitude towards violence, counterproductive work behaviors, job dissatisfaction and negative outcomes for their families, such as spouse violence and being uninvolved in family matters. Epidemiological studies on mental health of police officers have shown that police officers have also a heightened risk for developing symptoms of depression, anxiety and posttraumatic stress disorder (PTSD).

Since there are several stressors that lie in the nature of police work, for example the confrontation with violence or human misery, the identification and promotion of job resources that protect officers from work-related mental and physical strain are of particular importance in this occupational group. The aim of this thesis was to identify factors that protect against work-related strain in policing, with a special focus on the impact of leadership on police officers' health. The following paragraphs briefly summarize the main findings from the studies

included in this thesis. Hereafter, a thorough discussion of the implications of these findings for practical interventions and future research is provided.

Study 1: Job demands, Job Resources and Psychological Strain among Police Officers

The first study sought to identify job demands and job resources that are associated with depression and anxiety symptoms among police officers. Furthermore, it was examined if emotional exhaustion, the core symptom of burnout, plays a mediating role in this relationship. In order to identify health-protective factors that alleviate psychological strain in a demanding working environment, it was also tested if job resources are capable of buffering the adverse effects of job demands on the officers' mental health. In order to examine these relationships, the job demands-resources (JD-R) model was applied and tested. Earlier studies in the context of police work had used the JD-R model solely as a theoretical basis without explicitly testing the assumptions inherent to the model (Hall et al., 2010) or tested only a single aspect of the model (Grawitch et al., 2010; Martinussen et al., 2007; Wu, 2009). Job demands included high workload and assaults by citizens, whereas job resources included social support by colleagues, shared values and a positive leadership climate. Results showed that job demands were associated with higher levels of depression and anxiety levels among police officers, mediated through emotional exhaustion. In contrast, social support by colleagues, shared values and positive leadership climate constituted job resources that were negatively associated with the experience of depression and anxiety. Furthermore, job resources buffered the effect of job demands on emotional exhaustion, indicating that the higher police officers assess their job resources, the lower is the negative impact of job demands on police officers' mental health. Overall, the results of the first study supported the postulations of the JD-R model, and the identification of job demands and job resources related to psychological strain among police officers provides a good starting point for health-promotion interventions in policing.

Study 2: The Impact of Health-oriented Leadership on Police Officers' Health

Previous research has shown that leadership has a substantial impact on employee health. Different leadership styles can both affect followers in a positive, health-promoting and in a negative, health-impairing way. A large body of research focused on the impact of transformational leadership and indicates a positive association with beneficial health outcomes among employees. Traditional leadership styles in policing can be defined as authoritarian and autocratic, pointing to a bureaucratic and quasi-military organization of police departments. However, research over the last decades indicates a shift to a rather transformational leadership style that encourages communication and participation which is associated with more positive health outcomes and well-being among subordinates in policing.

While classical leadership theories like transformational leadership focus on performance and motivational aspects of employees, they do not provide information on health-specific leader behaviors and attitudes. Therefore, the aim of the second study was to examine the impact of health-oriented leadership (HoL) on both physical and mental health outcomes of police officers. HoL provides a model of an explicit health-specific leadership style that attends to the leaders' behaviors, values and awareness towards follower health. Furthermore, it also addresses how followers care for their own health in the working context (*self-care*), assigning them an active role in the leadership-health link. The second study tested if HoL has a direct effect on the experience of burnout, depression, well-being and musculoskeletal problems among police officers. Furthermore, it was examined whether this relationship is mediated by work-related health behaviors (*self-care*) of the officers themselves. The results indicated that a health-oriented leadership style was associated with more well-being and lower levels of burnout, depression and musculoskeletal problems among subordinates. Moreover, health-oriented leadership was positively associated with self-care of subordinate police officers. Thus,

health-oriented leaders promote self-directed health behaviors of their subordinates that are in turn associated with higher levels of well-being. This implicates that police leaders do not solely affect officer health and well-being by creating favorable working conditions like previous studies suggest, but also by promoting officers' own self-care at work. Overall, the results of the study support the validity and usefulness of the HoL concept and emphasize the importance of leadership for officer health in policing.

Study 3: The Role of Job Rewards and Health-oriented Leadership in Reducing Burnout

While high work demands and work stress are associated with health impairments, research on occupational health in policing indicates that the availability of job resources constitutes a protective factor against burnout. According to the effort-reward imbalance (ERI) model, job rewards in terms of money, esteem, and career opportunities counterbalance the health-impairing impact of job demands, including heavy workload, time pressure and being interrupted at work. While there is growing evidence that leadership is an important determinant for employee health, it plays only a minor role in the operationalization of the reward dimension in the ERI model. The aim of the third study was thus to enhance the ERI model by adding the concept of health-oriented leadership (HoL) and to examine the respective impacts on officers' burnout levels. Different from study 2, the focus in study 3 was on the *value* and *awareness* dimension of HoL. Leaders' health-oriented *behaviors* were not included since typical job demands in policing, like high-risk operations, confrontation with violence or staff shortage may significantly restrict police leaders to show health-oriented *behaviors* in the daily hassles of police work.

The results indicated that high work effort was associated with higher levels of burnout, which is in line with results of previous studies showing that high work effort is linked to emotional exhaustion, the central component of the burnout syndrome (Hall *et al.*, 2010; Willis

et al., 2008). Furthermore, both job rewards and health-oriented leadership were associated with lower levels of burnout. However, only health-oriented leadership but not job rewards buffered the health-impairing effects of high work effort on burnout levels. This finding contradicts the assumption of the ERI model that the relationship between work effort and job-related strain is weaker for employees who perceive their work as rewarding. At the same time, the ability of health-oriented leadership to mitigate the adverse effects of job demands on mental health point to the prominent role of leadership for the prevention of burnout in policing. Moreover, since leaders' health awareness and their value for health - and not health behaviors - served as protective factors against psychological strain, the results of the study may be of particular relevance for police work in which actual health behaviors of leaders may be significantly restricted by job demands inherent to policing.

General Discussion and Implications

Leadership and Health in Police Work

The results of the studies conducted in the framework of this thesis provide evidence for the critical role of leadership in workplace health promotion. The results of all three studies indicate that leadership constitutes an important workplace resource and serves as a protective factor against job-related strain in policing. Study 1 examined the health-promoting impact of a positive leadership climate, characterized by individual consideration of subordinates, provision of clarity in goals, and by supplying information, feedback and support (Hollmann & Hanebuth, 2011). While leadership was only one resource among others in study 1 and was assessd by a rather general measure of leadership quality, studies 2 and 3 applied the concept of health-oriented leadership (Franke, Felfe, & Pundt, 2014). The results point to the importance of a leadership style that focuses explicitly on health issues in order to protect police officers from mental and physical job-related strain. A practical implication of these findings is that a

health orientated-leadership style should be addressed and promoted in police organizations, ideally already during leadership development. Prospective police leaders should be educated about the principles of health-oriented leadership and its positive influence on the mental and physical health of subordinate officers. However, it lies in the nature of police work that officers are exposed to a heightened risk of suffering both physical and mental harm during police operations. Thus, when completing law enforcement duties in the field, like patrolling or specialized operations, police leaders' ability to engage in health-oriented leadership behaviors to prevent health risks among their subordinates may be restricted. Moreover, leaders may also have to adapt their leadership style to a rather directive, autocratic and command-based style in order to make quick decisions that everyone follows in emergency or crisis situations. In this respect, police leaders face different requirements than most leaders across other organizations. Nevertheless, even the awareness for health issues and the value police leaders attach to the health of their staff members appear to be protective against psychological strain, as the results of study 3 suggest. A possible explanation for this findings is that police officers who perceive that their supervisor attaches importance to their health and knows when and why he/she is stressed, may feel better cared for and taken more seriously. This implicates that during leadership development prospective leaders should be sensitized for beneficial attitudes towards follower health and motivated to show interest and awareness for the mental and physical condition of their staff members. This might be even more important if leaders' health-orientated behaviors may be restricted under certain circumstances. With regard to behavioral aspects, police leaders could be educated in specific leadership behaviors that are associated with positive health outcomes of followers. For example, leaders should ensure that officers comply with break times and working hours, inform officers about safety regulations and health trainings provided by the agency, set clear priorities and make critical decisions transparent. To date, there is only limited evidence on the effectiveness of interventions based on the principles of health-oriented leadership and existing studies are of low to moderate quality (Stuber et al.,

2021). However, Vonderlin and colleagues (2021) recently developed a comprehensive health-promoting leadership intervention program and investigated its effectiveness in a sample of leaders and employees from different occupations in a quasi-experimental study design. Results indicated that the intervention improved leaders' health-oriented self-care and resulted in an increase in health-oriented leadership during the 3-month follow-up period. Furthermore, leaders experienced a larger decrease in mental distress compared to the control group. The decrease of leaders' mental distress was mediated by an increase of health-oriented self-care in turn. At the employee level, no significant effects were found in any of the outcome measures. However, there was a significant effect of health-oriented leadership on subsequent mental distress among employees, pointing to its importance for employee mental health.

Besides interventions focusing on the principles of health-oriented leadership, a practical intervention could focus on educating police supervisors on common symptoms of mental disorders in order to identify psychological strain among officers at an early stage. This would potentially stimulate the provision of appropriate and effective support for affected individuals. An intervention focusing on knowledge transfer regarding mental illness and conversational skills could be beneficial since leaders are often unsure about when and how to address mental health issues among employees and hesitant to discuss possible performance impairments involved. Since psychological strain and mental problems are common problems among police personnel (Houdmont, 2013, Syed et al., 2020), agencies are likely to benefit from providing police leaders with appropriate guidelines for dealing with mental issues among their staff members. A confidential, yet open communication about mental strain and mental health problems by police leaders could also help to reduce mental health stigma in police departments, one of the most significant barriers to seeking mental health services and support (Jetelina et al., 2020; Karaffa & Koch, 2016).

The Role of Self-care

The results of study 2 indicate that health-oriented leadership was associated with police officers' own health behaviors (*self-care*) that in turn were linked to higher levels of well-being, assigning officers thus an active role in the leadership-health link. This is in line with results of previous studies indicating that persons who show self-care are more aware of their health status, engage in less unhealthy behavior and have reported greater well-being (Ball & Bax, 2002; Richards, Campenni, & Muse-Burke, 2010). Furthermore, it was shown that employees take more care of their own health and therefore have fewer health complaints if they perceive their supervisors as health-oriented leaders (Franke et al., 2014). Thus, self-care of employees appears to be a critical mediator through which leadership impacts employees' health and well-being. However, people may differ in their desire for support (Beehr, Bowling, & Bennett, 2010), in their expectations of leaders, and their conceptions of expected and desired leader behavior (Schyns & Schillings, 2011; Shondrick & Lord, 2010). Since health-oriented leadership focuses on health issues among employees by providing supervision and support beyond formal leadership tasks, it concerns an area that is often considered a private matter (Kaluza, Weber, Van Dick, & Junker, 2021). Kaluza and colleagues (2021) argue that individual differences may exist with regard to the amount of support employees want from their leaders, which in turn may affect the positive impact health-oriented leadership has on employees. They found that health-oriented leader behavior is associated with a better relationship quality between leader and employee, especially if employees consider such leader behavior ideal. Moreover, these employees were likely to engage in health-promoting behavior themselves, which in turn was related to reduced levels of emotional exhaustion. The study results provide new insights into the mechanisms through which health-oriented leadership may affect employees' health and point to a critical role of the quality of employee-leader relationships and employees' expectations regarding leaders' health support.

While the focus of the studies included in this dissertation was on leaders' health-oriented behaviors, values and attitudes towards subordinates, leaders' concern for their own health (*leader self-care*) may also be critical for follower health. Leaders who are aware of health issues and take care of their own health are likely to encourage similar attitudes and behaviors among followers, since they serve as role models for followers (Gächter & Renner, 2018). Through their role model function, leaders may thus shape followers' beliefs about what are considered appropriate health-related behaviors and attitudes at the workplace and in private life. A study by Kranabetter and Niessen (2017) found that leader self-care was negatively related to employee exhaustion. Results of a recent study showed that the way leaders manage their own health is also closely related with followers' self-care and subsequent health outcomes (Klug, Felfe, & Krick, 2019). Overall, health-oriented leadership was associated with the best health outcomes among followers when both leaders and followers scored high on self-care. Interestingly, followers had more health complaints when leaders disregard their own health at work (i.e., low leader self-care), even when the leaders employed a health-oriented leadership style. The authors concluded that low leader self-care may diminish the benefits of health-oriented leadership, either because leaders may be perceived as less authentic as role models or because followers may feel pressured to sacrifice their own self-care in order to help out their leader. Thus, leaders should be aware of their position as role models and should not only be trained in providing healthy working conditions, but also how to take care of their own health in order to encourage similar behavior among their employees.

Influence of Contextual and Individual Factors on Health-oriented Leadership

While studies conducted in this dissertation indicate a beneficial impact of health-oriented leadership on follower health, no individual or work-related characteristics that might influence health-oriented leadership behavior towards employees were taken into account. For

example, Horstmann (2018) suggests that leaders' personal initiative is an important driver for health-oriented leadership behavior. Personal initiative reflects work behavior that is proactive and enables leaders to overcome potential barriers to actively change the work environment while remaining consistent with organizational goals (Fay & Frese, 2001). In the context of health-specific leadership, personal initiative can be directed towards promoting employees' health and well-being, given that leaders attach value and importance to workplace health. Results of a study by Horstmann (2018) indicate that the relationship between health-oriented leadership and employee self-care was stronger when leaders' personal initiative levels were high. Self-care among employees was associated with reduced burnout levels in turn. However, the direct effect of health-oriented leadership on employee burnout was not moderated by leaders' personal initiative. Thus, while personal initiative of leaders may be an important moderator for promoting employees' health-related behaviors at work, it appears not to be a prerequisite for the health-promoting impact of health-oriented leadership on employee health.

A relevant context factor that can potentially challenge leadership and was not considered in the studies of this thesis is the occurrence of crises (Halverson et al., 2004; Hannah & Parry, 2014). Critical events and crisis situations may significantly interfere with working routines and change working conditions due to their threatening nature and high levels of uncertainty that usually come along (Bundy & Pfarrer, 2015; Pillai, 1996). For example, the Covid-19 pandemic was responsible for sudden changes of working conditions of employees in many countries all over the world (Eurofound, 2020). The coronavirus reflects not only a physical health risk but also increases the risk of mental health problems (Sinclair et al., 2020). Research indicated that especially the associated work-related changes seem to threaten employees and cause psychological distress (Hamouche, 2020). Health-promoting leadership is potentially an important workplace resource that may reduce work-related strain and help to maintain employee health in the Covid-19 crisis. While the studies of this dissertation support

the positive impact of health-oriented leadership in routine working conditions, Klebe, Felfe and Klug (2021a) recently examined whether the health-oriented leadership approach is still feasible and effective in light of the Covid-19 pandemic. Results indicated that employee health decreased during the Covid-19 pandemic but that higher health-oriented leadership was associated with an increase in follower health in turn. Furthermore, the positive impact of health-oriented leadership was even stronger under crisis conditions. The authors argued that health-oriented leadership is particularly important for followers affected by crises and recommended that leaders should display health-oriented leadership in both small-scale and large-scale crises. However, the question remained whether leaders may strengthen or rather reduce their efforts to engage in health-oriented leadership under crisis conditions. In a follow-up study, Klebe, Felfe and Klug (2021b) examined the effect of crisis and leader strain on the engagement in health-oriented leadership behaviors. In fact, results showed that there was a decrease of health-oriented leadership in crisis and leaders also displayed less health-oriented leadership when they were strained. Thus, crises seem to impair leaders' emotional and cognitive capacities to an extent that they rather protect their own resources and are not able to continuously engage in health-promoting behavior. However, the study results also indicated that leaders displayed more health-oriented leadership when their followers experienced strain. Moreover, whereas leader strain strengthened the negative relationship effect of a crisis on the display of health-oriented leadership, follower strain buffered this negative effect. Thus, while the Covid-19 crisis led to a decrease of health-oriented leadership behavior on the one hand, the results also showed on the other hand that leaders still aim to display a moderate amount also during crisis and that leaders respond with increased health-oriented behavior when followers experience strain in order to protect the health of their staff members. In order to prevent health-oriented leadership from deteriorating in crises, the authors recommend that organizations train leaders' awareness to health-related warning signals and to maintain a health-promoting leadership approach to protect follower health in critical periods. The recent

studies by Klebe and colleagues point to the importance of influential contextual factors relevant to health-oriented leadership by showing that its display is affected by situational factors, as well as by leader and follower health. More research is needed to identify further individual and contextual factors that restrict or promote the display of health-oriented leadership in order to ensure its beneficial effects of maintaining and promoting employee health in organizations.

Limitations and Future Directions

Theoretical Considerations. Over the past two decades, several concepts of "healthy" leadership were introduced in order to account for the health-specific influence of leaders on employee health and well-being (Rudolph, Murphy, & Zacher, 2020). Besides health-oriented leadership (Franke & Felfe, 2011), there are a number of constructs with similar labels, like health-promoting leadership (Eriksson, Axelsson, & Axelsson, 2011), health-specific leadership (Gurt et al., 2011), or health-promoting managerial work (Dellve & Eriksson, 2017). Since these models have emerged in parallel, Rudolph et al. (2020) argue in a critical review on the new "healthy leadership" models that there might be a great deal of theoretical and empirical overlap between them, heightening the risk of construct proliferation (Shaffer, DeGeest, & Li, 2016). Thus, there might be an accumulation of seemingly different but potentially identical constructs that aim to represent "healthy leadership". At the same time, there is the risk of the mistaken belief that two constructs are the same because they have similar labels ("jingle fallacies"; Kelley, 1927), even though the measures used by the respective models are less aligned than their names suggest. Therefore, Rudolph and colleagues (2020) suggest that scholars, rather than developing new models, should put more effort in developing an integrated theory regarding the nature of the leadership-health link for creating a broader and unified model of "healthy leadership". Furthermore, future studies on "healthy leadership"

should control for established leadership constructs (e.g., transformational leadership and transactional leadership) in order to identify potential overlap and to increase incremental validity of the health-specific leadership approaches. However, with regard to incremental validity of the health-oriented leadership model, a study showed that it explains variance in employee health outcomes above and beyond transformational leadership (Franke et al., 2014).

Another concern raised is using single sources (e.g., only self-reports by followers) when studying the relationship of leadership and health in organizations (Inceoglu, Thomas, Chu, Plans, & Gerbasi, 2018). Using single sources designs is not optimal for studying dyad relationships between leaders and followers since it increases the risk of common method bias and of confounding leadership behaviors with their intended outcome (Rudolph et al., 2020). Common method bias might overestimate the effects of the predictors on the outcome variables (Podsakoff, MacKenzie, & Podsakoff, 2012). In order to address this issue, Vonderlin et al. (2021) examined how leader and follower ratings on health-oriented leadership (HoL) correspond to each other and which perspectives are predictive for follower health. Results indicated leaders' ratings were related to ratings of followers' ratings only with regard to leaders' health behavior, but not to the "value of health" and "health awareness" dimension of HoL. The authors argue that this finding might be due to the fact that leaders' health awareness and the value they attach to health are not directly observable from third parties. Furthermore, own leaders' ratings on their levels of HoL exceeded followers' ratings on all three HoL-dimensions. Finally, only the subjective assessment of followers predicted levels of anxiety and depression while the leaders' assessment of their health-oriented behavior at work showed no significant effect on the health outcomes of followers. Thus, it is still unclear under which conditions the assessments of leaders and followers correspond to each other and to what extent leaders' self-assessment is associated with the health of followers. Previous research has shown that contextual work characteristics (Ostroff, Atwater, & Feinberg, 2004), individual

characteristics of leaders (Bergner, Davda, Culpin, & Rybnicek, 2016) as well as other leadership styles, such as authentic leadership (Gardner, Cogliser, Davis, & Dickens, 2011), might be significant moderators that account for discrepancies in self-other agreements. Future studies should thus apply comprehensive moderator and mediator analyses in multi-source study designs in order to better understand the complex relationship between leadership and health and the different perspectives involved.

Methodological Considerations. A main limitation of all three studies in the thesis is that the results are based on cross-sectional data. Cross-sectional study designs do not allow causal inferences regarding the directions of the associations between the respective variables. Although both the JD-R model and the concept of health-oriented leadership have been studied longitudinally (e.g., Bakker & Demerouti, 2007; Franke et al., 2014), future studies should use a comprehensive longitudinal research design with at least two measurement points in order to validate the results of this thesis.

Second, all data used in the studies of this dissertation are based on self-report measures from only a single source (follower ratings). As discussed above, this may increase the risk of common method variance, causing an overestimation of the strength of the observed relationships. Even if it is challenging to assess work characteristics like social support or leadership styles objectively, future studies should resolve the potential problem of common method variance by considering also objective measures of leadership behavior and employee health. For example, the number of sick days or early retirement could be used as an additional objective measure of employee health. Moreover, future studies should apply multi-source research methods, in order to investigate the correspondence of leader and follower ratings of HoL and their respective impact on health outcomes.

Third, even though the response rates in the studies carried out ranged between satisfactory (32%) and good (51%), results may be biased by nonparticipation if the refusal of

participation was not randomly distributed. For example, previous studies focusing on response rate bias have shown that responders are slightly healthier than non-responders in large population-based health surveys (Søgaard, Selmer, Bjertness & Thelle, 2004; Vink et al., 2004). However, the results of the studies also indicate that the impact of these differences on prevalence rates is rather small, resulting in relatively unbiased results even for studies with only moderate response rates. Given the response rates obtained in the studies of this thesis, it is thus reasonable to assume that the results are not significantly biased by nonparticipation.

Finally, although the results indicate that the work characteristics examined are of central importance for the work context of police officers, there may be further potential demands and resources relevant to policing that were not addressed in this dissertation. Thus, the generalizability of the findings is limited to the constructs applied in the respective studies and also to the specific characteristics of police work. Therefore, no conclusions to other occupations or work in general can be drawn from the study results of this thesis.

Conclusion

High job demands and work-related stress are common in police work and associated with serious health impairments among officers. This thesis contributes to the knowledge on protective factors against job-related strain in policing, with a special focus on the role of leadership for health promotion. It comprises three empirical studies examining potential health-protective factors in this highly demanding and stressful occupation. It was shown that social support by colleagues, shared values and positive leadership climate constituted job resources that were negatively associated with the experience of depression and anxiety among police officers. These job resources also buffered the effect of job demands on the experience of emotional exhaustion. With regard to the role of leadership, it became evident that police leaders have a special responsibility for maintaining and promoting health of their staff

members. A health-oriented leadership style that comprises health-promoting attitudes and behaviors was associated with more well-being and lower levels of burnout, depression and musculoskeletal problems. Furthermore, health-oriented leadership promoted self-directed health behaviors among subordinates that were in turn associated with higher levels of well-being. The particular importance of leadership was further supported by the finding that health-oriented leadership, but not the availability of job rewards in terms of money, esteem, and career opportunities, buffered the health impairing effects of high work effort on burnout levels among police officers.

Taken together, the findings provide evidence that police leaders play a key role for creating a healthy working environment and for reducing job-related mental health issues among police officers by engaging in health-oriented leadership behaviors and attitudes. Besides offering important directions for future research, the findings of this dissertation point to several valuable directions for practical workplace health-promotion interventions and leadership development in policing

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Zusammenfassung

Andauernder Stress am Arbeitsplatz steht im Zusammenhang mit einer Reihe von negativen Auswirkungen für die Gesundheit von Arbeitnehmer*innen. Hohe Arbeitsanforderungen und einhergehender chronischer Stress bedingen ein erhöhtes Risiko für die Entwicklung von psychischen und körperlichen Gesundheitsbeschwerden. Ein häufiges Beschwerdebild in der Arbeitswelt ist das Burnout-Syndrom, welches sich vor dem Hintergrund anhaltender Arbeitsanforderungen, die die Bewältigungsmöglichkeiten von Individuen übersteigen, entwickeln kann. Burnout ist gekennzeichnet durch das Erleben von emotionaler Erschöpfung, Depersonalisation, Arbeitsüberdruss und Unzufriedenheit mit der eigenen Leistungserbringung. Eine besonders anfällige Berufsgruppe für das Entwickeln eines Burnout-Syndroms sind Polizeivollzugsbeamt*innen (PVB), die im Rahmen ihrer täglichen Arbeit mit hohen Arbeitsanforderungen und zahlreichen Stressoren konfrontiert sind. Burnout bei PVB ist mit schwerwiegenden gesundheitlichen Problemen sowie erheblichen Einschränkungen im sozialen Umfeld von PVB und in den Arbeitsabläufen in Polizeibehörden assoziiert. Da eine nicht unerhebliche Anzahl von Stressoren im Polizeiberuf kaum zu vermeiden sind, wie z.B. die Konfrontation mit physischer Gewalt oder schwierige Interaktionen mit Bürger*innen, ist die Förderung von Ressourcen im Arbeitskontext unabdingbar, um die Gesundheit von PVB zu schützen und deren Arbeitsfähigkeit zu erhalten. Ziel der vorliegenden Dissertation war die Identifikation von protektiven Faktoren gegen arbeitsbezogenes Belastungserleben und psychische Beschwerden im Polizeiberuf. Ein besonderer Fokus lag dabei auf dem positiven Einfluss von Führungsverhalten auf die Gesundheit von PVB.

Die Ergebnisse von Studie 1 deuten darauf hin, dass Arbeitsanforderungen (erfasst durch Arbeitsbelastung und negative Interaktionen mit Bürger*innen) mit einem höheren Maß von Depression und Angst bei PVB assoziiert sind. Dieser Zusammenhang wurde über

emotionale Erschöpfung, dem Kernsymptom von Burnout, mediiert. Das Vorhandensein von sozialer Unterstützung durch Kolleg*innen und einem positiven Führungsklima repräsentierten hingegen Arbeitsressourcen, die negativ mit dem Auftreten von Angst- und Depressionssymptomen bei PVB korreliert waren. Darüber hinaus vermochten die Arbeitsressourcen den Effekt von Arbeitsanforderungen auf das Erleben von emotionaler Erschöpfung abzumildern. Je mehr Ressourcen den PVB also am Arbeitsplatz zur Verfügung standen, desto geringer fiel der gesundheitsgefährdende Einfluss von hohen Arbeitsanforderungen aus.

In Studie 2 wurde das Konzept der gesundheitsförderlichen Führung auf den Kontext der Polizeiarbeit angewendet. Die Ergebnisse bestätigten den positiven Einfluss von einem gesundheitsförderlichen Führungsstil auf die Gesundheit von PVB. Dieser war positiv mit Wohlbefinden und geringeren Maßen an Burnout, Depression und muskuloskelettalen Beschwerden assoziiert. Zudem wurde ein positiver Zusammenhang zwischen gesundheitsförderlicher Führung und gesundheitsorientierter Selbstführung von PVB gefunden. Die Selbstführung von PVB stand wiederum mit einem gesteigerten Wohlbefinden in Verbindung. Polizeiliche Führungskräfte und ihr Führungsverhalten beeinflussen die Gesundheit von PVB demnach nicht nur durch die Gestaltung von Arbeitsbedingungen, sondern auch über die Förderung von gesundheitsbezogenen Verhaltensweisen der PVB selbst.

Das in der arbeitspsychologischen Gesundheitsforschung weitverbreitete Modell der beruflichen Gratifikationskrisen (ERI-Modell) besagt, dass die Verfügbarkeit von Belohnungen in Form von Geld, Anerkennung und Wertschätzung für Leistungen, sowie angemessenen Aufstiegschancen, den potenziell gesundheitsgefährdenden Einfluss von Arbeitsanforderungen entgegenwirken können. Führungsverhalten spielt auf der Belohnungsdimension des ERI-Modells hingegen nur eine untergeordnete Rolle. In Studie 3 wurde daher das ERI-Modell um das Konzept der gesundheitsförderlichen Führung erweitert und auf den Polizeikontext

angewendet. Die Ergebnisse zeigten zum einen, dass hohe Arbeitsanforderungen mit Burnout-Symptomen bei PVB assoziiert waren, und zum anderen, dass sowohl Belohnung als auch ein gesundheitsförderlicher Führungsstil mit einem geringeren Burnout-Erleben einhergingen. Jedoch pufferte lediglich gesundheitsförderliche Führung den Zusammenhang zwischen hohen Arbeitsanforderungen auf Burnout ab, nicht jedoch das Vorhandensein von Belohnung im Sinne des ERI-Modells.

Zusammenfassend deuten die Ergebnisse der drei Studien auf die besondere Bedeutung von Führungsverhalten für die Prävention von psychischer Belastung und Gesundheitsförderung in der Polizeiarbeit hin. PVB und deren Gesundheit scheinen insbesondere von einem Führungsstil zu profitieren, der neben einem gesundheitsförderlichen Verhalten auch von einer hohen Aufmerksamkeit für gesundheitliche Probleme am Arbeitsplatz und einem Gefühl von Wertschätzung für die Gesundheit von Mitarbeiter*innen gekennzeichnet ist. Die Ergebnisse der vorliegenden Dissertation liefern wertvolle Hinweise für die Konzeption und Gestaltung von Interventionen zur Gesundheitsförderung und Führungskräfteschulungen, die sich zum Ziel setzen, die Gesundheit von PVB vor dem Hintergrund eines herausfordernden und stressreichen Arbeitskontexts zu erhalten und zu fördern.

Curriculum Vitae

Der Lebenslauf ist in der Online-Version aus Gründen des Datenschutzes nicht enthalten.

List of Publications

Articles in Peer-Reviewed Journals (* indicate articles that are part of this thesis)

* Santa Maria, A., Wolter, C., Gusy, B., Kleiber, D., & Renneberg, B. (2020). Reducing work-related burnout among police officers: The impact of job rewards and health-oriented leadership. *The Police Journal*, *94*(3), 406-421. https://doi.org/10.1177/0032258X20946805 (First author supported the data collection, conducted the literature research, developed the research question, conceived the analysis, analyzed the data, and wrote the paper; due: predominately; contribution: 70%)

Boettcher, J., Santa Maria, A., & Renneberg, B. (2019). „Ich bin anderen in jeglicher Hinsicht unterlegen“: Kognitive Verhaltenstherapie für die ängstliche (vermeidende) Persönlichkeitsstörung. *PTT - Persönlichkeitsstörungen: Theorie und Therapie*, *23*(3), 177–188. https://doi.org/99.120110/ptt-23-3-177

Georg, S., Wolter, C., Santa Maria, A., Kleiber, D., & Renneberg, B. (2019). Welche Faktoren beeinflussen die psychische Gesundheit am Arbeitsplatz? Empirische Ergebnisse für Polizisten. *Prävention und Gesundheitsförderung, 14*, 384–39. https://doi.org/10.1007/s11553-019-00710-x

Georg, S., Wolter, C., Santa Maria, A., Kleiber, D., & Renneberg, B. (2019). Berufliche Gratifikationskrisen, arbeitsbezogene Erschöpfung und Frühberentung bei der Polizei. *Zeitschrift für Arbeits- und Organisationspsychologie A&O*, *63*(4), 191–203. https://doi.org/10.1026/0932-4089/a000309

* Santa Maria, A., Wolter, C., Gusy, B., Kleiber, D., & Renneberg, B. (2019). The impact of health-oriented leadership on police officers' physical health, burnout, depression and well-being. *Policing: A Journal of Policy and Practice,* 13(2), 186-200. https://doi.org/10.1093/police/pay067

(First author supported the data collection, conducted the literature research, developed the research question, conceived the analysis, analyzed the data, and wrote the paper; due: predominately; contribution: 70%)

Wolter, C., Santa Maria, A., Georg, S., Lesener, T., Gusy, B., Kleiber, D. & Renneberg, B. (2019). Relationships between effort-reward imbalance and work engagement in police officers: Taking a salutogenic perspective. *Journal of Public Health*, *29*, 177–186. https://doi.org/10.1007/s10389-019-01112-1

Wolter, C., Santa Maria, A., Gusy, B., Lesener, T., Kleiber, D., & Renneberg, B. (2019). Social support and work engagement in police work: The mediating role of work-privacy conflict and self-efficacy. *Policing: An International Journal*, *42*(6), 1022-1037. https://doi.org/10.1108/PIJPSM-10-2018-0154

Wolter, C., Santa Maria, A., Wörfel, F., Gusy, B., Lesener, T., Kleiber, D. & Renneberg, B. (2019). Job demands, job resources, and well-being in police officers – a resource-oriented approach. *Journal of Police and Criminal* Psychology*, 34*(1), 45-54. https://doi.org/10.1007/s11896-018-9265-1

Engel, S., Wörfel, F., Santa Maria, A., Wolter, C., Kleiber, D., & Renneberg, B. (2018). Leadership climate prevents emotional exhaustion in German police officers. *International Journal of Police Science & Management, 20*(3), 217-224. https://doi.org/10.1177/1461355718786295

* Santa Maria, A., Wörfel, F., Wolter, C., Gusy, B., Rotter, M., Stark, S., Kleiber, D. & Renneberg, B. (2018). The role of job demands and job resources in the development of emotional exhaustion, depression, and anxiety among police officers. *Police Quarterly, 21*(1), 109-134. https://doi.org/10.1177/1098611117743957

(First author conducted the literature research, developed the research question, conceived the analysis, analyzed the data, and wrote the paper; due: predominately; contribution: 60%)

Santa Maria, A., Reichert, F., Hummel, S. B., & Ehring, T. (2012). Effects of rumination on intrusive memories: Does processing mode matter? *Journal of Behavior Therapy and Experimental Psychiatry, 43,* 901-909. https://doi.org/10.1016/j.jbtep.2012.01.004

Book Chapters

Santa Maria, A., Reichert, F., & Renneberg, B. (2021). Zum Verhältnis von narzisstischer und selbstunsicherer Persönlichkeitsstörung. In Doering, S., Hartmann, H.-P., & Kernberg, O. F. (Eds.), *Narzissmus: Grundlagen, Störungsbilder, Therapie* (pp. 62-69). Schattauer.

Eigenständigkeitserklärung

Hiermit versichere ich, dass ich die vorliegende Arbeit selbstständig, ohne unerlaubte Hilfe verfasst habe und keine anderen als die angegebenen Quellen und Hilfsmittel verwendet sowie sämtliche Zitate kenntlich gemacht habe.

Die Arbeit ist in keinem früheren Promotionsverfahren eingereicht, angenommen oder abgelehnt worden.

Berlin, den 08.02.2022

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