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Occupational Stress, Burnout, and Social Support Among Nurses in Acute Inpatient Psychiatric Units in Germany

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Abstract

Background: Working in healthcare settings is stressful and associated with burnout, which negatively impacts employees and the quality and delivery of care. Germany's nursing sector is facing ongoing shortages worsened by job dissatisfaction, sickness absences, and turnover, which are linked to stress and burnout. As work demands and patterns of responses are contingent on occupational context, setting–specific investigations are necessary. However, there is a lack of research investigating stressors and burnout in specific healthcare settings in Germany, especially for inpatient psychiatric nurses whose work comes with unique challenges due to the acutely ill patient population and wider contextual influences.

Aim: To identify sources of occupational stress for nurses working in acute adult inpatient psychiatric settings in Germany, measure levels of stress, burnout, social support, and intention to leave, and explore relationships between these variables and individual factors.

Methods: Using an online cross-sectional survey, nurses working in acute inpatient psychiatric settings in Germany ($N = 221$) provided sociodemographic and job–related information and completed the Mental Health Professionals Stressor Scale (MHPSS), the Maslach Burnout Inventory–Human Services Survey (MBI-HSS), and the Copenhagen Psychosocial Questionnaire (COPSOQ-III social support and intention to leave subscales).

Results: Main sources of stress are related to workload and organizational factors, such as lack of staffing, and client–related issues. High burnout was present in 47.1% and 52.5% of nurses in the emotional exhaustion and depersonalization dimensions, respectively. Approximately 1 in 10 nurses expressed high intention to leave their current job or the profession. Increased sickness absences were correlated with high stress, burnout, and intention to leave, and low social support. Although there was a high perception of workplace social support available, there was no evidence found to support the hypothesis that social support moderates the stress–burnout relationship.

Conclusion: Focus should be put on modifying organizational aspects to lessen the impact of stressors, especially concerning staffing issues and workload. Reducing modifiable stressors and barriers while modernizing the nursing profession in Germany through proper education, roles, and recognition will increase the attractiveness of the profession, lower the risk of burnout, and help prevent further shortages.

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List of Abbreviations

COPSOQ-III	Copenhagen Psychosocial Questionnaire, Third Version
DP	depersonalization (also referred to as cynicism)
DRG	diagnosis-related group
EE	emotional exhaustion (also referred to as exhaustion)
FTE	fulltime equivalent
ICD	International Classification of Diseases
MBI-HSS	Maslach Burnout Inventory–Human Services Survey
MHPSS	Mental Health Professional Stress Scale
OECD	Organisation for Economic Co-operation and Development
PA	personal accomplishment (also referred to as efficacy)
PEPP	*Pauschalierendes Entgeltsystem Psychiatrie und Psychosomatik* (flat-rate remuneration system for psychiatry and psychosomatics)
PPP-RL	*Personalausstattung Psychiatrie und Psychosomatik-Richtlinie* (Psychiatry and Psychosomatics Staffing Guideline)
PsychPV	*Psychiatrie-Personalverordnung* (Psychiatry Staffing Ordinance)
PTSD	post-traumatic stress disorder
STS	secondary traumatic stress
UKE	*Universitätsklinikum Hamburg-Eppendorf* (University Medical Center Hamburg-Eppendorf)
WHO	World Health Organization

1. Introduction

In Germany, nursing comprises the largest occupational group in the health professional sector (Rafferty et al., 2019) with nearly 1.2 million nurses actively practicing as of 2019 (Organisation for Economic Co-operation and Development [OECD], 2019). Within inpatient health services, acute psychiatry is a dynamic workplace involving multidisciplinary teamwork to provide services for an acutely ill patient population with complicated diagnoses and patterns of dysfunction. Working in healthcare settings is known to be stressful and is linked not only with higher risk of burnout, but also poor physical and mental health outcomes, low job satisfaction, work absenteeism, and turnover (Maslach & Leiter, 2016; Ruotsalainen et al., 2014). Nursing in particular has many possible factors contributing to negative outcomes such as burnout and high sickness rates (Rohwer et al., 2020). Burnout, a context–specific and job–related syndrome characteristic of work groups (Maslach & Leiter, 2016), can negatively impact acute inpatient psychiatry in a variety of unique ways, ultimately affecting the quality and delivery of healthcare (Poghosyan et al., 2009; Rohwer et al., 2020).

Health professionals working in psychiatry and mental health around the globe have high rates of burnout (O'Connor et al., 2018) and in Germany, around 30% of nurses in particular suffer from burnout (Rafferty et al., 2019). There is a shortage of skilled nursing staff in Germany combined with an increased need to care for an aging population, and the lack of qualified nurses has been impacting Germany's healthcare system for a number of years (Reiff et al., 2020; Rohwer et al., 2020). The nursing profession includes a variety of subdisciplines, each with variations in work conditions and demands; thus when investigating the effects of work environment on individuals, it is important to take these subdisciplines and their particular characteristics and related work activities into account in order to effectively influence workplace health promotion (Fischer et al., 2020; Schulz et al., 2009). In comparison to other countries, there are very few German studies researching stress and burnout in specific nursing contexts such as psychiatry (Rohwer et al., 2020). Furthermore, in Germany, where there is a known shortage of skilled nursing staff (Rohwer et al., 2020), contributing factors for stress and burnout are influenced by wider contextual factors that have undergone various changes in the past years, such as renumeration, staffing ordinances (Fischer et al., 2020), and nursing education (Rafferty et al., 2019). In light of the ongoing nursing shortages, the changing contextual factors affecting the psychiatric inpatient sector, and the lack of research specific to this occupational context, further investigation into stressors, burnout, and related factors among nurses working in acute psychiatric units in Germany is warranted. Thus, this thesis aims to identify sources of stress in this work setting, as well as explore the presence of and relationships between stress, burnout, social support, intention to leave, and individual factors among psychiatric nurses in Germany.

2. Theoretical Background

2.1 Stress and Stressors

Stress has been extensively researched, resulting in various conceptualizations according to a range of theories and models. However, stress is generally understood as either demands from the environment or strain within an individual (Bartlett, 1998; Michie, 2002) and is commonly characterized as a stimulus, response, or relationship of a stimulus and response between an individual and their environment. As a stimulus, stress comprises aspects in the surrounding environment that are perceived as disturbing and cause strain as an individual reaction (Babatunde, 2013; Bartlett, 1998). On the other hand, Selye's (1950) generic definition describes stress as the body's nonspecific response to any demand including a set of reactions encompassing physiological processes (Bartlett, 1998; Fink, 2016; Lazarus & Folkman, 1984). However, models viewing stress as either a response or a stimulus are too limited in scope to adequately capture the complex stress process (Bartlett, 1998); hence these definitions have been further developed into conceptualizations of *stress* as the interaction or fit between individual and their environment (Colligan & Higgins, 2006). Models viewing stress as an interaction define *stressors* as elements in the environment with the potential to generate stress or strain in an individual; this includes chronic stressors which are longstanding and occur often, as well as acute stressors of short duration with an explicit onset (Kelloway & Day, 2005).

2.1.1 Transactional Theory of Psychological Stress

The interactional understanding of stress is key in Lazarus and Folkman's (1984; 1987) transactional theory of psychological stress which defines psychological stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing" (Lazarus & Folkman, 1984, p. 19). This theory involves the appraisal processes and coping frameworks individuals use to evaluate and deal with demands in their environment. First of all, appraisal is the evaluation of what is happening to a person from the standpoint of its implications and significance for personal wellbeing (Lazarus & Folkman, 1987) and comprises two nonsequential processes: primary and secondary appraisal. Firstly, primary appraisal deals with determining the relevance of environmental demands to personal wellbeing, whether it be harm (referring to harm or loss already experienced), threat (anticipation of harm), or challenge (potential for gain or mastery). Primary appraisal involves an individual's decisions on whether there is something to be gained or lost: if nothing is at stake, the event holds no relevance to personal wellbeing and creates no emotional reaction; however, if harm or gain is involved, an emotional reaction is likely to occur. Secondary appraisal deals with the evaluative judgments about whether any actions to improve what is happening can be taken and how much personal control one has over the outcomes. This is

important because if an individual sees possible risks in a situation but believes the harms are preventable, the perceived threat is likely to be minimal or absent (Lazarus & Folkman, 1987).

While primary appraisal determines the significance and meaning of a person–environment transaction to personal wellbeing, secondary appraisal comes into play when what is happening is deemed stressful to determine what can be done to cope with both the stressor and any resulting distress. Coping, then, is the dynamic process arising from the appraisal of harm, threat, or challenge which informs the appraisal processes and thus the emotional response, including transforming the troubled person–environment relationship (problem–focused coping) and regulating any distress (emotion–focused coping). Coping can be functional and adaptive, producing favourable outcomes, or dysfunctional and maladaptive, leading to unfavourable sequelae. Therefore, coping is a major factor in determining outcomes such as subjective wellbeing, social functioning, and health (Lazarus & Folkman, 1987). Furthermore, an individual's appraisal of and response to a stressor are linked to perceived coping resources, stressor characteristics, and one's own physiological, cultural, and psychological features (Colligan & Higgins, 2006). As a stressor can be appraised as positive or challenging, it can lead to positive stress (eustress) and stimulate mastery in a situation. On the other hand, when a stressor is appraised to be negative, it can lead to negative stress (distress); additionally, the intensity and duration of stress influence the stress experience. Both distress and eustress produce cognitive, behavioral, emotional, and physical responses which relate to an individual's coping capacity (Colligan & Higgins, 2006) and these responses can also be defined as strain (Kelloway & Day, 2005; Lazarus & Folkman, 1984). In summary, not all stressors affect all individuals in the same way and thereby strain is not inevitable, as individual perceptions, coping styles, and resources available influence the relationship between stressors, stress or strain, and outcomes (Kelloway & Day, 2005; Yaribeygi et al., 2017).

2.1.2 Workplace Stress and Stressors

In view of the interactional understanding of stress, *workplace stress* is "the change in one's physical or mental state in response to workplaces that pose an appraised challenge or threat to that employee" (Colligan & Higgins, 2006, p. 1). Thus an individual employee's perception is key in evaluating stress and stressors from demands in the occupational environment, as well as in determining any imbalances or issues in the relationship between person and environment (Bartlett, 1998). In general, there are five categories of workplace stressors found across a range of occupational fields: factors unique to the job, role in the organization, career development, interpersonal relationships at work, and the structure or climate of the organization (Colligan & Higgins, 2006; Murphy, 1995). When there is a conflict between the worker and the demands placed on them in any category, stress or strain can occur; one's perceived capacity to exercise control over the work environment and its demands play a role as well. The first category, factors

unique to the job, includes hours worked, level of autonomy, work pace, meaning, physical environment, social isolation, and workload. The second category is made up of the employee's role, such as their level of responsibility within management hierarchies and functions that need to be performed simultaneously, as well as role ambiguity, such as unclear responsibilities or performance expectations (Colligan & Higgins, 2006). Role conflict also fits into this category, including issues with contradictory roles in the workplace and disruptions in work–life balance, as the fulfillment of demands for a job may affect one's role in family or social activities (Babatunde, 2013). Career development, the third category of workplace stressors, is related to promotion, job security, and opportunities to advance. The fourth category includes stressors regarding interpersonal workplace relationships and group dynamics, such as problematic relationships with colleagues, harassment, threats, violence, and discrimination (Colligan & Higgins, 2006). This also involves bullying, including threats to professional status or person, isolating or preventing access to opportunities or information, overwork and unwarranted pressure, and destabilization through lack of recognition, meaningless tasks, and removal of responsibility (Colligan & Higgins, 2006; Rayner & Hoel, 1997). Finally, the fifth category involves the overarching organizational climate and structure, including communication patterns, management style, and job control, such as the ability to participate meaningfully in decision making (Colligan & Higgins, 2006; Murphy, 1995).

2.1.3 Outcomes Associated With Workplace Stress

Within the occupational context, four interrelated and non–discrete categories can be used to describe the consequences of job stress and unhealthy work environments: psychological, physical, behavioural, and organizational strain (Kelloway & Day, 2005). Firstly, psychological strain reactions involve a negative change in an individual's affect, such as depression, anxiety, and mood disturbances, or impaired cognition, including difficulties with concentration, memory, judgment, and decision making, often leading to mistakes. Secondly, physical strain can be shown in minor psychosomatic issues such as disturbances in sleep, infections, digestive issues, muscle tension, and headaches, as well as potentially life-threatening acute and chronic conditions including cardiovascular emergencies and diseases, musculoskeletal conditions, gastrointestinal issues, inflammatory disease, and suppressed immune function which can contribute to malignancies (Colligan & Higgins, 2006; Kelloway & Day, 2005; Quick & Henderson, 2016; Yaribeygi et al., 2017). In fact, a wide variety of health disorders are precipitated by severe or prolonged stress (Yaribeygi et al., 2017) as stress is linked to multiple leading causes of death globally (Quick & Henderson, 2016). Additionally, stressors at work are associated with an increased risk of mental disorders, which in turn is related to increased sickness absences (Duchaine et al., 2020). The third category, behavioural strain, can range from nervous habits or tics, avoidance, and reduced participation in activities due to decreased interest or as a way to cope with time constraints (Kelloway & Day, 2005). Furthermore, increased job stress can stimulate

unhealthy coping and behaviors such as alcohol and substance use, lack of exercise, and eating disorders (Colligan & Higgins, 2006; Kelloway & Day, 2005; Quick & Henderson, 2016). These effects can extend into personal lives as well, as violence and family problems are linked to job stress (Babatunde, 2013; Kelloway & Day, 2005). Lastly, the detrimental effects of workplace stress on employees, especially chronic stress, can also impact the organization negatively (Babatunde, 2013; Colligan & Higgins, 2006), known as organizational strain (Kelloway & Day, 2005). Individuals may experience anger, irritability, and difficulties in relationships with others in the workplace, leading to interpersonal conflict and impaired communication (Colligan & Higgins, 2006). Further effects of workplace stress on the organization include decreased productivity and performance, neglected responsibilities, higher rates of absenteeism and turnover, poor safety outcomes from accidents and mistakes, flawed decision making, and pervasive dysfunctional patterns such as burnout, all of which can have economic implications for the organization (Babatunde, 2013; Kelloway & Day, 2005; Quick & Henderson, 2016).

2.2 Burnout

Burnout is a significant worldwide phenomenon of the modern age involving difficulties between individuals and their work, and generally refers to employees losing their capacity over time to provide impactful contributions in their workplace (Schaufeli et al., 2009) as their engagement in a particular job erodes (Maslach et al., 2001) due to patterns of responses to stressors at work (Cordes & Dougherty, 1993).

2.2.1 Maslach's Theory of Burnout

Although there are various models and measures of burnout, one widely–used conceptualization in research stems from Maslach's investigations of burnout as a syndrome occurring among employees in human–oriented professions, which led to the development of the Maslach Burnout Inventory (MBI, Maslach & Jackson, 1981) to measure burnout. Further research using this conceptualization refined the definition of *burnout* into "a psychological syndrome emerging as a prolonged response to chronic interpersonal stressors on the job" (Maslach & Leiter, 2016, p. 103). Using this perspective, burnout is seen as a multidimensional syndrome consisting of three distinct, measurable components. The first dimension, *emotional exhaustion* (EE), refers to an overwhelming feeling of being "overextended and depleted of one's emotional and physical resources" (Maslach et al., 2001, p. 399). EE represents the basic stress response, or strain, in the individual and is the most obvious manifestation of the syndrome as it is the element most often used to describe the personal experience of burnout. This exhaustion experience includes a lack of energy required to efficiently make meaningful and ongoing contributions at a one's job (Maslach et al., 2001; Maslach & Leiter, 2016). *Depersonalization* (DP), also known as cynicism, refers to a "negative, callous or excessively detached response to various aspects of the job" (Maslach et al.,

2001, p. 399). This second dimension comprises interpersonal elements of burnout as it is related to issues in dealing with others and activities at work (Maslach & Leiter, 2016). DP is often manifested through viewing others, especially service recipients, as objects or in a dehumanized manner (Maslach & Jackson, 1981). *Personal accomplishment* (PA), the third component also referred to as efficacy, involves self-evaluations about the value and quality of personal contributions in a work environment (Maslach & Leiter, 2016). In burnout, this includes a tendency to perceive oneself negatively as personal accomplishments appear reduced, and involves feelings of incompetency or inefficacy, lack of achievement or progress, and deficiencies in work productivity. In summary, feeling overwhelming EE, experiencing DP, or perceiving reduced PA are indications of burnout (Maslach et al., 2001; Maslach & Jackson, 1981).

2.2.2 The Development of Burnout

The developmental process of burnout is not fully understood; certain models propose that burnout development is based upon diverse patterns in each dimension, whereas others propose either sequential or simultaneous development of EE, DP, and PA. Although the sequence of the development of burnout is still under contention, the three dimensions are considered to be related to each other (Maslach et al., 2001), especially as EE and DP have long been linked (Maslach & Jackson, 1981). The development of burnout can be understood in the framework of job stress conceptualizations, using the basis of understanding that imbalances can lead to strain alongside the view of stress as an interactional concept. Its development can then be shown in three stages: first, job stressors represent an imbalance between individual resources and work demands; next, individuals experience strain in the form of the emotional response of EE; finally, the individual copes defensively using changes in behavior and attitudes. More specifically, although EE is experienced individually, it has other emotional, cognitive, and behavioral sequelae because it can elicit a reaction in an individual to distance themselves from one's work as a way of coping with demand overload. For example, in a people–oriented work environment, this coping via distancing manifests as DP, as an employee tries to create a distance between self and others, ignoring the service recipient's qualities that make them unique and worth engaging, and thus decreasing interpersonal demand (Maslach et al., 2001; Maslach & Leiter, 2016). This sequential link from EE to DP is clearer than a subsequent link to reduced PA, which may develop simultaneously as a function of the other two components of burnout. On one hand, low PA may be a result of EE and DP: for example, if an employee is working in a situation involving ongoing, overwhelming demands that foster EE and DP, their sense of effectiveness may erode, especially in certain job settings (for example, it may be difficult to feel effective in a human–oriented profession if one is exhausted and indifferent towards their recipients). On the other hand, low PA may develop parallel to the other two components, perhaps prompted from a lack of relevant resources needed to

feel efficacious in one's job, whereas EE and DP may arise from high workload and interpersonal conflict (Maslach et al., 2001; Maslach & Leiter, 2016).

2.2.3 Factors Related to Burnout

A core aspect of Maslach's three dimensional model of burnout is that it places the stress experience of the individual within a wider social environment as it involves one's perceptions of self and others (Maslach & Leiter, 2016). Therefore, burnout is dependent upon context (Schaufeli et al., 2009), meaning that it is job–related and situation–specific as individual, situational, and organizational factors can increase employees' risk of experiencing burnout (Maslach & Leiter, 2016). The work that individuals do happens within a greater context of an organization with hierarchies, operating rules, resources, and space distribution practices that have an ongoing influence on those working within it. Thus these organizational processes and structures mould the emotional and cognitive relationship an individual has with their work (Maslach et al., 2001). Furthermore, larger cultural, social, legal, political, and economic forces influence the organizational context as well (Maslach et al., 2001; Maslach & Leiter, 2016). One way of understanding the relationship between the person and their job within the greater context of an organization and how this relates to the development of burnout and its sequelae can be through focusing on the fit, or degree of match, between the person and the organization, rather than separating personal and external factors. According to this view, if there is a match between the individual and their job, they are more likely to be engaged with their work; however, the bigger the gap or mismatch between the individual and their job, the greater the risk of burnout (Maslach et al., 2001; Maslach & Leiter, 2016). Thus burnout ensues through the ongoing mismatch between an individual and organizational factors, although differences in the outcomes of burnout may rest on personal factors such as level of tolerance and weighing of the importance of mismatch in specific domains (Maslach et al., 2001).

2.2.3.1 Organizational Factors. There are six key, interrelated domains involving situational correlates of work life that represent organizational risk factors for burnout: workload, control, reward, community, fairness, and values (Maslach et al., 2001; Maslach & Leiter, 2016). First, high workload depletes the capacity of employees to meet job demands. If work overload is chronic in a workplace and there is a consistent mismatch of demands to resources, employees are vulnerable to burnout (Maslach & Leiter, 2016; Schaufeli et al., 2009), especially EE (Maslach et al., 2001). These job demands may be quantitative, meaning too much work to do in too little time or time pressure, or qualitative, which include role conflict and role ambiguity. When conflicting demands at the job must be met, role conflict can arise; when there is a deficiency in the information needed to do a job well, role ambiguity occurs; both of which therefore represent an imbalance of demand and the employee's resources (Maslach et al., 2001). Additionally, role ambiguity may lend to a reduced PA, as when an employee is unsure of what they must do in order

to complete a job well, they are likely experience a sense of diminished efficacy (Cordes & Dougherty, 1993). Qualitative demands also include the severity of client problems or emotional work (Maslach et al., 2001). Lack of resources may include insufficient personnel, support, feedback, information, control, equipment or supplies, time, or space to do a job well. Furthermore, if employees not have the opportunity to restore balance between their capacities and demands through sufficient time and resources to rest and recover, this may exacerbate the exhausting effect of the demand–resource imbalance, thus increasing the risk of burnout (Maslach et al., 2001; Maslach & Leiter, 2016; Schaufeli et al., 2009).

Secondly, when employees lack the control to influence decisions concerning their work, access resources, or exert autonomy, there is an increase in their vulnerability to burnout (Maslach & Leiter, 2016). This mismatch between the control or authority individuals perceive is needed to do the job effectively and the control or authority they actually have can cause distress and feelings of reduced PA (Maslach et al., 2001). This also comes into play when individuals feel overwhelmed because they have a level of responsibility that they perceive exceeds their ability or authority, which lead to issues in both the control and workload domains (Maslach et al., 2001). Moreover, a lack of control can be connected to a lack of opportunities for participation in a work setting. In this, employees may feel devalued or dehumanized, which can contribute to how employees interact with service recipients. Thus, impersonal organizational cultures can translate into DP, as the employee may adopt an impersonal or dehumanizing style of interacting with clients (Cordes & Dougherty, 1993). The third aspect, reward, involves the role that reinforcement has in shaping behaviors. When there is insufficient recognition and reward, whether it be financial, social, or rewards in the institution, workers are devalued, which can lead to feelings of reduced PA and thus raise the risk of burnout (Maslach et al., 2001; Maslach & Leiter, 2016). Furthermore, a dearth in intrinsic rewards, such as personal pride in a job well done, is associated with a mismatch in this domain (Maslach et al., 2001). Next, in regard to the fourth aspect of community, when social relationships are not supportive, lack trust, or involve unresolved conflict, the risk for EE, DP and PA increases alongside the risk of job disengagement (Maslach & Leiter, 2016). This happens when individuals lack positive connection with others in their workplace and therefore lose the function of social support to reaffirm social membership in shared values, provide instrumental help, and allow for emotional exchange (Maslach et al., 2001). Jobs that isolate individuals from one another or make social contact impersonal can heighten the mismatch between individual and organization; whereas chronic unresolved conflict is considered most destructive of community as it also results in a reduced likelihood for social support due to negative feelings and behaviors of coworkers (Maslach et al., 2001).

The fifth aspect involves how people perceive decisions at work to be fair and equitable. People use their experiences of how they are treated during the decision–making process and the perceived quality of the procedures to gauge their standing in their workplace community. When

employees feel as though they are not being treated appropriately or respectfully, they are likely to become emotionally upset or exhausted (EE), followed by feeling cynical (DP), angry, or hostile about the workplace (Maslach et al., 2001; Maslach & Leiter, 2016). Unfairness can result from inequity of workload or pay, cheating, and inappropriate handling of promotions or evaluations, as well as when those with a grievance or dispute are not given a voice (Maslach et al., 2001). Finally, values, the last domain, involves the ideals, expectations, and goals that first attract an employee to a particular job and serve as a source of motivation in the workplace. A conflict in personal versus organizational values causes a gap or imbalance and often leads to a trade-off between the work an employee wants to do and the work they must do, ultimately contributing to higher burnout (Maslach & Leiter, 2016). This mismatch between values can also stem from ethical differences or incongruence between personal career aspirations and the organization's practices or values (Maslach et al., 2001). Additionally, conflicting organizational values can be a factor in burnout, for example if an employee is trapped between cost containment measures and providing quality services to recipients (Maslach et al., 2001). This can lead to decreased commitment to the organization and widen the gap between personal and organizational values (Schaufeli et al., 2009).

      2.2.3.2 Individual Factors. Each individual brings their own unique qualities to the person–work relationship. However, personal factors have been found to be less strongly related to burnout than external situational or environmental factors in the workplace (Leiter & Maslach, 1988; Maslach et al., 2001). Personal factors known to be related to burnout include demographic variables, personality and cultural characteristics, and personal work–related attitudes (Maslach et al., 2001). Age is related to burnout, as burnout is more often reported among younger employees, especially as older individuals often have a higher sense of PA. However, age is often confounded with work experience, possible adaptation of expectations to fit reality, and the problem of survival bias, as the burnt-out quit their jobs whereas those with lower levels of burnout remain (Cordes & Dougherty, 1993; Maslach et al., 2001; Maslach & Jackson, 1981).

      Studies are inconsistent in their consensus of the relationship between gender and burnout, although women often experience more EE whereas men experience more DP (Maslach et al., 2001). Higher levels of education may be associated with higher burnout, although evidence on this is unclear and education is also often confounded with variables such as occupation, status, expectations, and responsibilities (Maslach et al., 2001) and the fact that higher education is associated with higher EE, but lower DP and higher PA (Maslach & Jackson, 1981). In regard to personality characteristics, stress–prone individuals with low levels of hardiness and self-esteem, an avoidant or passive style of coping, or an external locus of control are more vulnerable to high burnout (Maslach et al., 2001). Concerning job attitudes, high expectations or idealism may be a risk factor for burnout if it leads to an imbalance in efforts versus rewards. Additionally, there is little empirical evidence on the relationship between ethnicity and burnout (Maslach et al., 2001). Although experiencing racial and ethnic microaggressions (Chisholm et al., 2021), discrimination,

biases, or lack of inclusion can contribute to burnout (Lawrence et al., 2021), working in ethnically diverse settings may have a protective effect against EE and DP, especially for minority healthcare providers (Douglas et al., 2021). Cultural characteristics that influence burnout may be related to differences in values such as achievement orientation, social acceptability of expressed cynicism, and attitudes toward providing extreme answers in self-report burnout measures (Maslach et al., 2001). Furthermore, the multidimensional conceptualization of burnout is so far primarily limited to modernized and industrialized urban societies. Whereas ethnocentric concepts such as social fragmentation and individualism may affect the experience and expression of PA and DP due to differences in distinctions between "me" and "you", the personal experience of EE appears to be a universal phenomenon occurring throughout history by various cultures (Schaufeli, 2017).

2.2.4 Outcomes Associated With Burnout

Burnout can be detrimental for individuals, staff groups, service recipients, and the organizations and institutions in which they operate and interact (Maslach & Jackson, 1981). In general, many negative consequences of burnout go hand-in-hand with the psychological, physical, behavioural, and organizational impacts that job stress and unhealthy work environments have on individuals and organizations. In particular, burnout increases job withdrawal, which presents itself in various forms such as absenteeism through sickness leaves or increased breaks while at work, higher intention to leave a job, and employee turnover. Furthermore, burnout is linked to decreases in job satisfaction, organizational commitment, and quantity and quality of work performance (Cordes & Dougherty, 1993; Maslach et al., 2001; Maslach & Jackson, 1981; Maslach & Leiter, 2016). Additionally, burnout can have a negative influence on interpersonal relationships, as social relationships and interactions are essential in burnout. Conflicts between work colleagues can occur and disrupt job tasks; these negative elements tend to have a "contagious" aspect as they may spread through interactions both at and outside of work; thus burnout is characteristic of workgroups and not only an individual syndrome (Maslach et al., 2001; Maslach & Leiter, 2016). Burnout can also lead to social withdrawal at and outside of work (Maslach & Jackson, 1981), negative attitudes toward work and others, moodiness or intolerance during social interactions, and an inability to remove oneself from one's professional role when outside of work (Cordes & Dougherty, 1993). Moreover, DP is predictive of turnover and is linked to negative attitudes, irritability, and withdrawal, often resulting in poor quality of social relationships, job dissatisfaction, and poor performance. Low PA can lead one to feeling unable to cope and low morale and self-esteem (Maslach et al., 2001; Maslach & Leiter, 2016).

Moreover, burnout has a negative impact on the health and wellbeing of individuals. In particular, EE, which represents the individual stress response, is predicative of stress–related health outcomes as individuals experiencing EE may feel worn out, depleted, helpless, or low energy (Maslach et al., 2001; Maslach & Leiter, 2016). Further deleterious effects on physical

health parallel the physiological correlates of chronic stress, including sleep disturbances, susceptibility to common viruses, gastrointestinal disorders, hypertension and other cardiovascular issues, and headaches as well as musculoskeletal pain, chronic fatigue, and muscle tension (Cordes & Dougherty, 1993; Maslach & Leiter, 2016). Burnout and mental disorders such as anxiety, and depression are linked, as individuals with high neuroticism are more vulnerable to burnout (Maslach et al., 2001). Good mental health is connected to better ability to cope with chronic stressors, whereas poor mental health may lead to inadequate or maladaptive coping—for example, those experiencing burnout may cope using avoidance behaviors at work or turn to substance use which can affect both work attendance and performance and spill over into personal life (Cordes & Dougherty, 1993; Maslach et al., 2001).

2.3 The Moderating Role of Social Support in Stress and Burnout

When viewing occupational stressors and their accumulation leading to outcomes such as burnout, there are also potential factors that can influence this process. Carson and Kuipers' (1998) stress model conceptualizes the stress process in three levels: stressors, general stress outcomes, and moderating or buffering factors. In general, stressors can come from three major external factors: specific occupational factors, cumulative everyday hassles, and major life events. Stress outcomes can reflect a variety of sequelae and can be positive or negative in the areas of physical and mental health and wellbeing and job satisfaction; in this model, one main stress outcome is burnout. This relationship between stressors and outcomes like burnout is complex and moderated by several buffering factors that can have a protective element against the effects of the stress process on individuals. These moderating factors include contextual aspects like social support, alongside individual characteristics such as high self-esteem, hardiness and adaptive coping skills, emotional stability, mastery and personal control, and good physiological release mechanisms (Carson et al., 1999; Carson & Kuipers, 1998; Fothergill et al., 2004).

Within the context of the workplace, social support is generally related to better health outcomes, although its role in the stress–outcome relationship may be complicated (Cordes & Dougherty, 1993). There are two main hypotheses concerning the process of how social support impacts health. One is that social support has a main or direct effect on overall wellbeing, as it is positively related to psychological and physical health and wellbeing, regardless of the presence of stressors. The other hypothesis views social support as a buffer or moderator between job–related stress predicting outcomes such as burnout, as social support may aid individuals in appraising a situation as less potentially harmful or perceiving that others will provide needed resources (S. Cohen & Wills, 1985; Cordes & Dougherty, 1993) and can be seen as a way of adaptive coping (S. Cohen & McKay, 1984; Kirmeyer & Dougherty, 1988). According to this moderation hypothesis, the relationship between job stressors and burnout will be stronger when support is low than when support is high (S. Cohen & McKay, 1984; Maslach et al., 2001).

As social support is part of the community domain of organizational factors of burnout (Maslach et al., 2001), a strong body of evidence shows that a lack of social support is linked to burnout (Cordes & Dougherty, 1993; Dall'Ora et al., 2020; López-López et al., 2019; Maslach & Leiter, 2016; Melchior et al., 1997; Velando-Soriano et al., 2020). Both supervisors and coworkers play an interrelated role in promoting a culture of workplace support between colleagues within a working environment (Van der Heijden et al., 2010). However, the exact relationship between social support and burnout is complicated, as further research demonstrates that social support may have differing consequences according to burnout dimension. A meta-analysis of the correlates of burnout showed that in the human services sector, coworker support is strongly related to both EE and DP, while supervisory support is more strongly related to the former (R. T. Lee & Ashforth, 1996). Supervisor and coworker support usually increase feelings of occupational competence and provides chances to advance capabilities (Van Der Heijden, 2003) and alleviates the burnout risk by increasing PA (Leiter, 1988, 1990). Furthermore, although one study showed that a lack of organizational support was related to higher DP (Leiter, 1990), the same author found in another study that the presence of professional support had a positive relationship with EE (Leiter, 1988).

Inconsistent relationships between social support, stress, and burnout reflect the complex nature of interpersonal interactions amongst employees and supervisors in the workplace. Social support can be instrumental or emotional, multidimensional, informal and formal, and can alleviate or aggravate stress and strain (Boren, 2014; Leiter, 1988). On one hand, informal interactions between colleagues can be positive and helpful, providing a way of coping, relaxing, and bringing feelings of community, belonging and shared values; whereas formal interactions can be a source of reward through recognition and feedback (Leiter, 1988; Maslach et al., 2001). Interactions also provide tangible or instrumental support as a resource in the midst of job demands or an increased perception of help available, including exchange of information or advice (Leiter, 1988). Formal support in the workplace can also help reduce negative perceptions of the workplace and cut down on adverse work–related events (López-López et al., 2019). On the other hand, negative social encounters can lead to feeling emotionally drained and create the need to distance self from job (Maslach & Leiter, 2016). Interactions with coworkers can be sources of stress (Leiter, 1988) through conflict or disagreement, thus causing imbalances between the individual and the resources, community, and values domains (Maslach et al., 2001; Maslach & Leiter, 2016). Furthermore, in contrast to social interactions focused on problem solving, interactions that dwell on an excessively negative view of issues (co-rumination) can reduce the beneficial effects of support on burnout and stress (Boren, 2014). Informal social contact can be a maladaptive way of coping by avoiding interactions with clients or other stressful situations (Leiter, 1988). Moreover, social support can contribute to distress if the support received is perceived to be inadequate or unhelpful (Button, 2008) and a lack of positive social interactions can be disheartening (Maslach &

Leiter, 2016). Perceiving the organization or environment as unsupportive can represent a clash of values and lower satisfaction, engagement, and trust (Edward et al., 2017; Hylén et al., 2018).

2.4 Stress, Burnout, and Social Support in the Occupational Context of Psychiatric Nursing

Professionals working in mental healthcare in general have higher levels of stress and burnout than the general population (Maslach & Leiter, 2016; Rössler, 2012) which "manifests itself in a variable, complex, and inconsistent manner, rather than as a unitary phenomenon" (Paris & Hoge, 2010, n.p.). Additionally, when evaluating stressors and outcomes, it is important to note that negative responses often stem from the overall complexity of the work, rather than specific tasks (Konstantinos & Christina, 2008). Research entailing the experience of nurses has shown that nursing is a stressful occupation (Cordes & Dougherty, 1993; Konstantinos & Christina, 2008) requiring teamwork combined with skillful emotional and physical labour to provide constant care (McVicar, 2003) often through direct contact with patients (Madathil et al., 2014). In addition, frequent interruptions and disruptions of activities due to various demands in nursing can lead to the need to multitask, which takes additional effort and can lead to compromises or rationing in care due to time pressure (Rohwer et al., 2020). Daily practice of psychiatric nurses shows differences to other nursing specialities and professions due to the holistic care provided in the biopsychosocial domains of the patient's life, as well as a continuous need to respond to patient behaviors and pathologies not normally present in other areas of medicine, which represent additional risk factors for stress and burnout (López-López et al., 2019). Furthermore, nurses working on psychiatric inpatient wards often feel pressure from an intense and chaotic environment where they must manage involuntary admissions, crises, aggression, and violence while engaging therapeutically with acutely ill, complex patient profiles (Abdalrahim, 2013; Wyder et al., 2017).

2.4.1 Stress, Stressors, and Related Factors in Psychiatric Nursing

Overall, studies investigating occupational stress levels and associated factors for psychiatric nurses provide differing results in various countries ranging from low to high levels of stress (for example, Chalder & Nolan, 2000; Dawood et al., 2017; Elsayed et al., 2017; Jenkins & Elliott, 2004; Masa'Deh et al., 2016; McTiernan & McDonald, 2015) and emphasize the importance of setting–specific investigations. In a review of factors influencing stress for nurses working on psychiatric units, main stressors were grouped into the following categories: difficulties from interprofessional relationships, clinical leadership of managers, patient stressors, and organisational issues including administrative demands, dealing with change, organisational structures, and workplace cultural environment (Konstantinos & Christina, 2008). Further studies include other stressors common to psychiatric nursing: lack of resources including staffing and time, role ambiguity or conflict, organizational processes, and high workload, including high number and intensity of tasks in the face of time constraints (Chalder & Nolan, 2000; Foster et al.,

2020; McTiernan & McDonald, 2015; Richter, 2014; Sorgaard et al., 2010; Van Bogaert et al., 2013; Wyder et al., 2017). Furthermore, a review of mental health nursing found that higher stress was connected to less experienced nurses due to a lack of recognition within the multidisciplinary team (Konstantinos & Christina, 2008).

Although for some psychiatric nurses, client issues are not a major stressor compared to lack of staffing and organisational structures and processes (McTiernan & McDonald, 2015), other studies specifically name dealing with patient interactions including difficult patient behaviors, violence, and aggression, as a main stressor (Foster et al., 2020; Hasan et al., 2018; Hylén et al., 2018; Jenkins & Elliott, 2004; Kipping, 2000; Roets et al., 2018; Van Bogaert et al., 2013). Psychiatric nurses deal with high risk, high conflict, hostile situations requiring quick decision making (Hylén et al., 2018) which can produce high levels of stress especially in cases where there is inadequate resources or skillsets (López-López et al., 2019). This can lead to emotional drain and feelings of helplessness, frustration, and a lack of control, thus initiating the burnout process often through a need to distance self from work (Maslach & Leiter, 2016; Melchior et al., 1997). Psychiatric nurses are at increased risk of experiencing aggression in the workplace—whether from clients or coworkers; whether overt or passive—which is harmful and has a negative psychological effect on the nurses and impacts both multidisciplinary team functioning and patient outcomes (Roets et al., 2018). Aggressive patient behaviors are associated with stress during an admission, low staffing numbers, lack of qualified staff and large amount of beds (Nienaber et al., 2018). For closed inpatient psychiatric wards in particular, the locked doors are associated with further stressors such as increased aggression, reduced patient satisfaction with treatment, and more severe psychiatric symptomology (Van Der Merwe et al., 2009). Furthermore, ethical dilemmas occurring when dealing with extreme behaviors can be a source of stress (Foster et al., 2019; Hylén et al., 2018) and nurses may experience added moral distress due to these dilemmas and close proximity to patient suffering (Jansen et al., 2020).

Regarding nursing stress studies from Germany, most involved nurses from a variety of settings, whereas only a handful of recent studies involved inpatient psychiatry specifically. An international review article found that for German nurses, work environment factors such as interpersonal difficulties were associated with distress, and linked stress levels with age of the nurse, presence of trainees, and the size of the institution. Furthermore, increased work stress was associated with a poor locus of control (Lambert & Lambert, 2001). A multicountry European study found that Germany was one of the countries with the worst performance in regard to patient:nurse ratios at 10:1 (Aiken et al., 2013) and many nurses perceived that staffing levels were insufficient to provide quality care (Rafferty et al., 2019). Moreover, workload for German nurses has increased in the past decades (Löhr et al., 2015). For psychiatric nurses, this stems from the *Pauschalierendes Entgeltsystem Psychiatrie und Psychosomatik* (PEPP), a flat–rate remuneration system in psychiatry and psychosomatics (Schulz et al., 2009). The PEPP is related to a

simultaneous increase in patients admitted and reduction in average length of stay, contributing to high patient turnover in psychiatric hospitals. This is further compounded by the fact that the system aims to treat patients as cost–intensively as possible, meaning shorter stays on acute wards, alongside a deep gap and fragmentation between inpatient and outpatient services (Schwarz et al., 2020). This also coincided with a decrease in fulltime nurses, meaning more patient admissions but shorter length of stay per fulltime equivalent (FTE) nurse (Rafferty et al., 2019). Ultimately, this results in increased workload for nurses, including more documentation and discharge work, as higher amounts of acutely ill patients repeatedly cycle through inpatient units (Fischer et al., 2020; Iseringhausen, 2010; Krachler et al., 2021).

Further regarding workload, increased work stress in German nurses was associated with high quantitative demands and particularly emotional demands for psychiatric nurses (Fischer et al., 2020). Concerning quantitative demands, in comparison with other European countries, German nurses are contributing much of their time to tasks below their skill level and non-nursing care (Bruyneel et al., 2013). This applies to psychiatry as well, where a vast amount of time is spent on nonpatient–related tasks, especially organizational and administrative tasks related to admission, transfer, and discharge, as well as non-nursing activities such as opening and closing locked unit doors, fulfilling minor patient requests, tidying and cleaning tasks, and organization of tasks within the team—all of which ultimately take away from time to spend in direct, therapeutically relevant patient care (Hoffmann & Rieger, 2010). Furthermore, in German psychiatric care, staffing levels only fulfill 88.9% of requirements for nursing (Löhr et al., 2015; Löhr & Sauter, 2020). This lack of staffing was also evidenced in a study investigating the level of staffing and conflict in German psychiatric wards, where it was found that the participating wards had lower nurse staffing levels compared to similarly sized acute wards in other studies, and that conflict events were associated with both low staffing levels and large ward size with higher numbers of treatment places (Nienaber et al., 2018).

Other studies and reviews of nursing in various healthcare sectors in Germany including psychiatry cite stressors to include organizational structure and processes (Bär & Starystach, 2018), patients (Moosler et al., 2010; Richter, 2014), lack of resources (Moosler et al., 2010), time constraints, lack of pay (Rohwer et al., 2020), role–related stressors (Angermeyer et al., 2006), conflicts with staff (Angermeyer et al., 2006; Moosler et al., 2010), and interruptions and disruption during tasks and shift work (Moosler et al., 2010; Rohwer et al., 2020). Furthermore, German nurses are negatively affected by the impact that high workload and low resources have on the care they provide, such as decreases in quality of care or the need to ration care (Moosler et al., 2010). This parallels the dissonance that nurses experience when organizational pressures inhibit them from performing according to their own expectations (Hylén et al., 2018; Wyder et al., 2017).

2.4.2 Burnout and Related Factors in the Context of Psychiatric Nursing

In mental health settings, the job–related stressors common to most organizations such as workload, time pressure, and role conflicts are highly correlated with burnout. On top of this, factors associated with emotion–work, such as suppressing emotions or using empathy, account for further variations in burnout levels as emotional challenges of working in mental health often require ongoing, intense levels of interpersonal and emotional contact which can be both rewarding and stressful (Maslach et al., 2001; Maslach & Leiter, 2016). Psychiatric nurses have a high risk of burnout due to high frequency and intensity of interpersonal contact and involvement with patients; additionally, they must deal with challenging behaviors and emotional demands on a regular basis (Bakker et al., 2000; Cordes & Dougherty, 1993; Melchior et al., 1997; Sullivan, 1993). Although psychiatric nurses are considered to be at higher risk of burnout due to exposure to the stressors common to nursing as well as dealing with a challenging, disturbed patient group (Kilfedder et al., 2001), there is conflicting evidence involving levels of stress and burnout in psychiatric nurses as compared to other specialities and professions (Konstantinos & Christina, 2008). In a recent systematic review and meta-analysis of burnout and related factors among mental health nurses, there were overall moderate levels of EE, DP, and PA indicated in the literature (López-López et al., 2019). Nonetheless, there were wide variations in both levels of burnout per dimension and prevalence rates of burnout among the samples in the studies examined. The meta-analytic prevalence estimations for the presence of high burnout among psychiatric nurses were 25% for EE, 15% for DP, and 22% for low PA. The results of this review and meta-analysis show that mental health nurses in particular are mostly affected by EE and low PA in their burnout experiences (López-López et al., 2019). In comparison, a recent review and meta-analysis of burnout among mental health professionals in general found that the overall estimated prevalence of burnout was 40% in the EE dimension, 22% for DP, and 19% for low PA. Generally, mental health professionals had high levels of EE, moderate levels of DP, but still have reasonable levels of PA (O'Connor et al., 2018).

Regarding factors associated with burnout, Lim et al.'s (2010) meta-analysis on individual and work–related factors influencing burnout in mental health professionals found that overall, there was a lack of consensus on a number of these factors and their influences; however, age was a significant indicator for burnout. Furthermore, higher education indicated higher burnout, whereas more years of work experience indicated a lower vulnerability to burnout (Lim et al., 2010). O'Connor et al.'s (2018) more recent review on burnout among mental health professionals added workload and relationships at work, stigma related to the profession, demanding therapeutic relationships, threats of violence from patients, and patient suicide as further determinants of burnout. Furthermore, a metanalysis of burnout correlates among psychiatric nurses by Melchior et al. (1997) found that burnout had negative associations with job satisfaction, staff support, and

involvement in the organization, and positive associations with role conflict. The authors organized risk factors into three categories: patient group (aggressive or suicidal), inequity in the exchange process between patient and nurse, and unrealistic expectations nurses had of their patient's potential for successful rehabilitation. Role ambiguity, workload, age, hardiness, active coping, and social support were all found to be correlated to burnout (Melchior et al., 1997). According to the review by López-López et al. (2019), factors contributing to burnout in psychiatric nurses include work overload, work–related stress, moral distress, seniority, male gender, and workplace aggression. Moreover, challenging relationships in multidisciplinary teams and legal frameworks can also increase burnout risk (Rössler, 2012).

Further specific factors influencing burnout include high patient:nurse ratios (Aiken et al., 2002; Hanrahan et al., 2010) and higher numbers of patients in general (Hill et al., 2006), patients' families (Maslach & Leiter, 2016), inadequate preparation, threats to personal wellbeing (Edward et al., 2017), lack of autonomy (Edward et al., 2017; Madathil et al., 2014), role ambiguity, hardiness (Kilfedder et al., 2001), leadership style (Hanrahan et al., 2010; Madathil et al., 2014), and nurse–physician conflicts (Hanrahan et al., 2010). Moreover, higher amounts of direct patient contact raise the risk of burnout (Vargas et al., 2014; Velando-Soriano et al., 2020). Furthermore, psychiatric nurses often receive negative feedback from patients, which may be direct, in the form of aggression or other challenging behaviors, or indirect as some patients have poor prognoses for rehabilitation which may contribute to DP, reduced PA, and effort–reward imbalance (Bakker et al., 2000; Cronin-Stubbs & Brophy, 1985; Hylén et al., 2018; Reid et al., 1999; Sullivan, 1993). As many interventions and outcomes in psychiatric care are implemented through therapeutic interaction, the positive impact of care is often less tangible than in other healthcare sectors (Kipping, 2000) which, along with working with the same patients rotating through acute services, can lead to reduced feelings of PA and reward (Hughes & Umeh, 2005). On the other hand, alleviating factors for burnout in mental health nursing include job stability and satisfaction, feeling valued and treated fairly at work, role clarity and autonomy, positive affectivity, emotional intelligence, and social support and feedback, including institutional support through clinical supervision (López-López et al., 2019; O'Connor et al., 2018) alongside realistic expectations for patient rehabilitation and recovery (Melchior et al., 1997).

Studies examining burnout and related factors among German nurses and other healthcare professionals have varying results. While a past international survey of nurses found that around 15% of nurses in Germany had high EE (Aiken et al., 2001); one decade later, another multicountry study showed that rates of burnout had risen to 30% (Heinen et al., 2013) which coincides with workload increasing by 32% in the years 1998 to 2011 (Löhr et al., 2015). Germany's high patient:nurse ratios (Aiken et al., 2013) are associated with low perceived quality of care, burnout, job dissatisfaction, and higher risk of patient mortality (Aiken et al., 2002; Rafferty et al., 2019). Among general nurses in Germany, stressors related to EE and burnout include demanding

patients, high time pressure and workload, unfavourable environmental conditions, and issues with shift schedules; whereas a lack of resources that predicted job disengagement included deficiencies in the areas of feedback, job control, task variety, supervisor support, rewards, and participation in decision making (Demerouti et al., 2000). According to Moosler et al.'s (2010) study of German nurses, there was moderate to low EE and DP. Sources of stress included organizational factors such as work interruptions and unfavorable work processes, high workload with low resources and its consequences on care, shift work and long hours, difficult or dissatisfied patients, and a lack of doctors or poor multidisciplinary teamwork with doctors. Nurses naming high organisational stressors had significantly lower PA and higher EE (Moosler et al., 2010). Furthermore, German health professionals from a variety of settings cited verbal aggression, ranging from verbal abuse to threats to noncompliant behavior, as a relevant stressor, with contributing factors including patient nonsatisfaction with treatment, organizational problems, and mental disorders (Richter, 2014). Another German nursing study showed that an imbalance between high extrinsic efforts, such as job demands, and low extrinsic rewards, like promotion opportunities, are related to higher EE and DP; furthermore, these nurses suffered from burnout, especially EE (Bakker et al., 2000). In contrast, in a study of community mental health professionals in Berlin, burnout scores were low and male gender was related to lower burnout (Priebe et al., 2005).

Few studies have investigated burnout among nurses working in the specific context of inpatient psychiatry in Germany in particular and show differing results. Among nursing staff in various psychiatric facilities across Germany, one fourth of participants showed high burnout, while 22.7% of the sample had high EE, 28.9% had high DP, and 18.8% had low PA; additionally, female gender was associated with higher EE (Angermeyer et al., 2006). In comparison, 11.5% of nurses in psychiatric hospitals in Bavaria had increased burnout scores, which correlated negatively with job satisfaction and social support (Meßenzehl et al., 2006). However, in a later study, 23.5% of psychiatric nurses showed burnout–related risk patterns and had lower job commitment than medical nurses (Voltmer et al., 2013). In a recent study by Fischer et al. (2020) comparing the psychosocial working conditions and burnout in medical versus psychiatric nursing, 50% of the participating nurses in total reported at least a moderate level of burnout. Psychiatric nurses were found to have a higher degree of emotional demands which were the strongest predictor of burnout in this group; however, leadership, age, gender, and social support were not significantly related to burnout. Furthermore, factors alleviating the presence of burnout included role clarity, clear role distribution, professional autonomy, room to maneuver, and social support (Fischer et al., 2020).

2.4.3 Outcomes of Stress and Burnout in the Context of Psychiatric Nursing

In general, inpatient mental health care should be focused on person–centered recovery, involving balancing patients' goals and priorities with expectations and responsibilities in the organization, professional community, and legal and social systems, all of which are influenced by

factors such as personal qualities, professional skills, and environmental factors (Wyder et al., 2017). Moreover, mental healthcare focused on recovery by enhancing resilience and patient–centredness is underpinned by approaches where control is not placed in the hands of the professionals, but rather kept in the hands of the patients (Meehan et al., 2008). In light of this, stressed and burnt-out service providers can lead to reduced quality of care in a variety of ways (Maslach & Leiter, 2016).

   2.4.3.1 Negative Patient Outcomes. Nurse burnout is associated with increased mistakes (López-López et al., 2019), lowered productivity (O'Connor et al., 2018), decreased safety (Salyers et al., 2017) and reduced patient outcomes and satisfaction (Aiken et al., 2001; Carthon et al., 2021), the latter of which has its own negative impact on patient health as well (López-López et al., 2019; Salyers et al., 2017). Furthermore, although empathy is key in the provider–service user relationship, quality care, and improved clinical outcomes, burnout can reduce empathy. Empathy also creates vulnerability to stress and related sequelae such as EE and compassion fatigue (Salyers et al., 2015; Wilkinson et al., 2017). For example, burnout can lead to decreased investment in the therapeutic relationship as care providers experiencing EE tend to respond with DP instead of genuine empathy (Bakker et al., 2000), leading to negative attitudes towards patients, which has detrimental impacts on the patient in the areas of communication, therapeutic alliances, and consumer engagement (Salyers et al., 2015). In the midst of the emotionally intense situations with clear power differentials often occurring in inpatient psychiatric care, nurses are expected to establish effective therapeutic relationships and collaborative partnerships with patients, which involves emotional labour including empathy, openness, trust, and compassion, through use of self as a therapeutic tool (Edward et al., 2017; Wyder et al., 2017). Often organizational pressures and constraints on nursing practice can be contradictory to therapeutic considerations (Dawood et al., 2017; Hylén et al., 2018). Conflicts between professional and personal identity can occur in the emotionally charged environments in which psychiatric nurses work (Edward et al., 2017), for example causing moral distress in ethical dilemmas (Foster et al., 2019; Hylén et al., 2018) such as using coercive measures like seclusion or restraint (Jansen et al., 2020) which also violate other foundational aspects in psychiatric nursing care such as recovery orientation, facilitating hope, and advocacy for clients' right to self-determination (Wyder et al., 2017). Empathic engagement with the traumatic experiences of patients can result in burnout (J. R. Robinson et al., 2003) along with secondary traumatic stress (STS) and further anxiety, depression, and reduced ability to work (Bock et al., 2020). This effect of burnout on care is shown in Voltmer et al.'s (2013) study where German psychiatric nurses had lower commitment and more emotional distancing than nurses practicing on medical units.

   2.4.3.2 Absenteeism and Understaffing. Among nurses, burnout is clearly and significantly associated with absenteeism such as sickness absences, turnover, and intention to leave either a specific workplace or the nursing profession (Zander, Blümel & Busse, 2013).

Burnout and exposure to workplace stressors can affect individual health, causing headaches, insomnia, impaired concentration, and ongoing fatigue (Bradley & Cartwright, 2002; Konstantinos & Christina, 2008; López-López et al., 2019) as well as further sequelae due to negative coping behaviors such as substance use (Angermeyer et al., 2006; Rohwer et al., 2020). In fact, burnout in German health professionals was associated with unhealthy behaviors such as fast food and alcohol consumption, lack of physical activity, and frequent use of painkillers (Alexandrova-Karamanova et al., 2016). A German study among inpatient medical and psychiatric nurses showed that reduced mental and physical health is linked to unhealthy work–related behavior and experience patterns (Schulz et al., 2011) which is reflected in the ties burnout and stress have with sickness absences in nurses due to the various stressors occurring in this profession (Edwards & Burnard, 2003; López-López et al., 2019; Richter, 2014; Schulz et al., 2011). In Germany, the average number of sick days attributed to burnout rose an estimated 14 times between 2004 and 2011 (Kissling et al., 2014) and care professionals have higher sickness rates than the average (Rohwer et al., 2020).

Absenteeism and intention to leave reflect burnout's clear negative effect on job commitment (López-López et al., 2019) and satisfaction, which is well documented in nursing worldwide (Dolan, 1987; Konstantinos & Christina, 2008; Meßenzehl et al., 2006) as up to 54% of nurses intend to leave the profession (Flinkman et al., 2010). Absenteeism can indicate a withdrawal process from the job (Van der Heijden et al., 2010) as higher intention to leave predicts turnover (Murrells et al., 2008) along with dissatisfaction with job and pay, and low organizational commitment (Lum et al., 1998). Turnover among nurses is clearly related to burnout (Heinen et al., 2013; Zander, Blümel & Busse, 2013) as nurses with intention to leave have high DP and EE (Konstantinos & Christina, 2008; López-López et al., 2019). The proportion of nurses who intend to leave the profession is considerably higher in Germany than other European countries (Hasselhorn et al., 2008), as 17% and 36% of nurses intend to leave the profession or their current workplace, respectively (Heinen et al., 2013). Around 4 in 10 nurses expressed job dissatisfaction (Aiken et al., 2013) which, along with burnout, has doubled among German nurses over the past 2 decades (Zander, Dobler & Busse, 2013).

The ongoing nursing shortage, an international phenomenon, is blatantly apparent in Germany and is reflected in the below average staffing levels (Fischer et al., 2020; Löhr et al., 2015; Löhr & Sauter, 2020). The number of young nurses steadily decreased in the past 2 decades whereas the number of nurses over 50 years of age has doubled, thus a large proportion of nurses will be retiring in upcoming years as older German nurses have increased intention to leave (Heinen et al., 2013). In addition to this, many German nurses are leaving the occupation relatively early on in their careers. Although there were many individual differences for this, the perceived reputation of nursing as an occupation that nurses themselves hold and job dissatisfaction played a key role (Reiff et al., 2020) along with work–family conflict (Rafferty et al., 2019). Job dissatisfaction among German nurses is related to work overload, insufficient pay, low

responsibility or scope of practice, low standing in hierarchies, inadequate staffing levels, and conflict with others (Reiff et al., 2020). Germany was found to have the following factors contributing to nurses leaving their jobs: poor working environment, high EE, lack of sufficient and proper recognition and advanced training opportunities, and poor collaboration between nurses and the doctors as nursing working conditions have worsened (Zander, Blümel & Busse, 2013). Furthermore, lack of adequate pay increases in the face of work intensification has been at the forefront of German nursing strikes over the years (Krachler et al., 2021). Additionally, absenteeism, whether due to turnover or sickness, impacts psychiatric units especially in regard to understaffing (Aiken et al., 2001). Low staffing and aggression or violence in the workplace can become a vicious cycle, as experiencing violence is tied to absenteeism such as sickness leave, but understaffing is associated with higher risk of patient violence (Richter & Berger, 2001). In fact, experiencing violence can lead to posttraumatic stress (J. Lee et al., 2015) as a study of staff in psychiatric hospitals in Germany found that posttraumatic stress disorder (PTSD) could be diagnosed in 15% of staff (Richter & Berger, 2001).

2.4.4 The Moderating Role of Social Support in the Context of Psychiatric Nursing

Among nurses, social support through relationships at work is a both predictive and protective factor for burnout (O'Connor et al., 2018; Velando-Soriano et al., 2020) as there are positive associations between stress reactions, such as burnout, and a lack of social support from coworkers and supervisors (Demerouti et al., 2000; Kilfedder et al., 2001). A systematic review found that among nurses, social support had significant relationships with EE and DP (Velando-Soriano et al., 2020). Factors known to alleviate the effects of stress such as EE include feeling valued at work, social support, and institutional support by means of clinical supervision (López-López et al., 2019). Support in the workplace can reduce stressors inherent to psychiatric nursing such as aggression and violence as coworker support is a predictive factor for violence (Hylén et al., 2018). Furthermore, support through teamwork lessens the cumulative negative impact of doing emotional work as part of the therapeutic nursing process, as organizational support is a key protective factor for burnout and emotional distress (Edward et al., 2017). Social support in the workplace can be seen through management style and other organizational cultural practices, and is also connected to turnover (L. J. Hayes et al., 2006) as a lack of support is associated with greater distress and burnout, ultimately leading to greater intention to leave (L. J. Hayes et al., 2012). Seeking out social support in the workplace can be a key factor in new nurses' intention to leave (Beecroft et al., 2008) and various international sample of nurses found associations between higher perceived social support in the workplace and lower intention to leave (AbuAlRub et al., 2009; Chen et al., 2008; Ito et al., 2001; Van der Heijden et al., 2010).

Even though psychiatric nurses are sometimes regarded to be more protected from stress than other nursing occupations due to more social support stemming from higher participation

within a multidisciplinary team (Dolan, 1987; Konstantinos & Christina, 2008), other studies show that psychiatric nurses may frequently experience disturbing conflicts with colleagues (Cronin-Stubbs & Brophy, 1985; Hylén et al., 2018) thus adding to stress. On the other hand, a study of UK psychiatric nurses showed that interpersonal conflicts were rare but caused high amounts of distress (Sullivan, 1993). Furthermore, the overall main positive effect that social support has on burnout has been examined in various studies. A positive social environment in a workplace can help staff endure a stressful work environment (Hylén et al., 2018) and reduces feelings of isolation, as a lack of effective interpersonal communication between coworkers to exchange ideas and experiences and poor relationships with little feedback from supervisors increase the risk of burnout among nurses (Velando-Soriano et al., 2020). Among psychiatric nurses, higher job support is associated with better mental health (Shen et al., 2005), reduced job stress (AbuAlRub, 2004), and decreased burnout in one or more dimensions (Hamaideh, 2011; Ogus, 1990; Sullivan, 1993; Sundin et al., 2007; Woodhead et al., 2016).

Regarding the buffering hypothesis for social support's moderating role in the stress–outcome relationship, a cross-sectional study investigating job demands and resources in a sample of Belgian home healthcare nurses found that social support moderated the positive workload–burnout relationship. When nurses experience high levels of social support, workload was not related to burnout; however, workload was positively related to burnout in low or average levels of social support (Vander Elst et al., 2016). Tummers et al. (2001) found that among psychiatric and medical nurses in the Netherlands, EE increased when high workload was paired with limited social support; additionally, EE was higher and social support was lower among mental health nurses than medical nurses. Among nurses in southern Germany, Weigl et al. (2016) found that the relationship between EE and depressive symptomology was greatest among nurses with high workload and low support from supervisors, and that nurses with low workload and low support also had stronger associations between depression and EE, therefore supporting the hypothesis that social support moderates this relationship.

On the other hand, some studies have found evidence of a reverse buffering effect. Button (2008) found that effect social support had on the occupational stressors–health outcomes relationship depended on the level of job stress—in those with high job stress, high levels of support was associated with poorer health, whereas in those reported low levels of support, high job stress was associated with better health. Jenkins and Elliot (2004), in their study of nursing staff in acute adult mental health units, found that the moderating effect of workplace social support on the stress–burnout relationship differed according to component of burnout. On one hand, higher levels of coworker support were related to lower EE, whereas there were no significant correlations between social support and PA. However, a reverse buffering effect was noted for DP: for staff with high levels of social support, higher stressors scores were associated with higher DP, whereas this association was not found in those nurses who reported low levels of support (Jenkins &

Elliott, 2004). In summary, although the relationship between stress, burnout, and social support is complicated, it is highly relevant when investigating stressors and outcomes such as burnout within a particular workplace context.

3. Aims, Research Questions, and Hypotheses

Stress patterns and related factors among healthcare workers are activity specific. It is essential to examine working conditions within subdisciplines in specific fields of healthcare activity, as each setting is molded by its own diverse constellation of work demands and conditions which ultimately shape stress and burnout, as well as their associated factors and sequelae (Fischer et al., 2020; Voltmer et al., 2013). Although stressors and burnout for healthcare professionals working in specific settings are well researched in other countries, there remains a lack of research in individual nursing contexts Germany (Rohwer et al., 2020). Therefore, to retain nurses, promote healthy working environments, and ensure quality patient care, investigating the presence of stressors and their impact on workers within the specific setting and context of nursing in acute, locked adult inpatient psychiatric units in Germany is necessary.

By answering the following research questions, this study aims to identify occupational stressors (research question 1), measure the presence of stress, burnout, social support, and intention to leave (research questions 2–6), and explore possible relationships between stressors, burnout, and related factors including social support, intention to leave, and demographic or job–related characteristics (research questions 7–9) among nurses working in the German adult inpatient psychiatric setting. Finally, the hypotheses regarding the moderating role of social support in the stress-burnout relationship will be tested (research question 10).

1. What are main sources of stress for nurses working in acute, locked adult inpatient psychiatric units in Germany?
2. What level of stress is present among nurses in this setting?
3. What level of burnout is present among nurses in this setting, specifically:
    a. in the EE dimension?
    b. in the DP dimension?
    c. in the PA dimension?
4. What proportion of nurses in this setting are experiencing high burnout, specifically:
    a. in the EE dimension?
    b. in the DP dimension?
    c. in the PA dimension?
5. What amount of social support in the workplace is available to nurses in this setting?
6. What is the level of intention to leave among nurses in this setting?

7. What differences and unique associations can be found in levels of stress, EE, DP, PA, social support, and intention to leave based on specific demographic and job–related characteristics of nurses in this setting?

8. What unique associations can be found between types of stressors and levels of EE, DP, PA, social support, and intention to leave among nurses in this setting?

9. What unique associations can be found between levels of stress, EE, DP, PA social support, and intention to leave among nurses in this setting?

10. Does social support moderate the relationship between stress and the three different dimensions of burnout (EE, DP, PA, respectively) in this sample of nurses?

    a. Hypothesis: There will be a significant interaction between stress and social support, which is indicated by a significant change in the amount of variance in the criterion variable (scores on the EE, DP, or PA subscale, respectively).

4. Methods

4.1 Data Collection

This investigation took place within a larger mixed methods study conducted using a cross-sectional, voluntary, and anonymous 8-minute online survey in the German language implemented in the online survey tool Qualtrics (www.qualtrics.com, 2020 Version). The target sample included all healthcare professionals currently working in acute, locked psychiatric units for adults across Germany, including nurses and nursing assistants, social workers, psychologists, therapists (e.g., occupational, recreational, and physiotherapists) and psychiatrists. Participants met inclusion criteria if they held current employment in a regulated profession on a locked adult inpatient psychiatric unit. Exclusion criteria were working in open units or other specialized facilities (such as forensics, psychogeriatrics, or child psychiatry), not currently employed, and under 18 years of age. The study was approved by the University Medical Center Hamburg-Eppendorf's (UKE) ethics committee for psychological studies (LPEK-0270).

Data collection took place from March 23rd to May 31st, 2021. Participants were recruited using convenience sampling using email lists of the acute inpatient psychiatry wards at the UKE and Asklepios Clinic Wandsbek in which they received the survey link. Participants were also recruited using purposive sampling through emails to relevant professional network channels and postsecondary institutions offering training in relevant disciplines (i.e., psychiatric nursing, social work). Furthermore, posts with an invitation to the survey and link were shared roughly every 10 days on targeted groups for relevant healthcare professionals on social media (Facebook).

4.2 Pretest

       Pretests with five individuals with backgrounds in psychology and experience in acute psychiatry from the UKE Neuropsychology working group were conducted prior to distribution of the survey to ensure comprehension and clarity of the materials, assess clarity and appropriateness of German translations, determine duration of the questionnaire, and check for technical issues in the survey. These results were not included in the final analysis.

4.3 Procedure and Variables

       Upon clicking the link to the survey, individuals were directed to the survey's introduction page which briefly explained the aims and content of the survey and included information concerning confidentiality and anonymity. All individuals were then asked to provide informed consent before participation and were given the option to exit the survey if they did not consent. Afterwards, participants were asked to confirm if they fit the inclusion criteria of working on a closed adult inpatient psychiatric ward and were asked questions regarding demographics and characteristics of their occupation. Following this, participants were directed to questions on workplace stressors, burnout, social support, and intention to leave their job. Finally, participants were thanked for their participation before exiting the survey.

4.4 Instruments

       The full original questionnaire is available in Appendix A.

4.4.1 Sociodemographic Variables

       Gender was assessed as male (coded as 1), female (2), or diverse (3).

       Age was measured in years using an open response box.

       State of employment was assessed using the 16 German federated states as options: Baden-Württemberg (1), Bavaria (2), Berlin (3), Brandenburg (4), Bremen (5), Hamburg (6), Hesse (7), Mecklenburg-Vorpommern (8), Lower Saxony (9), North Rhine-Westphalia (10), Rhineland-Palatinate (11), Saarland (12), Saxony (13), Saxony-Anhalt (14), Schleswig-Holstein (15), and Thuringia (16).

       Level of education was measured by asking respondents to select the option indicating their highest level of formal postsecondary education attained, with options corresponding to the German educational system: apprenticeship or vocational training (1), bachelor's degree (2), master's degree or academic diploma or state examination (3), doctoral degree (4), and "other" (5) alongside an open response box.

4.4.2 Job–Related Variables

Work setting was investigated using a yes (1) and no (2) response format where participants were asked if they are currently employed on a locked acute inpatient psychiatry unit for adults. If the participant indicated "no", they were guided to a question asking them to indicate the work setting in which they are currently employed with the options: inpatient services, integration/transitional services, or other, each alongside an open response box requesting specification.

Profession was assessed by asking the participants to choose the option best corresponding to their current occupation: nursing assistant (1), nurse (including nurse, geriatric nurse, or special education nurse) (2), specialized nurse (specialization in psychiatric nursing or advanced practice nurse or nurse expert) (3), social worker or pedagogue (4), psychologist (5), psychotherapist (6), therapist (occupational, recreational, physiotherapist) (7), assistant doctor (8), psychiatrist (9), and "other" (10) alongside an open response box.

Years of experience in profession, years of experience in acute psychiatry, and years of experience on current unit of employment were each measured in separate open response boxes.

Number of work hours per week according to the participants' current employment contract were collected using an open response box.

Overtime worked was measured first using a yes (1) and no (0) response option to the question, "Do you often work overtime?"; upon answering "yes", participants were directed to an open response box to indicate the approximate average amount of overtime hours worked per week outside of their regularly contracted hours. Those who indicated "no" were later manually assigned a zero for overtime hours.

Shift type was measured using the following options: shift work without on call service (1), shift work with on call service (2), regular work hours with on call service (3), regular work hours without on call service (4), and other (5) alongside an open response box.

Leadership position was indicated using a yes (1) and no (0) question to investigate whether the participant held an official leadership position within their workplace.

Days of absence due to sickness measured in an open response box asking participants to indicate an approximation of the number of sick days taken in the year 2020. Participants were asked to not include any absences related to COVID-19, including quarantine.

4.4.3 Stressors and Stress

Mental Health Professional Stress Scale. Stress level and types of stressors were assessed using the Mental Health Professional Stress Scale (MHPSS), a discipline–neutral scale developed for self-reporting sources of stress among various professionals, such as nurses and psychologists, working within a variety of mental health settings (Cushway et al., 1996). This scale consists of 42

items, each representing a possible source of stress from demands related to working in mental health care. These items are grouped on seven subscales made up of six items each, with each subscale representing a "type" of stressor: Workload, Client–Related Difficulties, Organizational Structure and Processes, Relationships and Conflicts With Other Professionals, Lack of Resources, Professional Self-Doubt, and Home–Work Conflict. Answers are given using a 4-point scale using two anchors, ranging from 0 (*does not apply to me*) to 3 (*does apply to me*) for each stressor item. The total score of the scale, representing an accumulation of stressors, is used as a measure of level of stress and ranges from 0 to 126. The MHPSS has good reliability (Cronbach's α = .94) for mental health nurses (Cushway et al., 1996); in this investigation, the scale and each subscale all also had good reliability (total scale: Cronbach's α = .93; see Appendix B for items and reliability coefficients per subscale). For this study, one item was added to the end of the scale: lack of adequate pay (Reiff et al., 2020; Rohwer et al., 2020; Zander, Blümel & Busse, 2013); this item was not included in any subscale nor the total MHPSS score representing stress level. With the added item, the reliability of the total scale remained unchanged (Cronbach's α = .93).

As a German language version of the MHPSS was not available, the English version was translated using a back-translation technique with testing (Maneesriwongul & Dixon, 2004) in which a bilingual Native German/English speaker familiar with the subject matter and target setting translated the source version into German. Next, a Native English speaker with advanced German language skills and knowledge on the subject matter and target population translated the instrument back into English. Discrepancies between the source and back translation were discussed by the English speaker and a second Native German with fluent English language skills and knowledge of the subject matter and sample, and the German language version was revised until consensus was reached. Testing for appropriateness and clarity of the German language version was carried out as part of the general survey pretest prior to survey dissemination.

4.4.4 Burnout

Maslach Burnout Inventory–Human Services Survey. Presence and level of burnout was measured via the widely–used Maslach Burnout Inventory–Human Services Survey (MBI-HSS) designed to measure the presence and level of burnout for those working in human services and health care (Maslach et al., 1996) and is considered the standard tool for burnout research (Maslach & Leiter, 2016). The MBI-HSS is made up of 22 items measuring burnout on three separate dimensions, each with a corresponding subscale (see Appendix B for a list of items per subscale): Emotional Exhaustion (MBI-EE), which includes nine items and represents the component EE; Depersonalization (MBI-DP), made up of five items which represent the interpersonal context dimension DP or cynicism; and Personal Accomplishment (MBI-PA), which consists of eight items and represents the efficacy component PA (Maslach et al., 1996, 2001). Answers are given on a 7-point scale for frequency of occurrence described in each item, ranging from *never* (0), *a few times*

per year (1), *once a month or less* (2), *a few times per month* (3), *once a week* (4), *a few times per week* (5), and *every day* (6). Total score for each subscale represents the level of burnout per the respective dimension. These total scores are also used to classify the participants into low (EE ≤ 13; DP ≤ 4; PA ≤ 28), moderate (EE = 14–20; DP = 5–7; PA = 29–33) and high (EE ≥ 21; DP ≥ 8; PA ≥ 34) categories of burnout for each dimension, according to normative data for mental health professionals. The presence of high burnout is indicated by scores falling into the "high" categories for the subscales MBI-EE (≥ 21) and MBI-DP (≥ 8), and scores within the "low" category for MBI-PA (≤ 28; Maslach et al., 1996). A German version of this scale was used for this investigation (Baier et al., 2018; RN4CAST consortium et al., 2011). Among a sample of German nurses, reliability was good for MBI-EE (Cronbach's α = .86) and acceptable for MBI-DP (Cronbach's α = .75) and MBI-PA (Cronbach's α = .79) (Aiken et al., 2001; Poghosyan et al., 2009). In this present study, reliability was also good for MBI-EE (Cronbach's α = .90) and MBI-PA (Cronbach's α = .80) and acceptable for MBI-DP (Cronbach's α = .73).

4.4.5 Social Support

Copenhagen Psychosocial Questionnaire. Social support in the workplace was assessed through four items from the German–standard third version of the Copenhagen Psychosocial Questionnaire (COPSOQ-III [B.8, 1–4]; Burr et al., 2019). The four questions assess the participant's perception of the availability of coworkers and supervisors in the work setting to provide instrumental aid (help) and emotional support (a listening ear about work problems) when needed. Answers are given using a 5-point scale ranging from *never/almost never* (0), *rarely* (1), *sometimes* (2), *often* (3), *always* (4), as well as the option to choose "I have no supervisor" (5). For scoring, those who answered no supervisor (5) were manually scored as zero as this equates to an absence or lack of support available. The total score from the COPSOQ-III (B.8, 1–4) scale represents level of social support. For this subscale of the COPSOQ-III, across a variety of countries, reliability was good (Cronbach's α = .87 for coworker support; Cronbach's α = .81 for support from supervisor [Burr et al., 2019]). In this investigation, the reliability was also good (Cronbach's α = .82 for total scale; Cronbach's α = .84 for coworker support; Cronbach's α = .94 for supervisor support).

4.4.6 Intention to Leave

Copenhagen Psychosocial Questionnaire. Intention to leave was measured with two items from the German–standard third version of the COPSOQ-III (B.10, 1–2; Burr et al., 2019), consisting of two questions regarding the frequency at which the participant has thought about leaving their position or profession in the past year. Answers are recorded on a 5-point scale ranging from *never* (0), *a few times per year* (1), *a few times per month* (2), *a few times per week* (3), to *every day* (4) (Burr et al., 2019). If the participants provided an answer confirming any

intention to leave, an additional question with a yes (1) and no (2) answer format of whether this was due to the expiration of a time–limited position was posed. The total score from the COPSOQ-III (B.10, 1–2) scale represents a level of intention to leave. Reliability coefficients from original studies were not provided for this subscale; however, for this investigation, reliability was acceptable (Cronbach's α = .74).

4.5 Statistical Analysis

The data were analyzed using IBM SPSS Statistics (Version 25) predictive analytics software. Data were checked for outliers during data cleaning; any values not within realistic bounds were adjusted and coded as missing (one value for overtime amount). Normality was overall assumed due to sample size greater than 30, but was further assessed for normal distribution in conjunction with QQ plots for gross violations of the assumption (A. F. Hayes, 2013), as the large sample size may lead to overly sensitive normality tests (Field, 2009; Ghasemi & Zahediasl, 2012). In this, it was determined that the scores from the main variable scales (MHPSS total [stress], all MHPSS subscales, MBI-EE [EE], MBI-DP [DP], MBI-PA [PA], COPSOQ-III B.8, 1–4 [social support] and B.10, 1–2 [intention to leave]) followed normal distributions, whereas the continuous demographic and job–related characteristic variables (age, years of experience, hours worked per week, overtime hours per week, and sick days) were not normally distributed. Independence of observations was fulfilled for each test. Full assumptions according to each statistical test were followed accordingly (see Appendix C).

Descriptions of the sample characteristics and main variable scales include mean values and standard deviations with ranges for continuous data and frequency distributions for categorical data. The demographic and job–related characteristic variables state and shift pattern were included in sample description but not in data analyses, as the categories and possible groupings for both variables were too heterogenous to provide statistically robust analyses (Field, 2009). Furthermore, to allow for the appropriate statistical analysis of the education variable, the categories were regrouped into a new variable consisting of the two groups apprenticeship (1) and higher education (2), excluding one participant who answered "other" and did not specify. To determine relevant stressors, item means for the MHPSS and subscales were used. However, all further statistical analyses used item sum totals for all scales and subscales.

Differences in levels of the main scale variables main scale variables (stress, EE, DP, and PA, social support, and intention to leave scales) according to demographic and job–related characteristic variables were analyzed using various statistically tests. Independent samples *t*-tests were used to test for differences in the parametric main variable scales (stress, EE, DP, PA, social support, and intention to leave) according to dichotomous individual categorical demographic and job–related characteristic variables (gender, professional group, education, leadership position). All independent samples *t*-tests produced nonsignificant Levene's test results; thus, equality of

variances was assumed for all cases in interpreting the results. For *t*-tests, Cohen's *d* was calculated post-test for effect size and classified as small (0.2), medium (0.5) or large (0.8) (J. Cohen, 1977). Chi-square tests were used to test for significant associations with burnout categories (low, medium, high for each of EE, DP, and PA) between groups according to the dichotomous categorical demographic and job–related characteristic variables (gender, professional group, education, leadership position, and overtime). Effect sizes using Cramer's *V* were interpreted as per Field (2017) as very strong (> 0.25), strong (> 0.15), moderate (> 0.10), weak (> 0.05), and no/very weak (> 0).

To test for the strength and direction of associations between main scale variables (stress, EE, DP, and PA, social support, and intention to leave scales) and continuous demographic and job–related characteristic variables (age, experience in profession, acute psychiatry, and on current unit, hours worked per week, amount of overtime worked per week, and number of sick days taken in the past year), Spearman's correlations were used as all independent continuous variables violated the assumption of normality (Field, 2009). To examine relationships between main scale variables stress, EE, DP, and PA, social support, and intention to leave, Pearson's correlations were used, as all data was parametric. Effect sizes of Pearson's *r* and Spearman's rho (r_s) were classified as small (± .1), medium (± .3), or large (± .5) (Field, 2009). As per Field (2009), all statistical tests for these exploratory analyses were without overt, directional hypotheses and therefore two-tailed.

To test for a moderating effect of social support on the stress–burnout relationship, moderation analysis was employed using three separate hierarchical regression models, one for EE, DP, and PA each, based on the equation:

$$Y = i_1 + b_1X + b_2M + b_3XM$$

where outcome *Y* burnout (EE, DP, or PA) and predictors included the focal predictor *X* stress (MHPSS score) along with other predictors *M* social support (COPSOQ-III B.8, 1–4 scores), and the *XM* interaction term of Stress x Social Support, which was created by multiplying the total MHPSS score (stress) by the COPSOQ-III B.8 (1–4) scale total score (social support) (A. F. Hayes, 2013). Moderation analysis (A. F. Hayes, 2013) involves investigating if the effect of *X* (stress) on *Y* (burnout) is moderated by *M* (social support), as shown in Figure 1.

Figure 1

Statistical Diagram of a Simple Moderation Model
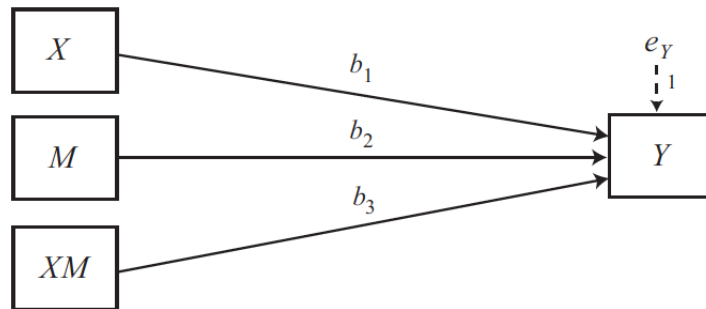
Note. X = focal predictor; M = moderator predictor; XM = interaction; b = standardized regression coefficient (slope); Y = outcome; e = error term (error in prediction the value of Y), as described by A. F. Hayes (2013, p. 215).

The hypothesis for this moderation is that stress and social support will have a significant statistical interaction, indicated by a significant change in the variance of the outcome variable (EE, DP, or PA) as indicated by the t-test statistic. Upon evidence of a moderation, probing via the PROCESS tool can investigate the conditional effects of stress on burnout at various levels of social support as a moderator (A. F. Hayes, 2013). Conversely, evidence that no moderation is taking place includes a nonsignificant t-test statistic for the interaction term as well as a confidence interval that crosses zero.

For each of the EE, DP, and PA models, hierarchical regressions were created by first entering MHPSS 42-item scale score (stress level) as a predictor as a first step, followed by COPSOQ-III B.8 scale total score (social support level) as the second step, then the interaction term as the third and final step. This stepwise forced entry was used in order to examine the change in the stress–burnout relationship, or the conditional effects, in each step (A. F. Hayes, 2013). Furthermore, each model was assessed for fit and generalizability as per relevant assumptions including normality, multicollinearity, homoscedasticity, independence of errors and observations, and linearity by use of corresponding test statistics and plots. Hypothesis testing was built upon the evidence of significant one-tailed correlations (Field, 2009) between the outcome and the predictors (see Appendix C). A priori power analysis using G*Power suggested that a sample size of 119 is needed to detect medium sized effects ($f^2 = 0.15$) with 95% power (alpha = .05) when using three predictors.

For all data analyses, missing data were excluded on an analysis by analysis (pairwise) basis to allow for maximum use of the data. Instances where there is missing data is indicated in the respective results; otherwise, data for the whole sample was used ($n = 221$). Results were reported as significant at $p < .05$ and very significant at $p < .001$.

5. Results

5.1 Sample Description

Of the 515 participants who started the survey, 305 participants fully completed the questionnaire, indicating a dropout rate of 40.8%. As this investigation focussed on healthcare professionals working within the specific context of acute, locked–door adult inpatient psychiatry units in German hospitals, those who indicated that they work in other settings ($n = 63$) were not included in the analysis. Furthermore, participants from the wide range of professions other than nursing or specialized nursing were excluded due to low numbers ($n = 21$); hence the final sample consisted of 221 general nurses and specialized nurses included in the data analyses.

The final sample included 30.8% ($n = 68$) males and 69.2% ($n = 153$) females. The average age was 36.63 years ($SD = 10.09$) and ranged from 21 to 64 years. As for professional groups, 74.2% ($n = 164$) of participants were general nurses and 25.8% ($n = 57$) were specialized nurses with specific additional training in psychiatry or advanced practice. Having an apprenticeship or vocational training was reported as the highest level of postsecondary education by 80.1% ($n = 177$) of the participants, having a bachelor's degree by 9.5% ($n = 21$) of participants, a master's degree or academic diploma or state examination by 10% ($n = 22$) of participants, and one participant (0.5%) indicated having another type of unspecified education. Finally, 22.2% ($n = 49$) of participants stated that they currently work in a leadership position. Figure 2 depicts the number of participants according to where they currently are employed.

Figure 2

Location of Participant Employment
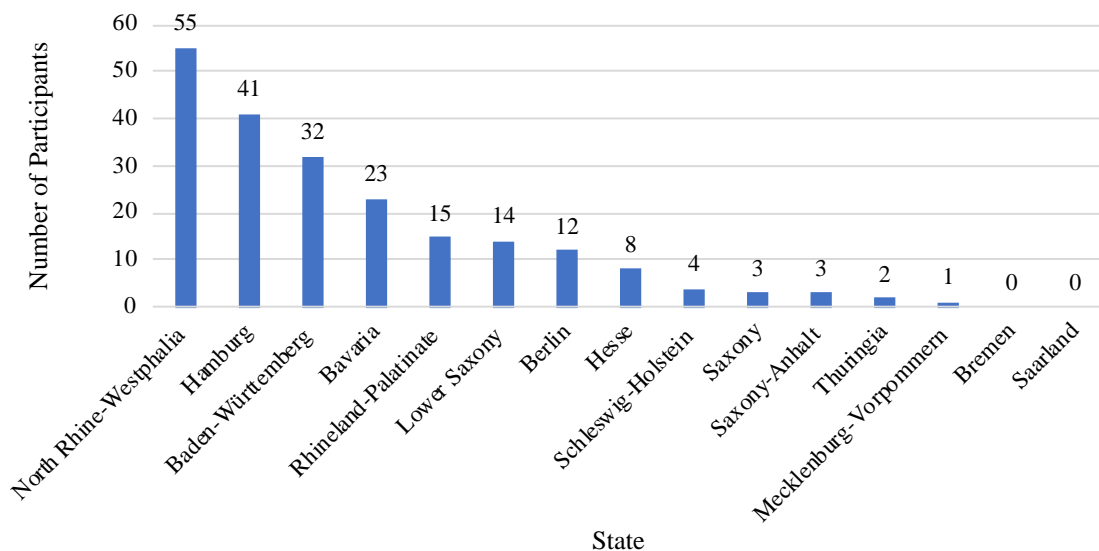
Amount of experience working in the nursing profession ranged from 1–40 years with an average of 14.65 years ($SD = 9.3$ based on $n = 220$). The average amount of experience working in acute inpatient psychiatry was 9.08 years ($SD = 7.73$; range 0–35) and participants indicated that

their experience working in their current ward of employment ranged from 0–32 years with a mean of 6.83 years ($SD = 6.45$). Hours of work per week as per contract ranged from 5.3–42 hours ($M = 36.24$; $SD = 33.14$; based on $n = 220$). Approximately 71% ($n = 157$) indicated that they often work overtime; the average number of hours of overtime worked per week was 4.49 hours ($SD = 2.76$) among those who indicated that they work overtime and provided a value ($n = 146$). However, including those who did not often work overtime, the overall mean for overtime worked per week among the sample was 3.12 hours ($SD = 3.09$; range 0–15; based on $n = 209$). The following shift patterns were commonly worked: 70.1% ($n = 155$) shift work without on call service, 22.6% ($n = 50$) shift work with on call service, 5% ($n = 11$) regular work hours without on call service, 1.4% ($n = 3$) regular work hours with on call service, and 0.9% ($n = 2$) of participants reported having other work patterns. Furthermore, the average number of days missed due to sickness in the past year was 9.95 days ($SD = 13.83$; range 0–120; based on $n = 219$).

5.2 Stressors

Table 1 shows the top 10 stressors for this sample from the MHPSS including the added 43rd item (lack of adequate financial reward). The list is ranked in order of descending item means, along with each item's corresponding subscale (see Appendix D for a full list).

Table 1

Top 10 Stressors

Rank	MHPSS Item	MHPSS Subscale	*M*	SD
1	Lack of adequate staffing	Lack of Resources	2.4	0.9
2	Physically threatening patients	Client–Related Difficulties	2.3	0.9
3	Difficult and/or demanding patients	Client–Related Difficulties	2.1	0.9
4	Lack of adequate financial reward	n/a [a]	2.1	1.0
5	Too many patients	Workload	2.0	1.0
6	Lack of support from management	Organizational Structure and Processes	1.9	0.9
7	Not enough time to complete all tasks satisfactorily	Workload	1.9	0.9
8	The way conflicts are resolved in the organisation	Organizational Structure and Processes	1.9	1.0
9	Lack of adequate cover in potentially dangerous environment	Lack of Resources	1.9	1.0
10	Too many different things to do	Workload	1.8	1.0

[a] added item with no corresponding subscale.

Table 2 shows the MHPSS subscales ranked according to descending item means, representing the types of stressors indicated by the sample as most applicable to their work experience.

Table 2

MHPSS Subscale Rankings

Rank	MHPSS Subscale	*M*	*SD*	Range	
				Possible	Reported
1	Workload	1.7	0.7	0–3	0.0–3.0
2	Organizational Structure and Processes	1.6	0.7	0–3	0.2–3.0
3	Lack of Resources	1.5	0.7	0–3	0.0–3.0
4	Client–Related Difficulties	1.5	0.6	0–3	0.0–3.0
5	Relationships and Conflicts With Other Professionals	1.1	0.7	0–3	0.0–2.8
6	Professional Self-Doubt	1.0	0.6	0–3	0.0–3.0
7	Home–Work Conflict	0.9	0.7	0–3	0.0–3.0

5.3 Stress, Burnout, Social Support, and Intention to Leave Levels

Table 3 shows the mean scores and ranges for the scales for stress (MHPSS), burnout subscales EE (MBI-EE), DP (MBI-DP), and PA (MBI-PA), social support (COPSOQ-III B.8), and intention to leave (COPSOQ-III B.10) for the entire sample. According to normative scores for mental health professionals (Maslach et al., 1996), the mean score for MBI-EE was at the upper limit of the moderate category (14–20), indicating moderate EE level and therefore moderate burnout in this dimension for the sample as a whole. The mean score for MBI-DP coincides with the high category (≥ 8), indicating high DP level and therefore high burnout in this dimension. The mean score for MBI-PA falls into the high category for this subscale (≥ 34), indicating a high level of PA, which translates to a low category of burnout in this dimension for the whole sample.

Table 3

Stress, Burnout, Social Support, and Intention to Leave Scales Descriptives

Scale	*M*	*SD*	Range	
			Possible	Reported
Stress	55.7	19.7	0–126	12–105
EE	20.3	10.7	0–54	1–47
DP	9.0	6.0	0–30	0–27
PA	34.1	7.8	0–48	9–48
Social support	12.0	3.3	0–16	0–16
Intention to leave	2.2	2.0	0–8	0–8

Table 4 shows the number of participants falling into low, moderate, or high categories for each burnout subscale, according to demographic and job characteristics, as well as the total proportion of the sample with low, moderate, or high burnout in each burnout dimension. According to normative data for mental health professionals, those in this sample with high burnout include 47.1% of participants for EE, 52.5% for DP, and 21.7% for PA. Significant associations were found between leadership position and DP, as well as between working overtime and EE (see Table 4 as well as Chi-square results in Section 5.4).

Table 4

Burnout Case Categories of Participants According to Demographic and Job–Related Characteristics

Characteristic	EE			DP			PA		
	Low (≤ 13)	Moderate (14–20)	High [a] (≥ 21)	Low (≤ 4)	Moderate (5–7)	High [a] (≥ 8)	Low [a] (≤ 28)	Moderate (29–33)	High (≥ 34)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Gender									
Male	29 (13.1)	12 (5.4)	27 (12.2)	16 (7.2)	10 (4.5)	42 (19.0)	17 (7.7)	11 (5.0)	40 (18.1)
Female	44 (19.9)	32 (14.5)	77 (34.8)	43 (19.5)	36 (16.3)	74 (33.5)	31 (14)	30 (13.6)	92 (41.6)
Profession									
General	51 (23.1)	32 (14.5)	81 (36.7)	39 (17.6)	34 (15.4)	91 (41.2)	37 (16.7)	30 (13.6)	97 (43.9)
Specialized	22 (10.0)	12 (5.4)	23 (10.4)	20 (9.0)	12 (5.4)	25 (11.3)	11 (5.0)	11 (5.0)	35 (15.8)
Education [b]									
Apprenticeship	54 (24.5)	36 (16.4)	87 (39.5)	45 (20.5)	36 (16.4)	96 (43.6)	39 (17.7)	35 (15.9)	103 (46.8)
Higher	18 (8.2)	8 (3.6)	17 (7.7)	14 (6.4)	9 (4.1)	20 (9.1)	9 (4.1)	5 (2.3)	29 (13.2)
Leadership									
Yes	17 (7.7)	8 (3.6)	24 (10.9)	21 (9.5)	8 (3.6)	20 (9.0)	8 (3.6)	12 (5.4)	29 (13.1)
No	56 (25.3)	36 (16.3)	80 (36.2)	38 (17.2)	38 (17.2)	96 (43.4)*	40 (18.1)	29 (13.1)	103 (46.6)
Overtime									
Yes	42 (19.0)	31 (14.0)	84 (38.0)*	43 (19.5)	30 (13.6)	84 (38.0)	37 (16.7)	27 (12.2)	93 (42.1)
No	31 (14.0)	13 (2.9)	20 (9.0)	16 (7.2)	16 (7.2)	32 (14.5)	11 (5.0)	14 (6.3)	39 (17.6)
Total	73 (33.0)	44 (19.9)	104 (47.1)	59 (26.7)	46 (20.8)	116 (52.5)	48 (21.7)	41 (18.6)	132 (59.7)

[a] scores indicative of high burnout. [b] $n = 220$.

* significant association ($p < .05$) according to Chi-square test.

According to the social support scale (COPSOQ-III B.8 [1–4]), regarding support from coworkers, 84.1% ($n = 186$) stated that they "always" or "often" received help and support from colleagues when needed and 75.6% ($n = 167$) stated that their colleagues are "always" or "often" willing to listen to their work problems when needed. In contrast, 2.7% ($n = 6$) and 8.1% ($n = 18$) respondents indicated "never" or "rarely" regarding co-worker help and coworkers willing to listen to work problems, respectively. As for supervisor support, 70% ($n = 148$) stated that they "always" or "often" received help and support when needed, while 70.1% ($n = 155$) indicated that their supervisor is "always" or "often" willing to listen to work problems, when needed. Additionally, 15.8% ($n = 35$) indicated that they "never" or "rarely" have help and support from supervisors when needed and 13.6% ($n = 30$) indicated that they "never" or "rarely" have a supervisor willing to listen to work problems. A full frequency table is available in Appendix E.

As for intention to leave (as measured by the COPSOQ-III B.10 [1–2] scale), in total, 40.3% ($n = 89$) of participants stated that they "never/almost never" think about leaving their profession. Similarly, 33.9% ($n = 75$) stated that they "never/almost never" think about changing their current work position. On the other hand, 10% ($n = 22$) and 15.8% ($n = 35$) reported that they often think about leaving their profession or their current position, respectively (as indicated by answering "a few times per week" or "every day"). A full frequency table is available in Appendix E. Additionally, of those who indicated having any thoughts of leaving their current position, three participants (1.4% of total sample) stated that it is due to a time-limited contract or training position, whereas 143 participants (64.7% of total sample) indicated "other" grounds.

5.4 Differences in Stress, Burnout, Social Support, and Intention to Leave Levels According to Sample Characteristics

Table 5 shows results of independent samples t tests for significant differences in levels of the main scale variables stress, EE, DP, PA, social support, and intention to leave according to demographic or job–related characteristics gender, nurse professional group, education, and leadership position. Overall, DP levels were significantly higher for males, and stress levels were significantly higher for those not in a leadership position.

Table 5

Results of t-Tests for Demographic or Job–Related Characteristics and Main Scale Variables

Variable	M (SD)		$t(219)$	p	Cohen's d
	Gender				
	Male	Female			
Stress	52.2 (20.7)	57.3 (19.1)	1.80	.07	0.26
EE	18.6 (11.4)	20.1 (10.3)	−1.55	.29	0.23
DP	10.4 (6.6)	8.4 (5.6)	2.26	.03*	0.33
PA	34.3 (7.4)	34.0 (8.0)	0.32	.75	0.05
Social support	11.8 (3.2)	12.1 (3.4)	−0.80	.43	0.12
Intention to leave	2.2 (2.0)	2.1 (1.9)	−0.43	.67	0.06
	Professional group				
	General	Specialized			
Stress	55.3 (19.7)	57.1 (19.8)	1.80	.53	0.10
EE	20.4 (10.5)	20.0 (11.4)	0.24	.81	0.04
DP	9.4 (5.9)	7.8 (6.1)	1.70	.09	0.26
PA	33.7 (8.0)	35.2 (7.3)	−1.26	.21	0.19
Social support	12.3 (3.2)	11.4 (3.5)	1.68	.10	0.26
Intention to leave	2.3 (2.0)	2.1 (2.0)	0.59	.56	0.08
	Education [a]				
	Apprenticeship	Higher			
Stress	55.9 (19.8)	55.4 (19.8)	0.14	.89	0.02
EE	20.8 (10.7)	18.5 (10.4)	1.29	.20	0.22
DP	9.2 (5.9)	8.2 (6.1)	1.02	.31	0.17
PA	33.8 (7.8)	35.3 (7.9)	−1.15	.25	0.20
Social support	12.1 (3.3)	11.9 (3.4)	0.34	.74	0.06
Intention to leave	2.2 (1.9)	2.4 (2.2)	−0.76	.45	0.13
	Leadership position				
	No	Yes			
Stress	57.4 (19.3)	50.0 (20.3)	2.35	.02*	0.38
EE	20.3 (10.4)	20.4 (11.8)	−0.09	.93	0.01
DP	9.3 (5.8)	7.8 (6.6)	1.55	.12	0.25
PA	33.9 (8.0)	34.7 (7.1)	−0.65	.52	0.11
Social support	12.0 (3.4)	12.0 (3.1)	0.04	.97	0.01
Intention to leave	2.3 (2.0)	1.9 (2.0)	1.31	.19	0.21

[a] $n = 220$, $t(218)$.

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

Table 6 shows Spearman's correlations of the main scale variables stress, EE, DP, PA, social support, and intention to leave with demographic and job–related characteristics.

Table 6

Correlations of Main Variable Scales with Demographic and Job–Related Characteristics

Variable	Age [a]	Experience: profession	Experience: acute psych	Experience: current unit	Hours worked/ week [a]	Overtime hours/ week [b]	Sick days [c]
Stress	.08	.11	.12	.16*	−.09	.16**	.24**
EE	−.09	−.04	−.04	.04	−.04	.25**	.35**
DP	−.22*	−.20*	−.12	.05	−.14*	.05	.23*
PA	−.004	−.02	.07	.03	.12	.05	−.10
Social support	−.19*	−.14*	−.13	-.18*	.04	−.13	−.25**
Intention to leave	−.05	−.05	−.04	.04	-.03	.10	.34**

[a] $n = 220$, [b] $n = 209$; [c] $n = 219$.

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

Chi-squares tests were used to detect associations between categories (high, medium, low) of each burnout dimension (EE, DP, and PA) and the categorical variables of gender, profession, leadership position, overtime, and education level (Table 4). A significant association was found between leadership position and DP ($X^2(2, N = 221) = 8.40$, $p = .02$) with a strong effect (Cramer's $V = 0.20$). Additionally, overtime was significantly associated with EE ($X^2(2, N = 221) = 11.27$, $p = .004$) also with a strong effect (Cramer's $V = 0.23$). On the other hand, there were no significant associations between any other variables. There were no significant associations between gender and burnout: EE ($X^2(2, N = 221) = 4.13$, $p = .13$; Cramer's $V = 0.14$), DP ($X^2(2, N = 221) = 3.74$, $p = .15$; Cramer's $V = 0.13$), nor PA ($X^2(2, N = 221) = 0.80$, $p = .67$; Cramer's $V = 0.06$). As for profession, there were no significant associations with EE ($X^2(2, N = 221) = 1.51$, $p = .47$; Cramer's $V = 0.08$), DP ($X^2(2, N = 221) = 3.12$, $p = 0.21$; Cramer's $V = 0.12$), nor PA ($X^2(2, N = 221) = 0.27$, $p = .88$; Cramer's $V = 0.04$). There were no significant associations between education level and EE ($X^2(2, n = 220) = 2.09$, $p = .35$; Cramer's $V = 0.10$), DP ($X^2(2, n = 220) = 1.05$, $p = 0.59$; Cramer's $V = 0.07$), nor PA ($X^2(2, n = 220) = 1.78$, $p = .41$; Cramer's $V = 0.09$). As for leadership position, no significant association was found with neither EE ($X^2(2, N = 221) = 0.51$, $p = .78$; Cramer's $V = 0.05$) nor PA ($X^2(2, N = 221) = 2.04$, $p = .36$; Cramer's $V = 0.10$). Overtime was not significantly associated with neither DP ($X^2(2, N = 221) = 0.96$, $p = .26$; Cramer's $V = 0.07$) nor PA ($X^2(2, N = 221) = 1.41$, $p = .49$; Cramer's $V = 0.08$).

5.5 Relationships Between Stress, Burnout, Social Support, and Intention to Leave

5.5.1 Correlations

Table 7 shows two-tailed Pearson's correlations between MHPSS subscales, stress, EE, DP, PA, social support, and intention to leave. Overall, there were significant correlations between all scales and subscales apart from a nonsignificant relationship between DP and social support.

Table 7

Correlations Between Main Variable Scales and Subscales

	Variable	1	2	3	4	5	6
MHPSS subscales	Workload	–	.64**	.17*	−.24**	−.22*	.48**
	Client–Related Difficulties	–	.50**	.24**	−.19*	−.19*	.34**
	Organizational Structures and Processes	–	.46**	.15*	−.24**	−.46**	.43**
	Relationships and Conflicts With Other Professionals	–	.31*	.17*	−.21*	−.49**	.34**
	Lack of Resources	–	.47**	.25**	−.22*	−.28**	.41**
	Professional Self-Doubt	–	.38**	.29**	−.26**	−.16*	.35**
	Home–Work Conflict	–	.71**	.36**	−.33**	−.33**	.55**
1. Stress	(MHPSS total)	–					
2. EE		.67**	–				
3. DP		.31**	–	–			
4. PA		−.33**	–	–	–		
5. Social support		−.42**	−.28**	−.13	.34**	–	
6. Intention to leave		.56**	.65**	.28**	−.31**	−.37**	–

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

5.5.2 Moderation Analysis of Social Support on the Stress–Burnout Relationship

First of all, there were significant one-tailed correlations found between each predictor variable, stress and social support, and the corresponding outcome variables EE, DP, and PA, thus providing grounds for regression models for each dimension (Table C2 in Appendix C).

Model 1: Emotional Exhaustion. Table 8 shows the results of the first hierarchical regression model for the outcome EE using Stress as the focal predictor, Social Support, and the Stress x Social Support interaction term.

Table 8

Results for the EE Moderation Model

Variable	B	SE	t	p	95% CI
Step 1					
Intercept	0.02	1.62	0.01	.99	[−3.16, 3.21]
Stress	0.36	0.27	13.3	< .001**	[0.31, 0.42]
Step 2					
Intercept	0.30	3.28	0.09	.93	[−6.16, 6.76]
Stress	0.36	0.03	12.01	< .001**	[0.30, 0.42]
Social support	−0.02	0.18	−0.10	.92	[−0.37, 0.34]
Step 3					
Intercept	−2.99	6.74	−0.45	.66	[−16.27, 10.28]
Stress	0.41	0.10	4.32	< .001**	[0.23, 0.60]
Social support	0.25	0.51	0.49	.63	[−0.75, 1.24]
Stress x Social Support	−0.004	0.01	−0.56	.58	[−0.02, 0.01]

Note. B: unstandardized coefficients; *SE*: standard error of the coefficients; CI = 95% confidence intervals. Step 1: R^2 = .45 ($p < .001$); Step 2: ΔR^2 = .00 (p = .92); Step 3: ΔR^2 = .001 (p = .58). * $p < .05$. ** $p < .001$.

Results show that the Stress x Social Support interaction term did not explain a significant increase in MBI-EE variance scores (R^2 change = .001, $F(1, 217)$ = .31, p = .58) and that a significant interaction did not take place when the interaction term was added to the model (p = .58); there is no evidence of a moderating effecting of social support on the stress–EE relationship. This is further supported as the confidence interval for the interaction term crosses 0.

Model 2: Depersonalization. Table 9 shows the results of the second hierarchical regression model for the outcome DP using Stress as the focal predictor, Social Support, and the Stress x Social Support interaction term.

Table 9

Results for the DP Moderation Model

Variable	B	SE	t	p	95% CI
Step 1					
Intercept	3.70	1.15	3.21	.002*	[1.43, 5.98]
Stress	0.10	0.02	4.87	< .001**	[0.06, 0.13]
Step 2					
Intercept	3.70	2.34	1.58	.12	[−0.92, 8.31]
Stress	0.10	0.02	4.42	< .001**	[0.05, 0.14]
Social support	0.00	0.13	0.002	1.0	[−0.25, 0.25]
Step 3					
Intercept	0.89	4.81	0.19	.85	[−8.59, 10.36]
Stress	0.14	0.07	2.03	.04*	[0.004, 0.27]
Social support	0.23	0.36	0.63	.53	[−0.48, 0.94]
Stress x Social Support	−0.004	0.01	−0.67	.50	[−0.01, 0.01]

Note. B: unstandardized coefficients; *SE*: standard error of the coefficients; CI = 95% confidence intervals. Step 1: R^2 = .10 ($p < .001$); Step 2: ΔR^2 = .00 ($p = 1.0$); Step 3: ΔR^2 = .002 ($p = .50$). * $p < .05$. ** $p < .001$.

Results show that the Stress x Social Support interaction term did not explain a significant increase in MBI-DP variance scores (R^2 change = .002, $F(1, 217) = .45$, $p = .50$) and that a significant interaction did not take place when the interaction term was added to the model ($p = .50$); there is no evidence of a moderating effecting of social support on the stress–DP relationship. This is further supported as the confidence interval for the interaction term crosses 0.

Model 3: Personal Accomplishment. Table 10 shows the results of the third hierarchical regression model testing for the moderation of the outcome PA using Stress as the focal predictor, Social Support, and the Stress x Social Support interaction term.

Table 10

Results for the PA Moderation Model

Variable	*B*	*SE*	*t*	*p*	95% CI
Step 1					
Intercept	41.33	1.50	27.60	< .001**	[38.38, 44.28]
Stress	−0.13	0.03	−5.14	< .001**	[−0.18, −0.08]
Step 2					
Intercept	32.19	2.95	10.90	< .001**	[26.37, 38.01]
Stress	−0.09	0.03	−3.31	.001**	[−0.14, −0.04]
Social support	0.57	0.16	3.56	< .001**	[0.26, 0.89]
Step 3					
Intercept	33.86	6.07	5.58	< .001**	[21.89, 45.82]
Stress	−0.12	0.09	−1.34	.18	[−0.29, 0.05]
Social support	0.44	0.46	0.97	.34	[−0.46, 1.34]
Stress x Social Support	0.002	0.007	0.32	.75	[−0.01, 0.02]

Note. B: unstandardized coefficients; *SE*: standard error of the coefficients; CI = 95% confidence intervals. Step 1: R^2 = .11 ($p < .001$); Step 2: ΔR^2 = .05 ($p < .001$); Step 3: ΔR^2 = .000 ($p = .75$). * $p < .05$. ** $p < .001$.

Results show that the Stress x Social Support interaction term did not explain a significant increase in MBI-PA variance scores (R^2 change = .00, $F(1, 217)$ = .10, $p = .75$) and that a significant interaction did not take place when the interaction term was added to the model ($p = .75$); there is no evidence of a moderating effecting of social support on the stress–PA relationship. This is further supported as the confidence interval for the interaction term crosses 0.

6. Discussion

The aim of this investigation was to identify common sources of occupational stress in acute inpatient psychiatric units in Germany, measure the cumulative impact of these stressors and burnout experienced by nurses working in this setting, and explore the relationships between related factors such as social support, intention to leave, and sociodemographic or job-related characteristics. In summary, it was found that top stressors for this sample included lack of staffing and physically threatening and difficult or demanding patients. Main types of stressors causing the most stress included Workload, Organizational Structure and Processes, and Client–Related Difficulties. As for burnout, for the whole sample overall, EE level was moderate, while DP and PA levels were high (although high PA refers to low chances of burnout in this dimension). Regarding the proportion of those experiencing high burnout, 47.1% of this sample met criteria for EE, 52.5% for DP, and 21.7% for PA. Overall, the majority of nurses perceived high amounts of

social support available from coworkers and supervisors. Around 1 in 10 nurses indicated that they often think of leaving the profession or their current position.

Stress levels were significantly higher for nurses not in a leadership position and stress had significant positive correlations with years of experience on current unit, amount of overtime, and sick days. EE levels had significant positive correlations with sick days and amount of overtime, which was also reflected in the significant association between high EE category and overtime. DP levels were significantly higher for men, and there was a significant association between not being in a leadership position and high DP category. Age and experience in the profession were negatively correlated with DP level, while sick days had a positive correlation with DP level. Social support had significant negative correlations with age, years of experience in profession and on current unit, and number of sick days taken. Intention to leave was positively correlated with sick days. All MHPSS subscales had significant positive correlations with EE, DP, and intention to leave level, as well as significant negative correlations with social support and PA level; Home–Work Conflict appeared to have the strongest relationships overall. Similarly, significant positive correlations were found between stress, EE, DP, and intention to leave levels. There were significant negative correlations between stress level and social support and PA, respectively. EE and intention to leave both had significant negative correlations with social support. PA was positively correlated with social support and negatively correlated with intention to leave. The relationships between stress, burnout, and social support were further explored by testing for a hypothesized moderating effect of social support on the stress–burnout relationship; however, multiple regression modeling showed that there is no evidence of a moderating effect of social support on the relationships between stress and EE, DP, nor PA.

6.1 Discussion of Findings

6.1.1 Stressors

Various inpatient nursing contexts across Germany have also echoed the high negative impact stemming from organizational structures and factors (Bär & Starystach, 2018) such as high workload from lack of staffing and quantitative demands, as well as stress and emotional demands from difficult or aggressive patients (Angermeyer et al., 2006; Fischer et al., 2020; Moosler et al., 2010; Richter, 2014), and lack of recognition through fair pay (Reiff et al., 2020; Rohwer et al., 2020; Zander, Blümel & Busse, 2013). In regard to the specific context of German healthcare, hospitals suffer from low staffing numbers (Fischer et al., 2020; Rohwer et al., 2020) including in psychiatric wards (Löhr et al., 2015; Löhr & Sauter, 2020; Nienaber et al., 2018) and have high patient:nurse ratios (Aiken et al., 2002; Hanrahan et al., 2010) which echo the main stressors found in the study such as of lack of adequate staffing, too many patients, and lack of time. Conflicts with colleagues were not a main stressor for this sample, which contrasts with other studies where stress

from multidisciplinary colleagues such as doctors was found to be a main stressor among German nurses both in medicine (Moosler et al., 2010) and psychiatry (Angermeyer et al., 2006), as well as in other international samples (Foster et al., 2020; Hylén et al., 2018; Kipping, 2000; Roets et al., 2018; Sullivan, 1993; Van Bogaert et al., 2013; Wyder et al., 2017).

Similar studies using the MHPSS also found main stressor items to be lack of adequate staffing (Jenkins & Elliott, 2004; McTiernan & McDonald, 2015; Sorgaard et al., 2010) and dealing with threatening difficult patients (Jenkins & Elliott, 2004), especially lack of adequate cover in a potentially dangerous environment (McTiernan & McDonald, 2015). Results for the most stress–inducing subscales reflect previous studies, as Lack of Resources (Chalder & Nolan, 2000; Jenkins & Elliott, 2004; McTiernan & McDonald, 2015; Sorgaard et al., 2010), Workload (Jenkins & Elliott, 2004; Sorgaard et al., 2010), Client–Related Difficulties, and Organizational Structures and Processes (McTiernan & McDonald, 2015; Sorgaard et al., 2010) also had the highest means in other psychiatric nursing samples. In general, findings echo other international studies regarding main stressors for psychiatric nurses, including organizational processes and workload (Foster et al., 2020; Richter, 2014; Van Bogaert et al., 2013; Wyder et al., 2017) and client–related difficulties (Foster et al., 2020; Hasan et al., 2018; Hylén et al., 2018; Kipping, 2000; Roets et al., 2018; Van Bogaert et al., 2013), indicating that these are sources of stress inherent to the profession of psychiatric nursing.

6.1.2 Stress, Burnout, Social Support, and Intention to Leave Levels

6.1.2.1 Stress Level. The overall average stress level for this sample was comparable to McTiernan and McDonald's (2015) Irish study where hospital–based psychiatric nurses had a similar overall MHPSS mean rated as "moderate". In comparison, other countries reported higher levels of stress in psychiatric nurses (Chalder & Nolan, 2000; Jenkins & Elliott, 2004; Masa'Deh et al., 2016). The moderate ranges found in this present study may reflect the lower rated stressors, such as conflicts with other professionals, professional self-doubt, and home–work conflicts, which were found in other studies as described in the previous section. Additionally, the differences in results between countries reflect how different healthcare systems can affect the organizational structures in a workplace, and therefore employee's working conditions and perceptions thereof (Hill et al., 2006).

6.1.2.2 Burnout Levels. Regarding the levels of burnout on all three dimensions found in this psychiatric nursing sample, compared to another study among psychiatric nurses working in German hospitals, levels were similar for EE and DP, but PA scores were much lower (Schulz et al., 2009). Overall, burnout levels are similar to those in general German nurses in the study by Bakker et al. (2000); however, other German nursing samples found lower levels of EE and DP but comparable levels of PA (Angermeyer et al., 2006; Moosler et al., 2010; Priebe et al., 2005). In comparison to nursing staff working in mental health settings across Europe, the overall total

average levels were lower for EE and DP, and higher for PA (Sorgaard et al., 2010) than the levels found in this present study. Results from this study showing moderate to high levels of EE, indicating high burnout, alongside high levels of PA, indicating low burnout, is similar to other studies across Europe (Hill et al., 2006), the UK (Jenkins & Elliott, 2004; Prosser et al., 1999), Iran (Sahraian et al., 2008), and Canada (J. R. Robinson et al., 2003). This suggests that PA can have a protective factor for overall burnout as it contributes to resilience (Foster et al., 2019). The moderate level of EE found in this study is comparable to reviews and metanalyses of mental health professionals (O'Connor et al., 2018) and nurses (López-López et al., 2019). However, the reviews reported that most studies also showed moderate levels of DP and PA, whereas this current investigation had high DP and low PA overall. The high levels of DP found in this study and other German studies (Bakker et al., 2000; Schulz et al., 2009) may have cultural influences, as DP may be considered part of the professional role in Germany: for example, having a professional, stoic demeanor towards patients (Cordes & Dougherty, 1993) or seperating others from self (Schaufeli, 2017). Furthermore, German psychiatric nurses spend a vast majority of their time on nonpatient–related tasks (Hoffmann & Rieger, 2010) leading to little opportunity to therapeutically engage one-on-one with patients.

In contrast to the prevalence rates of burnout found in this study, other findings among nurses working in German psychiatric facilities showed lower proportions of staff experiencing high burnout (Angermeyer et al., 2006; Meßenzehl et al., 2006). Previous estimates of high burnout among German nurses in general ranged from 15% (Aiken et al., 2001) to 30% (Heinen et al., 2013) to over 50% (Fischer et al., 2020); this, along with current results, provides further evidence of increased burnout rates among German nurses over time (Zander, Dobler & Busse, 2013). In contrast to metanalytic prevalence estimations for the presence of high burnout among mental health nurses (López-López et al., 2019) and mental health professionals (O'Connor et al., 2018), the prevalence of low PA was similar; however, the proportion of nurses in this experiencing high EE and DP were much greater in this current investigation's sample. The high DP and PA found in this sample could be related to the high patient:nurse ratios standard in Germany's nursing care, as dealing with higher numbers of patients can increase feelings of PA but dealing with more acutely ill patients can also increase DP (Hill et al., 2006) as a defensive way of coping with the strain and the personal experience of EE due to ongoing person–environment imbalances caused by stressors such as high workload (Maslach et al., 2001; Maslach & Leiter, 2016). This could be an element of the unit culture shared amongst nurses on a particular ward. This may be further bolstered by the overall organizational climate, as theoretically, high DP may be related to impersonal organizational cultures with scant employee rewards, control or advancement opportunities, which can leave the employee feeling devalued and translate into an impersonal style of interacting with patients (Cordes & Dougherty, 1993).

6.1.2.3 Social Support Level. The majority of nurses in this sample perceived that there is both instrumental and emotional support available at work from coworkers and supervisors when needed, with slightly higher values for support from coworkers, which matches the findings from other German nursing studies (Van der Heijden et al., 2010) and parallels this present study's other results, as conflicts with colleagues was not a highly ranked stressor. This high level of support in general fits the teamwork image commonly associated with psychiatric units, as there is usually more social support from higher participation within a multidisciplinary team (Dolan, 1987; Konstantinos & Christina, 2008). However, high amounts of perceived social support contrasts with results from a study of Irish psychiatric nurses, where using social support reported to be the least used coping strategy for stress (McTiernan & McDonald, 2015) and differs from findings of a Dutch study where psychiatric nurses scored lower on social support scores than their cohorts in medical care (Tummers et al., 2001).

6.1.2.4 Intention to Leave Level. Intention to leave was lower amongst this sample compared to previous reports of German nurses working in heterogenous settings, as 17% and 36% intended to leave the profession and their current workplace, respectively (Heinen et al., 2013). This is also lower than levels worldwide with up to 54% of nurses intending to leave the profession (Flinkman et al., 2010). This again may highlight the differences in working in psychiatry versus other contexts, especially in Germany, as the medical sector uses diagnosis-related groups (DRGs) to guide care and remuneration, which ultimately results in increased workload (Rafferty et al., 2019) and decreased satisfaction (Zander, Dobler & Busse, 2013) for nurses and may lead to higher intention to quit; whereas German psychiatry uses the PEPP (Schulz et al., 2009).

6.1.3 Differences in Stress, Burnout, Social Support, and Intention to Leave Levels According to Sample Characteristics

6.1.3.1 Differences in Stress Levels. Stress levels were significantly higher for nurses not in a leadership position with a medium effect size ($d = 0.38$); however, there were no significant differences in stress levels regarding gender, professional group, or education. This may be because, unlike having a leadership role, these other factors may not influence a nurse's role on the unit and therefore create no differences in exposure to stressors. Theoretically, career development opportunities to advance are connected to lower stress (Colligan & Higgins, 2006) and can be seen as a form of reward. Nurses in management positions are typically less stressed as they have more autonomy, resources, and higher status, which lowers the risk for poor psychological outcomes (Bär & Starystach, 2018). Nurses in leadership positions, such as charge nurses, often have less direct contact and responsibility over individual patients, leading to potentially less stress from workload, time pressure, and patient–related issues. This goes to show how status, rewards, resources, and access to them within an organizational structure of a hospital can have an impact on the mental health of nurses, which echoes theories of stressors spanning a variety of settings

including factors unique to the job, role in the organization, career development, interpersonal relationships at work, and the structure or climate of the organization (Murphy, 1995).

Nurses with more experience on their current unit of employment had significantly higher stress levels, but this correlation was small. However, there were no significant relationships with age, experience in the profession, nor experience in acute psychiatry. In contrast with the lack of a significant relationship between stress and age, a review article on the role of stress and strain on nurses from an international perspective found that for German nurses, stress levels were linked with age of the nurse (Lambert & Lambert, 2001). Other contradictory findings include a review of mental health nursing stress, where higher stress was connected to less experience due to a lack of recognition for their role, especially within the multidisciplinary team (Konstantinos & Christina, 2008), as role conflict or ambiguity contributes to higher stress (Babatunde, 2013; Colligan & Higgins, 2006). Thus, stress levels in this sample may be more related to the experience of a nurse on a specific unit within an organization rather than amount of experience in the profession or care sector overall which highlights the contribution of organizational structures and processes to stress, as seen previously in the results. Additionally, senior nurses on a particular unit may feel directly confronted with restrictions in their practice (López-López et al., 2019) due to organizational barriers, such as limits on advanced practice positions, decision–making powers (Zander, Blümel & Busse, 2013), and influence within hierarchies (Hasselhorn et al., 2008).

A significant, small relationship was found between higher stress levels and working more overtime hours per week; however, hours worked per week as per contract did not have a significant relationship with stress. Higher amount of overtime worked per week may contribute to stress not only due to more contact with patients and other workplace stressors, but also may reflect an ongoing stressful working environment due to overall poor unit functioning with possible chronic staffing issues or high acuity due to a very ill patient population. These setting–specific factors are in line with previous investigations of high stress related to quantitative demands for German psychiatric nurses (Fischer et al., 2020) and theoretical explanations of stress and how persistent demands, high amounts of pressure, and low job control contribute to stress among individuals in an organization (Colligan & Higgins, 2006; Murphy, 1995).

There was a highly significant, small positive correlation between stress level and amount of sick days taken in the past year, fitting to the literature that workplace stress is connected to absenteeism (Babatunde, 2013). For example, a variety of health disorders, including physical illnesses and poor mental health, are precipitated by stress (Colligan & Higgins, 2006; Kelloway & Day, 2005; Yaribeygi et al., 2017) which could lead to increased sickness leave. Furthermore, absenteeism, whether due to turnover or sickness, contributes to understaffing (Aiken et al., 2001), which ties into the 'lack of staffing' stressor finding in this current study.

6.1.3.2 Differences in Burnout Levels. To summarize, no significant relationships were found in any burnout dimension according to professional group, education level, or years of

experience in acute psychiatry and on current unit of employment. In contrast to the lack of a significant association or correlations between EE, gender, and age in this sample and in one previous German psychiatric nursing study (Fisher et al., 2020), female gender was related to higher EE in other German samples (Angermeyer et al., 2006; Priebe et al., 2005) and in human services (Maslach et al., 2001), whereas male gender has also been associated with higher EE in mental health nurses (López-López et al., 2019). Furthermore, there were no differences in EE levels due to age or education level, although a metanalysis of mental health professionals found that higher education was associated with higher EE levels and increased age has been found to be related to lower amounts of EE (Lim et al., 2010). However, the nonsignificant relationships between EE and age, along with years of experience in current ward or acute psychiatry may be related to the confounder of survival bias, where those with high burnout, which is most obviously manifested and personally experienced as EE, may have already left their jobs (Cordes & Dougherty, 1993; Maslach et al., 2001; Maslach & Jackson, 1981). Professional group did not have a significant relationship with EE; this may be due German nurses having ward roles regardless of specialization, and therefore similar stressors and outcomes.

On the other hand, higher EE scores had a significant small positive correlation with amounts of overtime worked. This relationship was also shown in the significant association between high burnout in the EE dimension and working overtime with a strong effect (Cramer's V = 0.23), echoing previous literature linking burnout with longer work hours (Lim et al., 2010) and increased patient contact (Velando-Soriano et al., 2020). However, hours worked per week had no significant relationship with EE; this can be viewed through the theoretical lens that having limited opportunities to recover can contribute to high EE (Maslach & Leiter, 2016) as appropriate shift scheduling provides rest between shifts, whereas working overtime may encroach on recovery time, which could also factor into the highly significant, medium-sized positive correlation of EE with sick days. This association between higher EE and more sick days reflects the fact that reduced mental and physical health is linked to unhealthy work–related behavior and experience (Schulz et al., 2011) shown in the connection stress and burnout have with sickness absences in nurses all over the world in various settings (Edwards & Burnard, 2003; López-López et al., 2019; Maslach & Leiter, 2016; Richter, 2014; Schulz et al., 2011).

Regarding cynicism, DP levels were significantly higher for men with a small to medium effect size (d = 0.33), which contrasts with Fischer et al.'s (2020) study which found no connection between gender and burnout. However, finding is consistent with other results (Kilfedder et al., 2001; Lim et al., 2010; Maslach et al., 2001; Sahraian et al., 2008; Sorgaard et al., 2010). However, no significant associations between gender and high burnout classification in the DP dimension were found. Nurses of younger age and less experienced in the profession had significant, small positive correlations with DP unlike recent findings in other German psychiatric nurses (Fischer et al., 2020). This finding is also congruent with evidence that burnout is more often reported among

younger (and often less experienced) employees (Bakker et al., 2000; Lim et al., 2010) but is contrary to the positive relationship between age and DP found in other metanalyses (López-López et al., 2019; O'Connor et al., 2018).

Although there were no significant differences in level of DP based on leadership position, there was a strong significant association (Cramer's $V = 0.20$) between leadership position and high burnout category for DP (Table 4); this can be related to the fact that having a leadership position often reduces one-on-one responsibilities and direct contact with patients, thus decreasing the risk of burnout (Velando-Soriano et al., 2020). Additionally, having a leadership position can contribute positively to the perception of the fairness domain of organizational factors of burnout due to increased decision–making powers and therefore could be a protective factor against developing cynicism (Maslach et al., 2001; Maslach & Leiter, 2016). Hours worked per week as per contract also had a significant, small negative correlation with DP, which contradicts other findings connecting longer hours to higher amounts of DP (Lim et al., 2010). Sick days had a highly significant, small positive correlation with DP, further lending to the sickness–burnout relationship seen in other research both globally and in Germany (Edwards & Burnard, 2003; López-López et al., 2019; Maslach & Leiter, 2016; Richter, 2014; Schulz et al., 2011). No significant differences were found in DP levels or categories according to professional group, overtime worked, or education level. However, higher education has been associated with lower DP previously (Maslach & Jackson, 1981). Similarly, experience in acute psychiatry and on current unit, as well as amount of overtime, had no significant relationships with DP.

There were no significant relationships between PA and any job or demographic variable, which parallels the lack of a connection between burnout and age, gender, and leadership found among other German psychiatric nurses (Fischer et al., 2020). However, this is contrary to previous connections between higher rates of PA and higher education (Lim et al., 2010), experience (Moosler et al., 2010), and age (Lim et al., 2010; O'Connor et al., 2018; Sahraian et al., 2008). Unlike in this present study, higher rates of PA often occur in older individuals to provide a protective factor against burnout. However, this variable of age is confounded both with work experience, adaptation of expectations to fit reality, and the problem of survival bias, as those who experience burnout likely quit their jobs whereas those with lower levels of burnout remain (Cordes & Dougherty, 1993; Maslach et al., 2001; Maslach & Jackson, 1981). The lack of significant relationships between age and experience with PA may be due to nurses with more experience feeling more confronted with work–related restrictions, often due to organizational structures and processes, creating a lack of space to grow within their professional identity (López-López et al., 2019) or creating a sense of lack of control (Maslach et al., 2001) and role ambiguity as their roles no longer match their skills or experience (Cordes & Dougherty, 1993). On the other hand, in light of the lower education requirements, poor advancement opportunities in the field of direct patient care (Zander, Blümel & Busse, 2013), and prevalence of tasks performed below skill

level (Bruyneel et al., 2013; Reiff et al., 2020), German nurses may feel high PA regardless of age, experience, specialization, or education as the job matches personal expectations and intrinsic rewards (Maslach et al., 2001). Overall, the fact that this current investigation was conducted in a very specific setting compared to the cited literature may lend to the differences in relationships between burnout and sociodemographic or job–related variables.

  6.1.3.3 Differences in Social Support Levels. Increased age, years of experience in the profession and on the current unit, and sick days had small, significant relationships with lower perceived levels of social support. Lower perception of support available for older nurses with more experience fits previous research where workplace support declines with age (Van der Heijden et al., 2009; Van der Heijden et al., 2010). This may possibly be due to increased expectations of independence and mastery that go along with seniority, as support is more likely to be needed by and provided to new or younger nurses through both informal and formal strategies. Furthermore, midcareer nurses may have difficulties with social support as an increased burden from work and life demands may limit their efforts regarding social support (Van der Heijden et al., 2010). Regarding sick days, as no causation can be interpreted from this relationship, absence due to sick days may have the effect of decreasing perception of support due to distance from workplace; on the other hand, those who feel a lack of support at work may feel higher stress and cope via avoidance and absenteeism (Colligan & Higgins, 2006). There were no significant relationships between social support and experience in acute psychiatry, hours worked per week, amount of overtime hours worked per week; nor were there significant differences in social support level according to gender, professional group, education level, or having a leadership position.

  6.1.3.4 Differences in Intention to Leave Levels. Nurses who reported higher intention to leave the current job and/or the profession also had a higher number of sick days taken in the past year, with a medium sized correlation. This fits previous research showing that absenteeism can indicate a withdrawal process from the job among nurses (Van der Heijden et al., 2010). Sickness leave is a form of absenteeism or job withdrawal often linked to stress and burnout (Zander, Blümel & Busse, 2013) and may reflect maladaptive coping behavior through avoidance, signalling decreased organizational commitment (Maslach et al., 2001; Maslach & Leiter, 2016) which can lead to intention to leave. Furthermore, increased nurse participation in the organization has been linked to decreased intention to leave (Heinen et al., 2013), whereas a nurse with higher sickness absences may participate less in the organization, contributing to increased intention to leave. There were no significant relationships between intention to leave and any other sociodemographic or job–related variables, which contrasts with associations found between higher intention to leave and age among German nurses in general (Heinen et al., 2013), male gender (Flinkman et al., 2010), and working less hours (Barron & West, 2005; Heinen et al., 2013). The lack of an association between intention to leave and education level echoes a European study of nurses (Heinen et al., 2013) but contrasts with other findings connecting greater experience with decreased

intention to quit (Barron & West, 2005; Flinkman et al., 2010; L. J. Hayes et al., 2006; Ito et al., 2001; Lum et al., 1998). While there was no significant association between intention to leave and leadership position, managerial duties have been tied to risk of leaving the profession (Barron & West, 2005). There were no significant relationships between intention to leave and professional group, although higher professional qualifications can be associated with higher intention to leave (Flinkman et al., 2010). Differences between these findings and those from previous studies may be due the very specific setting of this investigation.

6.1.4 Relationships Between Stress, Burnout, Social Support, and Intention to Leave

6.1.4.1 Correlations. Higher stress levels, along with higher scores on any MHPSS subscale, were significantly related to higher EE, DP, and intention to leave, as well as decreased feelings of PA and lower perceived social support. Theoretically, the stress subscales interrelate with the organizational risk factors for burnout (workload, control, reward, community, fairness, and values), where an imbalance between an individual and these factors can contribute to burnout (Maslach et al., 2001; Maslach & Leiter, 2016).

EE scores had significant, positive large-sized correlations with total stress and the subscales Workload, Client–Related Difficulties, and Home–Work Conflict, whereas medium-sized positive correlations were found with the remaining MHPSS subscales. Regarding studies using similar stress and burnout scales, in contrast, Jenkin and Elliot's (2004) study showed no significant relationship between EE and Workload, and client–related issues only played a minor role in burnout in a Danish sample of psychiatric nurses (Jørgensen et al., 2021). DP had a significant, positive large-sized correlation with overall stress level, a medium-sized positive correlation with Home–Work Conflict, and small positive correlations with the other six subscales. To compare, Jenkin and Elliot's (2004) study found significant relationships between DP and Workload, Organizational Structure and Processes, and Lack of Resources, while no significant relationships were found with the other four subscales. In this study, PA levels showed the same correlations as DP levels but in the opposite direction, including a large negative correlation with stress level, a medium-sized negative correlation with Home–Work Conflict, and small negative correlations with the other six subscales. In comparison, Jenkin and Elliot (2004) found no significant relationships between PA and any MHPSS subscale, as stress levels overall were only significantly correlated with DP and EE.

These relationships of stressors with the burnout dimensions, especially regarding EE, echo previous studies in Germany (Bakker et al., 2000; Demerouti et al., 2000; Moosler et al., 2010), Europe (Aiken et al., 2002; Tummers et al., 2001), and internationally (Edward et al., 2017; Levert et al., 2000; López-López et al., 2019; Melchior et al., 1997; O'Connor et al., 2018), essentially indicating that any workplace stressors can contribute to burnout, and can be compared to the interrelated theoretical domains of causing burnout in an organization (Maslach & Leiter, 2016;

Schaufeli et al., 2009), particularly in the strong association between high workload and EE (Maslach et al., 2001). The differences found between this study examining a very specific group of nurses and other studies lend to the proposition that different occupational contexts, including areas of healthcare as well as different organizations, come with their own constellations of work demands and conditions which can contribute uniquely to burnout (Fischer et al., 2020; Schulz et al., 2009). This parallels the context–related nature of burnout (Maslach & Leiter, 2016) through the lens of individual perception of and responses to stress (Colligan & Higgins, 2006).

Social support levels had significant negative relationships with the MHPSS, including medium-sized correlations with total stress level, Organizational Structure and Processes, Relationships and Conflicts With Other Professionals, and Home–Work Conflict, and small correlations with the remaining MHPSS subscales. Other studies involving German nurses found also associations between interpersonal difficulties in the workplace and higher distress (Lambert & Lambert, 2001). These results mirror previous findings of negative relationships between workplace support and stress (AbuAlRub, 2004; Hamaideh, 2011; Sundin et al., 2007). This supports the general perception that social support be a protective factor against stress for nurses in the workplace (Cordes & Dougherty, 1993; Demerouti et al., 2000; López-López et al., 2019; Shen et al., 2005) and alleviates work–home conflicts (Cortese et al., 2010). As correlations cannot provide cause-and-effect explanations, these results could be interpreted either as showing that workplace support may provide instrumental help or coping, thus lessening the impact of stressors (Leiter, 1988; López-López et al., 2019) or, on the other hand, that nurses working on units with high demands as indicated by the stress subscales may be less likely to be able to help one another, thus lending to an environment of lower support. The inverse relationship between social support and conflicts, either at work or at home, may reflect the presence of negative social encounters (Button, 2008; Leiter, 1988).

Intention to leave levels had significant positive large-sized correlations with total stress level and Home–Work Conflict, and medium-sized positive correlations with the remaining six subscales. This link between work–life conflicts, especially due to shift work, and intention to quit is well documented among German nurses (Rafferty et al., 2019) and internationally (Flinkman et al., 2010; L. J. Hayes et al., 2006) as shift work may interfere with family and social life, contribute to lower commitment to the job, and increase intention to leave (Flinkman et al., 2010; Rafferty et al., 2019). Results also echo previous findings among German nurses linking intention to leave with workload and perceived lack of adequate staffing (Heinen et al., 2013), as well as fall under the push factors influencing nurses in Germany to leave the profession (Heinen et al., 2013; Reiff et al., 2020). In other nursing samples, intention to leave was associated with lack of responsibility or autonomy (Barron & West, 2005; Flinkman et al., 2010), and organizational characteristics (L. J. Hayes et al., 2006). Furthermore, Home–Work Conflict as a stressor type

appears to have the strongest relationship all around with burnout, social support, and intention to leave among this sample; this may be related to German cultural values for work–life balance.

Additionally, EE, DP, PA, social support, and intention to leave all had significant relationships with each other, apart from DP with social support. Lower perceived social support was related to higher EE, with a small-sized correlation, and low PA, with a medium-sized correlation. Although these results echo findings tying a lack of social support to higher burnout (in the EE and PA dimensions) in various German psychiatric professions (Meßenzehl et al., 2006), one German psychiatric nurse sample found no significant relationship between social support and burnout (Fischer et al., 2020). However, overall the ties between low social support and higher burnout is well documented (AbuAlRub, 2004; Edward et al., 2017; Hamaideh, 2011; Hylén et al., 2018; O'Connor et al., 2018; Shen et al., 2005; Sullivan, 1993; Sundin et al., 2007) especially regarding EE (Kilfedder et al., 2001; R. T. Lee & Ashforth, 1996; López-López et al., 2019; Woodhead et al., 2016). The correlation between the presence of social support and increased PA is supported by literature as well (Leiter, 1988, 1990, 1991; Van Der Heijden, 2003; Woodhead et al., 2016). The lack of a significant relationship between DP and social support contradicts previous studies where lower social support was related to higher DP in German psychiatric samples (Meßenzehl et al., 2006) as well in other studies and and meta-analyses (Kilfedder et al., 2001; Leiter, 1990, 1991; Velando-Soriano et al., 2020). Overall, the relationship of a lack of social support to increased PA and EE shows an imbalance between the individual and the organizational factor of community (Maslach et al., 2001; Maslach & Leiter, 2016).

EE had the strongest relationship with intention to leave, followed by PA, then DP. Similarly, EE in particular is related to higher consideration of resigning in nurses (Konstantinos & Christina, 2008; López-López et al., 2019; Rafferty et al., 2019) and DP is considered to be indicative of turnover (Maslach & Leiter, 2016). These findings also support studies showing that overall burnout is linked to intention to quit (Flinkman et al., 2010; Heinen et al., 2013) and related concepts such as lower job commitment (López-López et al., 2019; Voltmer et al., 2013), job withdrawal and turnover (Cordes & Dougherty, 1993; Maslach et al., 2001; Maslach & Jackson, 1981; Maslach & Leiter, 2016) and job satisfaction, which is well documented in nursing worldwide (Dolan, 1987; Konstantinos & Christina, 2008; Meßenzehl et al., 2006) and in Germany (Heinen et al., 2013; Meßenzehl et al., 2006; Zander, Blümel & Busse, 2013).

Higher perceived social support in the workplace was related to lower intention to leave, with a medium-sized correlation, which echoes previous studies (L. J. Hayes et al., 2012) including those involving European nurses (Van der Heijden et al., 2010) and in international samples (AbuAlRub et al., 2009; Chen et al., 2008; Ito et al., 2001). This is backed by burnout theory as well, as a lack of community, as evidenced by a dearth of supportive relationships, increases the risk of job disengagement (Maslach & Leiter, 2016).

6.1.4.2 Moderation Models. The role of social support in the relationship between stress and burnout was further investigated using three hierarchical regression models. Results of the moderation analysis modeling show that there is no evidence of a moderating effect of social support on stress–burnout relationship for neither EE, DP nor PA, as evidenced by the lack of significant t-test statistics for the Stress x Social Support interaction term. This result is further supported by the fact that the confidence intervals for the interaction term crossed zero in each model (A. F. Hayes, 2013). This means that the effect of stress on burnout is neither conditional nor dependent on the presence of social support, and that adding the interaction term did not contribute to an estimation of stress predicting burnout. Therefore, the hypothesis that social support buffers the relationship between stress and burnout was rejected. Due to this lack of evidence of a moderation, further investigation of the moderating effects of burnout using probing was not necessary.

However, additional interpretation of the regression models can provide more insight into the relationship between the variables at hand. The first step in the first model of stress as a predictor for EE showed that stress accounted for 44.7% of the variability in EE. Stress was a significant contribution to the model as there was a highly significant, large positive correlation between stress and EE. When adding social support to the model as the second step, there was neither a significant change in the model nor added explanation of the variability of EE as an outcome as indicated by the R^2 change, despite the highly significant, small-sized negative correlation between social support and EE. This means that social support had no significant effect on the model. Including the interaction term in the final step explained very little any further variance in the model and this change was also not significant. The confidence interval for social support as a predictor and the interaction term straddled zero, indicating further that there is no moderating effect, and providing the additional information that support had an inconsistent relationship with EE as it may have contributed to lower MBI-EE scores in some of the sample but increased it in others. Overall, this means that the effect of stress on EE is not conditional on the presence of social support, as there was no evidence that social support moderates this relationship.

The second model using DP as the outcome showed very similar results to the first model. The first step in the model showed that stress accounted for 9.8% of the variability in MBI-DP scores as an outcome. Stress was a significant contribution to the model, as there was a highly significant, medium-sized positive correlation between stress and DP. When adding social support to the model, results were similar as for the previous model of EE: there was no significant change in the model nor added explanation in the variability of the outcome as indicated by the R^2 change, as there was only a significant weak negative correlation between DP and social support. This means that social support had no significant effect on the model. Moreover, including the interaction term provided very little added explanation to the model and was nonsignificant. The confidence intervals for social support as a predictor and the interaction term crossed 0, indicating

further that there is no moderating effect, and shows that support had an inconsistent relationship with DP, as social support contributed to a nonsignificant amount of lower DP scores in some of the sample but may led to higher scores in others. Thus, the effect of stress on DP is not conditional on the presence of social support, as there was no evidence that social support moderates this relationship.

As for the third model, stress accounted for 10.8% of the variability in MBI-PA scores as an outcome. Stress was a significant contribution to the model, as there was a significant, medium sized negative correlation between stress and PA. When adding social support to the model, there was a significant change in the model as it accounted for an additional 5% of variability in PA as an outcome, which reflects the significant medium-sized positive correlation between PA and support. However, including the interaction term provided no further explanation to the model as was not significant and the confidence interval straddled 0, thus providing evidence that the effect of stress on PA is not conditional on the presence of social support, and there is no evidence that social support moderates the stress–PA relationship.

Overall, stress proved to be a significant predictor of burnout, especially for EE, which is consistent with the previously discussed findings and literature concerning correlations between social support and stress. However, social support failed to serve as a significant predictor for EE and DP, although it was significant in explaining a small portion of PA. The lack of significant changes in the EE and DP models in the second and third steps indicate that adding neither social support as a predictor nor interaction term provided any new information about individual differences in burnout not yet provided by the first step of the model with stress as a predictor. However, the modeling adds the finding that in this sample, social support has the strongest relationship with PA and serves as a significant predictor of it, whereas social support does not appear to predict burnout significantly, consistently, nor adequately on the other two dimensions.

The lack of a moderating role of social support in the stress–burnout relationship in this sample contradicts previous studies finding a buffering relationship of social support for the relationship between workload and burnout (Vander Elst et al., 2016) especially regarding EE (Jenkins & Elliott, 2004; Ogus, 1990; Tummers et al., 2001; Weigl et al., 2016), as well as findings of a reverse buffering relationship, where the presence of social support was related to stress predicting higher burnout (Button, 2008) especially regarding DP (Jenkins & Elliott, 2004). The referenced studies used different models and scales for the measurement of either stress (Ogus, 1990; Weigl et al., 2016), social support (Jenkins & Elliott, 2004), burnout, or all three (Button, 2008; Tummers et al., 2001; Vander Elst et al., 2016), which may contribute to different findings regarding the buffering hypothesis. Furthermore, differences in modelling such as adding further "stress" predictors may also contribute to the differences, as this current study included only the total MHPSS score as a predictor rather than MHPSS subscales to increase statistical power, as all subscales were significantly correlated with the outcome variables anyway. As the primary aim of

the investigation was to test for moderating effects of social support on the stress–burnout relationship, only these three main variables were included; therefore, the effects of other variables were not controlled for, as was the case in some of the compared studies (Button, 2008; Tummers et al., 2001; Vander Elst et al., 2016; Weigl et al., 2016). However, a number of other possible predictors, such as sociodemographic or work-related variables, were scanned for correlations with the predictors and outcome and would have been included had they shown significant correlations.

Moreover, the studies providing evidence of a buffering effect (or reverse buffering effect) were conducted in different countries outside of Germany aside from Weigl et al., 2016; however, that study only included supervisor support in the model and the sample of nurses were not from psychiatric settings. All comparable studies also all included healthcare personnel in their samples besides qualified nurses working in psychiatry, such as unqualified staff or medical nurses, in their overall investigation (Button, 2008; Jenkins & Elliott, 2004; Ogus, 1990; Tummers et al., 2001; Vander Elst et al., 2016; Weigl et al., 2016). In contrast, this current investigation was limited to a specific group of professionals working in a very specific setting at least 5 years after the comparison studies, which highlights the importance of examining stressors and burnout in a context–specific manner (Fischer et al., 2020; Schulz et al., 2009).

Regarding the theory of the moderating role of social support on the stress–burnout relationship, no evidence supporting the moderation hypothesis was found, therefore there was no evidence that the relationships between stressors and burnout were stronger for those with higher social support than those with lower support (S. Cohen & McKay, 1984; Maslach et al., 2001). The lack of social support predicting EE and DP on its own also does not support the hypothesis of the main effect of social support on burnout either, although this may not be the case for PA. This contradicts previous findings of the strong connection social support has with DP and EE (R. T. Lee & Ashforth, 1996), especially that social support is a main factor in relieving EE and DP (López-López et al., 2019; Velando-Soriano et al., 2020). However, the positive relationship between PA and social support has been recognized previously (Leiter, 1988, 1990; Van Der Heijden, 2003). The stronger relationship between PA and workplace social support (compared to EE and DP) may indicate differences in how workplace support is used by the nurses included in this study. For example, social support has been seen to protect against burnout and distress by lessening the negative impact of exhaustion due to emotional labour in psychiatric nursing (Edward et al., 2017), which would then relate to EE. However, in this sample, it could be hypothesized that workplace social support is potentially used more prominently to advance skills and competencies, as the social support variable served as a predictor of PA in the model, than it is used to lessen the effects of stress on the personal experience of EE or on DP as a possible coping mechanism. The differences could be due to organizational culture in the professional workplace, or an overall cultural difference for workplaces in Germany compared to other countries. Additionally, the results of this investigation further highlight the complicated nature of the relationships that social

support has with stressors and burnout in regard to the perception or content of the social interaction. For example, among these nurses in this study, instrumental help from others (which is reflected in the social support scale COPSOQ B.8, questions 1 and 3) may help solve problems, which would serve to protect against burnout (Boren, 2014) unless the support received was perceived as unhelpful or inadequate (Button, 2008). As for emotional support (reflected in the social support scale COPSOQ B.8, questions 2 and 4), these interactions could be either positive or negative based on the content, as nurses who engage in co-rumination about problems with coworkers may suppress the beneficial effects of support on burnout, whereas others may have a benefit if the interactions were positive and focused on problem solving (Boren, 2014).

6.2 Limitations

There are a number of methodological limitations of this study. First, as this study is cross-sectional, no casual inferences can be drawn. Nonprobability convenience and purposive sampling was used as this study was exploratory in nature, and to cast a wide net for potential participants. Although this subjects it to potential sampling biases, this method was deemed most appropriate due to the resources for recruiting available. The fact that the data was self-reported and cannot be independently verified creates several possible biases including selective memory, attribution, exaggeration, or telescoping (*Research Guides*, n.d.). Additional issues with self-report measures specific to this population include that nurses may be socialized in their profession into not signaling ineptitude (Hughes & Umeh, 2005) and accepting that stress and burnout symptoms are simply part of the job, thus biasing their personal reports of their experiences. Furthermore, although the questionnaire was designed to weed out unwanted participants with the inclusion and exclusion criteria, those who participated were not officially verified to be current, qualified workers in the profession; the possibility of the sample containing participants who do not meet criteria is even higher as informal social networks were used as one of the methods to distribute the survey. However, further identifiers to verify professional status or experience may create issues with anonymity or possibly lower participation rates.

Possible confounders could result from the demographic and job variables used. Although the sample size was large enough for the statistical tests and included a representative gender ratio, the overall sample was quite young with little experience. This may add to overall bias and confounders, especially representing the amount of burnout, due to research showing that burnout is disproportionally reported in young employees and that the variables of age and experience may also be affected by the survival bias where only those who had low burnout or stress remain in their jobs (Cordes & Dougherty, 1993; Maslach et al., 2001; Maslach & Jackson, 1981) and the fact that nurses may use acute inpatient jobs as a jumping off point for their career, soon leaving for other settings (Richards et al., 2006). Moreover, the demographic variable education was generally assumed to mean formal education advancing knowledge of this particular field of work; however,

subject area was not always specified. Additionally, no differences were examined according to specialized training in psychiatry (*Weiterbildungen*) as this does not add to a traditional step up in education level nor specialization. The variable leadership position also did not differentiate between positions of charge nurse, education liaison, or management; all of which have different roles and experiences. Furthermore, there could be unmeasured confounders exuding influence; for example, family and socioeconomic status were not included variables because they do not affect the workplace context.

Regarding the scales used, overall comparability with other studies can be limited due to the wide variety of scales measuring similar concepts used in previous research. Furthermore, the scales used were self-report and not all standard indices of behavior or health. Moreover, there was no evidence found that the MHPSS has been previously used in this population; thus the scale was prepared for use in the German language using back-translation techniques with testing which may still contain errors due to the source language's structure and biases due to recall of the translators (Maneesriwongul & Dixon, 2004) and back-translation techniques may not be sufficient for a valid translation (Squires et al., 2014). However, measures of internal consistency showed that the scale overall and its subscales had good internal consistency (see Appendix B) similar to values reported for the original questionnaire. The Likert scale used in the MHPSS (*applicable to me* to *not applicable to me*) is relatively ambiguous and up to interpretation; however, this may lend to the theoretical background of occupational stress as an imbalance due to individual perception within an organization, including transactional theory (Lazarus & Folkman, 1987), and the MHPSS subscales pair well with theory presented too (Colligan & Higgins, 2006; Maslach et al., 2001; Maslach & Leiter, 2016; Murphy, 1995). This scale targets a range of mental health professions in a variety of settings, which fits the purpose of the overall larger survey but not this context–specific investigation involving only nurses; however, comparable studies using this scale with mental health nurses have been conducted (e.g., Chalder & Nolan, 2000; Jenkins & Elliott, 2004; McTiernan & McDonald, 2015; Sorgaard et al., 2010). Furthermore, although similar studies reported classifications of stress level based on the MHPSS total score (e.g., McTiernan & McDonald, 2015), no official scoring procedure to classify stress levels was found, which limits comparability and generalizability.

As for the MBI-HSS, although it is widely used and accepted, there are criticisms of the psychometric limitations of the scale, wordings, and overall conceptualization (Halbesleben & Demerouti, 2005). Specifically, EE may be overreported as it is the most obvious manifestation of burnout experienced individually (Maslach et al., 2001), although this may not be the case in this study, as overall moderate EE levels were reported. This investigation used the MBI-HSS case cutoffs for mental health professionals, which have a wider threshold for the categorization of high burnout compared to cutoff values for medical professionals, whereas this may not fit the cultural conceptualization of mental health care or nursing practice in Germany, where the health system

tends to align with the biomedical model (Rafferty et al., 2019). However, mental health professional cut-offs were used as the sample works in mental health. The different MBI-HSS cutoff thresholds also may limit comparability between studies, as not all studies indicate thresholds used. Furthermore, stress and burnout are theorized to be dynamic, as the person–environment relationship is not constant over time nor from one task to another, whereas scales in cross-sectional designs measure it as static (Babatunde, 2013; Lazarus, 1991); this especially pertains to acute inpatient services. Concerning the COPSOQ-III scales (social support and intention to leave), the overall scale has been widely used internationally, including in Germany (Nübling et al., 2014); however, the individual scales used in this study were not often used in other studies and they comprised a small number of items, which can be statistically limiting.

As this investigation was mainly explorative in looking for relationships between the individual and job characteristics with the main outcome scales, no overtly stated, directional hypotheses were tested to explore these relationships (Field, 2009) (aside from the moderation analysis), also due to the fact that most previous literature was divided. Thus, the two-tailed statistical testing used in the explorative part has reduced power to detect effects compared to one-tailed testing. Regarding the moderation analysis, although the regression models in this investigation passed major assumptions to ensure model fit (see Appendix C) which adds to generalizability of the findings, the predictors included did have significant correlations with external variables not included in the model, as well as with each other (Tables 6, 7, and C1). This means that there are possible confounders in the EE and DP models, although this may not impact the results for PA, as there was a lack of significant correlations with the personal or job–related characteristics measured in this study. Additionally, the DP had a small significant one-tailed correlation and failed to have a two-tailed correlation with social support, indicating that social support may have served as a poor predictor. As the moderation models in this investigation included only stress and social support as predictors in order to test for a significant interaction, the assumption of multicollinearity between the predictors for multiple regressions was void (A. F. Hayes, 2013). However, the correlations between stress and support may affect the interpretation of social support as an individual predictor (step 2 of the models); therefore, to avoid added misinterpretation, the b coefficients were not interpreted (Field, 2009). Additionally, social support and intention to leave were kept as a single continuous variables rather than being split into groups (per source of social support source or intention to leave current job versus profession) or high and low categories in order to ensure statistical power, avoid arbitrary distinctions due to mean or median splits (A. F. Hayes, 2013), or potentially decrease reliability by using less than three items for measuring a construct (M. A. Robinson, 2018).

Overall, the aim of this study was to provide a context–specific investigation into workplace stressors and related factors. Due to the low numbers of participants from other healthcare professional groups, comparisons between the experiences of nurses and other

occupations or roles could not be made, which would have further added to a context-specific understanding of working in this setting. Additionally, the healthcare system in Germany is highly fragmented as governance is decentralized, plus an unknown number of different organizations in various regions were represented by this sample, creating a limit on the specificity of context even though this study focused on a very specific setting compared to other studies. Moreover, as the focus was on the workplace, there may be unmeasured confounders due to additional personal factors such as stressful experiences or supports outside of the workplace, resilience, and individual coping skills used; however, these were not taken into account as the focus was on the occupational setting. Furthermore, the survey took place during the peak and fall of the third wave of the SARS-CoV-2 pandemic in Germany (Ritchie et al., 2020), which ultimately affects overall stress experienced by individuals (Horesh & Brown, 2020) as well as the functioning of healthcare facilities, presenting an apparent confounder. However, at the time of survey distribution, the pandemic had passed its 1 year mark, allowing healthcare facilities and staff time to adapt and acclimatize to infection control techniques, and vaccines for high priority groups such as healthcare workers were already rolling out (Bundesministerium für Gesundheit, n.d.).

6.3 Implications for Further Research

In view of this study's results and limitations, combined with existing evidence of the experience of working in the context of German healthcare, there are several implications for further research. Most existing nursing stress and burnout studies within Germany involved nurses from a variety of settings, whereas only a handful of recent studies involved inpatient psychiatric nurses as a separate group (e.g., Angermeyer et al., 2006; Fischer et al., 2020; Meßenzehl et al., 2006; Schulz et al., 2009; Voltmer et al., 2013) and differences found point to the importance of investigating specific settings. The generalizability of studies about German nurses in general to psychiatric care is limited due to wider contextual factors, such as the payment or remuneration systems (Fischer et al., 2020). Furthermore, current frameworks impacting psychiatric nursing in Germany are under change as in January 2020, a first version of guidelines for minimum staffing requirements in psychiatry and psychosomatics was adopted by authorities (*Personalausstattung Psychiatrie und Psychosomatik-Richtlinie*; PPP-RL), and prior guidelines as per the psychiatry staffing ordinance (*Psychiatrie-Personalverordnung*; PsychPV) have been repealed (Deister et al., 2021). However, there is no available robust data on staffing levels in psychiatry transferrable to Germany's context (Deister et al., 2021). Moreover, the most recent study of psychiatric nurse burnout in Germany (Fischer et al., 2020) used data from 2014, before the introduction of the PPP-RL in psychiatric hospitals, which may have altered work activity in this field since then. Therefore, the main call for further research would be to continue to investigate psychiatric nursing more in depth considering these ongoing legislative and governance changes.

Moreover, possible confounders in this study could be specifically investigated: for example, as organizational factors were found to be a major source of stress in this study, further research could delve more into these factors specific to inpatient psychiatry in Germany in line with the literature, such as patient:nurse ratios, staffing ordinances, number of patients or treatment spaces on each ward, funding, type of hospital (public versus private; psychiatric versus general), or hospital funding or budgeting. This could include comparisons of the effect of different legislation or governance on psychiatric nursing (for example, using global treatment budgets [Schwarz et al., 2020]) especially as the mental health system is highly decentralized and fragmented. Additionally, further factors related to psychiatric nursing profession in Germany including education, nursing models and philosophies, and job experiences could be explored. Burnout could be investigated further using a different paradigm or viewing burnout as free of context and measured using different dimensions (Schaufeli et al., 2009). Outcomes of burnout such as turnover or impact on quality of care could be examined more closely in this specific setting of inpatient psychiatry, as there were differences seen in this sample compared to studies looking at nurses in general in Germany (e.g., Aiken et al., 2001, Heinen et al., 2013). Different coping strategies buffering effects on the stress–burnout relationship should also be investigated, as social support did not appear to moderate the relationship in this sample. In the same vein, the function and use of social support in this context could be further explored. Studies could also investigate the impact of specific strategies to reduce the effects of stress and burnout on psychiatric nurses. Finally, longitudinal studies on burnout, stress, and their impact on nurses in psychiatric nursing could provide insight into causality and changes over time.

6.4 Implications for Practice

When it comes to translating results concerning stressors, burnout, and their sequalae into practice, it is essential to focus on the modifiable contextual factors. Interventions to reduce stress often focus on the individual, such as enhancing coping skills, which may help alleviate feelings of EE but fail to deal with the other two components of burnout; additionally, the individual has very little control over the conditions in the workplace which contribute to burnout. Therefore, in light of the results of this study where main types of stressors were from organizational factors such as workload, organizational structures and processes, and lack of resources, a focus on the job environment, including structural and organizational interventions, is essential (Maslach et al., 2001; West et al., 2016). Hospitals can simultaneously reduce nurse burnout and promote patient satisfaction through system level improvements in work environments (Carthon et al., 2021). For example, improving organizational factors in hospitals can be implemented through creating nursing work environments supportive of professional practice by allowing nurses to have autonomy and opportunities to use their competencies as much as possible, which are important for improving patient care. This includes ensuring highly qualified staff with sufficient education for

all staff regardless of age or experience (Bruyneel et al., 2015), lowering patient:nurse ratios, and using higher baseline staffing rates to guarantee that absences are covered without having current staff work exorbitant amounts of overtime. Likewise, individual units could examine possible factors creating stress, such as lack of staffing and the need for overtime to be worked, which was shown to correlate with stress levels and EE in this sample. Perceptions surrounding workload and quality of care are indicators to leaving a specific employer (Heinen et al., 2013) and investing in better working conditions is key to attract and retain nurses (Zander, Blümel & Busse, 2013).

Although ensuring proper numbers of adequately qualified staff is connected to less patient conflict (Nienaber et al., 2018), reducing stress from client–related factors can be further addressed through strengthening the skills and knowledge base of nurses rather than attempting to control the patient population as that may contributed to higher amounts of coercion and contradict recovery–oriented concepts key in modern mental health care (Waldemar et al., 2016). Workplace–based education could be provided as an alternative, including concepts such as strengthening therapeutic communication and empathy, enhancing reflective practice (Eckroth, 2001; Thomas & Isobel, 2019), and introducing strategies to deal with violence and aggression, such as collaborative problem solving (Greene et al., 2006), nonviolent crisis intervention, or communication skills training (Baby et al., 2018). Job training and education, which are highly effective organizational interventions (Dreison et al., 2018), reduce burnout and stress and improve job satisfaction (Gilbody et al., 2006), as enhancing skills relating to working directly with clients can lower EE and DP, as well as improve levels of PA. Self-efficacy, as measured by PA in this study, is also very important as it contributes to resilience, which is a protective factor against burnout (Foster et al., 2019). Using social support to enhance and proliferate efficacy through creating positive working environments can be especially useful, for example through clinical supervision (Buus & Gonge, 2009) and ensuring that all nurses on a ward are equally and adequately qualified, educated, and supported regardless of age or experience. In general, working to cut down on the negative aspects of the psychiatric nursing role on an organizational level will overall reduce stress and burnout as well as enhance the attractiveness of the profession, which will in turn contribute to reducing absenteeism such as sickness and turnover.

The findings of this study point to potential country–level implications that influence psychiatric nurses. For one, lack of staffing can be targeted through continual evaluation and modification of the current staffing guidelines recently implemented (Deister et al., 2021). The conventional guidelines according to the PsychPV were related to a degree of severity of an International Classification of Diseases (ICD) diagnosis (Hoffmann & Rieger, 2010). This is not always useful for psychiatric nursing as many interventions are related to phenomena and cannot always be assessed in terms of time (Löhr et al., 2015) and require therapeutic use of self as an intervention (Wyder et al., 2017). Thus, adequate human resources—in this context, therapeutic nursing staff—are required especially when dealing with conflict behavior and safety–endangering

events (Nienaber et al., 2018). However, the PEPP does not have specifications for staffing even though staff are the central therapeutic element in psychiatric care (Löhr et al., 2015). This is crucial as both number of staff and qualification of staff is related to patient safety: in medical nursing, this is demonstrated in patient mortality rates; in psychiatry, lack of adequately qualified staff is associated with aggressive events (Löhr & Sauter, 2020; Nienaber et al., 2018). Finally, in view of previous studies, other changes which could include reduction or reallocation of patient caseload (Aiken et al., 2001; Demerouti et al., 2000).

Secondly, remunerations systems and their effect on the implementation of care could be re-evaluated. For example, changes in payment systems in order to decrease healthcare costs (Krachler et al., 2021) led to decreases in average length of stay in all inpatient settings from 1995 to 2015 (Rafferty et al., 2019). In psychiatry however, the average length of stay is over twice as long in psychiatric hospitals than somatic hospitals at around 22 days (Voltmer et al., 2013; Zander, Blümel & Busse, 2013) because psychiatry uses a flat–rate remuneration system (Schulz et al., 2009) which resulted in increased workload due to higher patient turnover (Fischer et al., 2020; Iseringhausen, 2010; Krachler et al., 2021) as patients are treated most cost–intensively as possible, meaning shorter stays on acute wards (Schwarz et al., 2020). However, the reliance of psychiatric care on flat–rate remuneration may be a protective factor for burnout for nurses, as there is greater freedom of action in the psychiatric field in general (Tummers et al., 2001). On the other hand, DRGs were connected to a narrowed scope of practice for nurses in somatic medicine (Braun et al., 2010; Fischer et al., 2020) which is related to increased work intensity and time pressure (Rohwer et al., 2020).

Furthermore, there is a lack of obligatory registration and no joint chamber of nursing for all of Germany (World Health Organization [WHO], 2018; (Rafferty et al., 2019). Introducing obligatory registration and joint nursing chambers would strengthen the profession by consistent quality standards for training and keeping professional competencies up to date and promote self-regulation on a united front, as well as provide basis for streamlined pay structures throughout the country. Furthermore, in a European nursing study of acute care nurses, Germany's nurses had the lowest education level (Aiken et al., 2013). As the conventional education of nurses in Germany requires completion of 10th grade and involves on-the-job training over 3–5 years rather than the traditional university framework of theoretical and practical training, German nurses may have lower expectations regarding rigorous training, advancement opportunities, lifelong learning within the nursing profession, and advanced career prospects (Zander, Blümel & Busse, 2013). However, it is considered in the public's interest to raise nursing education to a bachelor degree level (Aiken et al., 2013), especially as new roles and task–shifting from physicians is a characteristic of modern developments in nursing, thus Germany's low training requirements and expectations allude to a historical lack of understanding about the potential benefits in health outcomes stemming from a better qualified nursing workforce (Zander, Blümel & Busse, 2013).

Recently, however, there has been a trend towards the academic university education as an alternative pathway to the profession to align Germany with European and international standards. This has led to an increase in nursing specialists and experts; however, there are still few advanced practice nurses overall due to legal constraints and conflicts of interests with the physician profession regarding task–shifting, remuneration, and power, as well as lack of increased remuneration based on skills. Moreover, many study programmes for nurses focus on areas such as management and teaching rather than advanced care, which pulls motivated nurses away from direct patient care and further contributes to staffing shortages (Rafferty et al., 2019). Modernizing task–sharing practices between physicians, nurses, and assistive healthcare professions would decrease the large amounts of time that German nurses spend on non-nursing tasks (Bruyneel et al., 2015) and enhance nurses' ability to engage in therapeutically relevant patient care (Hoffmann & Rieger, 2010). This would decrease workload and serve as a preventative measure against patient conflict or aggression as well (Duxbury & Whittington, 2005) and therefore protect against added stress and further negative sequelae. However, strengthening the nursing profession especially regarding current mental health care in Germany overall would be a monumental task, as much of the power within the health system is tightly held by health insurance funds, hospitals, and physicians entrenched in an exclusive biomedical approach to health (Rafferty et al., 2019), a paradigm that ultimately contradicts recovery–oriented practice key to modern psychiatric care in promoting autonomy and empowerment in service users (Le Boutillier et al., 2011; Shera & Ramon, 2013; Waldemar et al., 2016).

7. Conclusion

In summary, nurses working in psychiatric settings are exposed to numerous stressors (López-López et al., 2019) placing them at high risk for burnout, which negatively affects individuals and work groups as well as ultimately impacts care delivery and quality of services (Carthon et al., 2021; Ruotsalainen et al., 2014). This study aimed to identify sources of stress common to nurses working in acute inpatient psychiatric units and measure their cumulative impact along with the influence of individual factors on burnout, social support, and intention to leave; the relationships between stress, social support, and burnout were also explored. Results revealed that organizational stressors, such as lack of staffing, and client–related issues appear to be main sources of stress. Approximately half of the nurses in this sample met the criteria for high burnout regarding EE and DP. However, overall, there were high PA levels alongside perception of workplace social support available, while intention to leave was low in this setting–specific sample of nurses. Although social support is a predictive and protective factor for burnout, there was no evidence of the moderating role of social support on the stress–burnout relationship.

Implications of these findings include focusing on modifying organizational aspects to lessen the presence of stressors, especially regarding staffing issues and workload, as increased

absenteeism through sick days and its association with stress, burnout, and intention to leave was highly evident in this sample. Furthermore, increasing potential rewards through guaranteeing adequate pay, proper recognition, and providing more advanced roles and opportunities within direct practice can strengthen the nursing profession in Germany, while also decreasing possible intention to leave in the face of the ongoing nursing shortage. Ensuring adequate education for nurses and unit teams can contribute to effectively and sustainably dealing with stressful, client–related issues, especially considering the high DP found in this sample. Further research opportunities include investigating more psychiatric unit–specific factors, especially those related to country or state level ordinances and frameworks, and their impact on stress, burnout, and further sequelae. Reducing modifiable stressors and barriers while modernizing the nursing profession in Germany will increase the attractiveness of the profession and help prevent further shortages. Overall, this study showed various factors associated with stress, burnout, social support in German inpatient psychiatric wards, along with the prevalence of burnout present among nurses working in these settings, adding a context–specific perspective to the growing body of knowledge concerning the occupational experience of psychiatric nurses in Germany.

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Declaration of Independent Work

I hereby declare that I wrote this thesis without any assistance and used only the resources and materials listed. Any material taken from other works, either as a quote or idea, have been indicated under "References". I further confirm that this Master Thesis is being submitted for the completion of the **Health Sciences (M.Sc.)** study program at the **Hamburg University of Applied Sciences**. It has not been submitted, either in part or as a whole, for any other academic degree at this or another institution.

Alison Bohlender,
January 6th, 2022
Burbach-Holzhausen, Germany

Appendices

Questionnaire

As this questionnaire was distributed via the online survey tool Qualtrics

(www.qualtrics.com), the format of this version differs from what the participants filled out online.

Liebe Kolleg:innen,

vielen Dank für Ihr Interesse an unserer Umfrage zur Arbeitsbelastung auf Akutstationen!
Ihre Teilnahme trägt dazu bei, das Verständnis für Ihren Beruf zu fördern und den Weg zu Verbesserungen in der Zukunft zu ebnen.

Die folgende Umfrage befasst sich mit berufsbedingtem Stress und seiner Auswirkung auf verschiedene Berufsgruppen, die auf geschlossenen Akutstationen der Erwachsenenpsychiatrie arbeiten (oder ähnliche Einrichtungen, bspw. Forensische Station oder geschlossenes Wohnheim). Sie umfasst Fragen zu beruflichen Merkmalen, Stressquellen bei der Arbeit und deren Auswirkungen sowie zu verfügbaren Unterstützungsmaßnahmen. Am Ende wird Ihre persönliche Meinung erfragt, wie die Arbeitsbedingungen für Arbeitnehmer:innen auf akutpsychiatrischen Stationen verbessert werden können.

Die gesamte Umfrage dauert etwa 8 Minuten. Ihre Teilnahme an der Umfrage ist freiwillig und Ihre Antworten werden vertraulich behandelt. Ihre Antworten bleiben anonym und können nicht auf Ihre Person zurückgeführt werden. Es steht Ihnen frei, die Umfrage jederzeit ohne negative Konsequenzen zu beenden. Die Teilnahmebedingungen umfassen ein Mindestalter von 18 Jahren und eine derzeitige Arbeit auf einer geschlossen psychiatrischen Akutstation.

Bei Fragen zu dieser Umfrage wenden Sie sich bitte an Frau Bohlender (Alison.Bohlender@haw-hamburg.de) oder Frau Fischer (r fischer@uke.de).

1) Geben Sie Ihr Einverständnis zur Teilnahme an dieser Studie?
   a) Ja, ich bin einverstanden
   b) Nein, ich möchte an dieser Umfrage nicht teilnehmen

2) Sind Sie derzeit auf einer geschlossenen psychiatrischen Akutstation für Erwachsene eingestellt?
   a) Ja
   b) Nein
      i) *If nein:* In welchem psychiatrischen Arbeitsumfeld sind Sie derzeit tätig?
         (1) Stationär (bitte angeben):
         (2) Eingliederungshilfe (bitte angeben):
         (3) Anderes (bitte angeben):

3) Welchem Geschlecht gehören Sie an?
   a) Männlich
   b) Weiblich
   c) Divers

4) Wie alt sind Sie?

5) In welchem Bundesland arbeiten Sie derzeit?
   a) Baden-Württemberg
   b) Bayern
   c) Berlin
   d) Brandenburg
   e) Bremen
   f) Hamburg
   g) Hessen

h) Mecklenburg-Vorpommern
i) Niedersachsen
j) Nordrhein-Westfalen
k) Rheinland-Pfalz
l) Saarland
m) Sachsen
n) Sachsen-Anhalt
o) Schleswig-Holstein
p) Thüringen

6) Zu welcher Berufsgruppe gehören Sie?
   a) Gesundheits-/Pflegeassistent:in
   b) Kranken- oder Altenpfleger:in
   c) Fachkrankenpfleger:in
   d) Sozialarbeiter:in oder Sozialpädagog:in
   e) Psycholog:in
   f) Psychologische:r Psychotherapeut:in
   g) Spezialtherapeut:in: Ergo-/Beschäftigungs-/Physiotherapeut:in oder ähnliches
   h) Assistenzärzt:in
   i) Fach-/Ober-/Chefärzt:in
   j) Anderes: _____

7) Was ist Ihr höchster abgeschlossener Bildungsgrad?
   a) Ausbildung
   b) Bachelor
   c) Master/Diplom/Staatsexamen
   d) Promotion
   e) Anderes: _____

8) Wie viele Jahre Erfahrung haben Sie **insgesamt in Ihrem Beruf**?

9) Wie viele Jahre haben Sie bereits in der **akutstationären Psychiatrie** gearbeitet?

10) Wie viele Jahre haben Sie bereits auf der Station gearbeitet, **auf der Sie derzeit tätig sind**?

11) Wie viele Stunden **pro Woche** arbeiten Sie laut Ihrem Arbeitsvertrag?

12) Machen Sie oftmals Überstunden?
    a) Ja
    b) Nein:
       i) *If nein:* Wie viele Überstunden machen Sie im Durchschnitt **pro Woche** (außerhalb Ihres Arbeitsvertrages)?

13) Welche Art von Arbeitszeiten haben Sie?
    a) Schichtdienst ohne Bereitschaftsdienst
    b) Schichtdienst mit Bereitschaftsdienst
    c) Normale Arbeitszeiten (kein Schichtdienst), aber ich bin verpflichtet, Bereitschaftsdienst zu leisten
    d) Normale Arbeitszeiten (kein Schichtdienst oder Bereitschaftsdienst)
    e) Anderes: _____

14) Sind Sie derzeit in einer Leitungs- oder Führungsposition?
    a) Ja
    b) Nein
15) Wie viele Krankheitstage haben Sie im Jahr 2020 ungefähr genommen? (ohne Krankheitstage aufgrund von COVID-19/Quarantäne)

Die nächsten Fragen befassen sich mit Stress bei der Arbeit auf akutpsychiatrischen Stationen. Druck/Stress kann hier verstanden werden als Probleme, die Sie schwer zu bewältigen finden, woraus ein Gefühl von Sorge oder Ängstlichkeit resultiert.

16) Was sind die Top 3 Stressoren, die Sie auf Ihrer Arbeit oder bezüglich Ihrer Arbeit in der Akutpsychiatrie erleben?

17) Die nachfolgenden Punkte wurden als Belastungsquellen bei der Arbeit im Gesundheitswesen ermittelt. Bitte antworten Sie, indem Sie angeben, inwieweit jede Aussage auf Sie zutrifft (d h. für Sie eine Quelle von Belastung bei der Arbeit darstellt), indem Sie eine Zahl von 0 (trifft nicht auf mich zu) bis 3 (trifft auf mich zu) wählen. Bitte achten Sie darauf, jede Zeile zu beantworten.

$$0 = \text{"Trifft nicht auf mich zu"}$$
$$1 =$$
$$2 =$$
$$3 = \text{"Trifft auf mich zu"}$$

Ich spüre Belastung auf der Arbeit aufgrund von...
1. Zu viel Arbeit, die zu erledigen ist
2. Behandlungsabschluss mit den Patient:innen
3. Fehlende Unterstützung durch das Management
4. Konflikt mit anderen Berufsgruppen, z. B. Arzt, Krankenpfleger:in
5. Mangel an angemessener Personalbesetzung
6. Das Gefühl, unzureichend für den Umgang mit den emotionalen Bedürfnissen von Patient:innen ausgebildet zu sein
7. Nicht genug Zeit mit der Familie
8. Zu viele verschiedene Dinge, die zu tun sind
9. Umgang mit Tod oder Leid
10. Beziehung zum unmittelbaren Vorgesetzten
11. Rollenkonflikte mit anderen Berufsgruppen
12. Mangel an finanziellen Ressourcen für Schulungen/Workshops
13. Unsicherheit in Bezug auf die eigenen Fähigkeiten
14. Unfähigkeit, die persönliche von der beruflichen Rolle zu trennen
15. Unzureichende Zeit, um alle Aufgaben zufriedenstellend zu erledigen
16. Keine Veränderung oder Langsamkeit der Veränderung bei Patient:innen
17. Kommunikation und Informationsfluss bei der Arbeit
18. Arbeit in einem multidisziplinären Team
19. Mangel an geeigneter Ausrüstung/Arbeitsmaterialien
20. Das Gefühl, für die Arbeit mit schwierigen Patient:innen nicht ausreichend ausgebildet zu sein
21. Die Arbeit mit nach Hause zu nehmen
22. Zu viele Patient:innen
23. Schwierige und/oder anspruchsvolle Patient:innen
24. Schlechtes Management und schlechte Betreuung
25. Kritik durch andere Fachleute, z.B. Ärzt:in, Krankenpfleger:in
26. Mangel an adäquater Absicherung in einer potentiell gefährlichen Umgebung
27. Zweifel an der Wirksamkeit therapeutischer Bestrebungen
28. Beziehung zum/zur Ehepartner:in/Partner:in beeinträchtigt die Arbeit
29. Zu lange Arbeitszeiten
30. Körperlich oder verbal bedrohliche Patient:innen
31. Die Art und Weise, wie Konflikte in der Organisation/Krankenhaus gelöst werden
32. Mangelnde emotionale Unterstützung durch Kollegen
33. Unzureichende schreibtätigkeits- /technische Unterstützung
34. Bzgl. beruflicher/klinischer Fähigkeiten auf dem neuesten Stand zu bleiben
35. Die Arbeit verstärkt Gefühle der Leere und/oder Isolation
36. Nicht genug Zeit für Erholung
37. Therapeutische Beziehungen zu managen
38. Organisationsstrukturen und Richtlinien
39. Schwierigkeiten bei der Zusammenarbeit mit bestimmten Kolleg:innen
40. Schlechte physische Arbeitsbedingungen
41. Angst, einen Fehler bei der Behandlung einer:s Patient:in zu machen
42. Mangelnde Zeit für Freundschaften/soziale Beziehungen
43. Fehlen einer angemessenen finanziellen Entlohnung

18) Im Folgenden finden Sie einige Aussagen zu Gefühlen, die sich auf Ihre Arbeit beziehen. Falls bei Ihnen das angesprochene Gefühl nie auftritt, geben Sie bitte „nie" an. Falls das angesprochene Gefühl bei Ihnen auftritt, geben Sie bitte an wie häufig es auftritt. Bitte achten Sie darauf, jeden Punkt zu beantworten.

0 = nie
1 = mindestens ein paar Mal im Jahr
2 = ein Mal im Monat oder weniger
3 = einige Male pro Monat
4 = ein Mal pro Woche
5 = mehrmals pro Woche
6 = jeden Tag

1. Durch meine Arbeit fühle ich mich gefühlsmäßig am Ende.
2. Am Ende des Arbeitstages fühle ich mich erledigt.
3. Ich fühle mich schon müde, wenn ich morgens aufstehe und wieder ein Arbeitstag vor mir liegt.
4. Es gelingt mir gut, mich in meine Patienten hineinzuversetzen.
5. Ich glaube, ich behandle Patienten zum Teil ziemlich unpersönlich.
6. Den ganzen Tag mit Leuten zu arbeiten, stellt eine Belastung für mich da.
7. Mit den Problemen meiner Patienten kann ich gut umgehen.
8. Durch meine Arbeit fühle ich mich ausgelaugt.
9. Ich glaube, dass ich das Leben anderer Leute durch meine Arbeit positiv beeinflussen kann.
10. Seit ich diese Arbeit mache, bin ich gleichgültiger gegenüber Menschen geworden.
11. Ich fürchte, dass diese Arbeit mich emotional verhärtet.
12. Ich fühle mich voller Tatkraft.
13. Meine Arbeit frustriert mich.
14. Ich glaube, ich arbeite zu hart.
15. Bei manchen Patienten interessiert es mich eigentlich nicht wirklich, was mit ihnen wird.
16. Mit Menschen direkt zusammen zu arbeiten belastet mich zu sehr.
17. Es fällt mir leicht, eine entspannte Atmosphäre mit meinen Patienten herzustellen.
18. Ich habe viele wertvolle Dinge in meiner derzeitigen Arbeit erreicht.
19. Ich fühle mich angeregt, wenn ich intensiv mit meinen Patienten gearbeitet habe.
20. Ich fühle mich am Ende.
21. Ich gehe bei meiner Arbeit mit emotionalen Problemen sehr ruhig und gelassen um.
22. Ich habe das Gefühl, Patienten geben mir die Schuld für einige ihrer Probleme.

19) Die folgenden Fragen betreffen Ihr Verhältnis zu Ihren Kolleg:innen.

0 = nie/fast nie
1 = selten
2 = manchmal
3 = oft
4 = immer

a) Wie oft erhalten Sie bei Bedarf Hilfe und Unterstützung von Ihren Kolleg:innen?
b) Wie oft sind Ihre Kolleg:innen bei Bedarf bereit, sich Ihre Arbeitsprobleme anzuhören?

20) Die folgenden Fragen betreffen Ihr Verhältnis zu Ihrer:m Vorgesetzten.

0 = nie/fast nie
1 = selten
2 = manchmal
3 = oft
4 = immer
5 = ich habe keine unmittelbaren Vorgesetzten

a) Wie oft erhalten Sie bei Bedarf Hilfe und Unterstützung von Ihrer:m unmittelbaren Vorgesetzten?
b) Wie oft ist Ihr:e unmittelbare r Vorgesetzte:r bei Bedarf bereit, sich Ihre Arbeitsprobleme anzuhören?

21) Welche Änderungen könnten Ihrer Meinung nach vorgenommen werden, um den Stress zu reduzieren und die Arbeitsbedingungen für Mitarbeiter in der Akutpsychiatrie zu verbessern?

Sie haben das Ende der Umfrage erreicht. Vielen Dank für Ihre Zeit und Ihre Teilnahme!

Bei Fragen zu dieser Umfrage wenden Sie sich bitte an Frau Bohlender (Alison.Bohlender@haw-hamburg.de) oder Frau Fischer (r fischer@uke.de).

Subscale Items and Reliability Coefficients

Table B1

MHPSS Subscale Items and Reliability Coefficients

Subscale	Items	Cronbach's α [a]
I. Workload	1, 8, 15, 22, 29, 36	.79
II. Client–Related Difficulties	2, 9, 16, 23, 30, 37	.70
III. Organizational Structure and Processes	3, 10, 17, 24, 31, 38	.79
IV. Relationships and Conflicts With Other Professionals	4, 11, 18, 25, 32, 39	.78
V. Lack of Resources	5, 12, 19, 26, 33, 40	.73
VI. Professional Self-Doubt	6, 13, 20, 27, 34, 41	.74
VII. Home–Work Conflict	7, 14, 21, 28, 35, 42	.78

Note. MHPSS by Cushway et al. (1996).

[a] Reliability coefficients for current study.

Table B2

MBI-HSS Subscale Items and Reliability Coefficients

Subscale	Items	Cronbach's α [a]
Emotional Exhaustion (EE)	1, 2, 3, 6, 8,13, 14, 16, 20	.90
Depersonalization (DP)	5, 10, 11, 15, 22	.73
Personal Accomplishment (PA)	4, 7, 9, 12, 17, 18, 19, 21	.80

Note. MBI-HSS by Maslach et al. (1996).

[a] Reliability coefficients for current study.

Assumptions for Statistical Data Analyses

Assumptions for the statistical tests were based on Field (2009) with the added source of A. F. Hayes (2013) for the multiple regression moderation models. Assumptions common to most statistical tests used are described separately initially as to avoid duplications in reporting.

Common Assumptions

Normality

Normality was assumed for data as the sample size was greater than 30. As a large sample size may lead to overly sensitive normality tests such as the Kolmogorov-Smirnov and Shapiro-Wilk tests (Field, 2009; Ghasemi & Zahediasl, 2012), normality was evaluated further using QQ plots to assess for gross violations of the assumption (A. F. Hayes, 2013) shown in Figures C1–20.

Figure C1

QQ Plot for Age
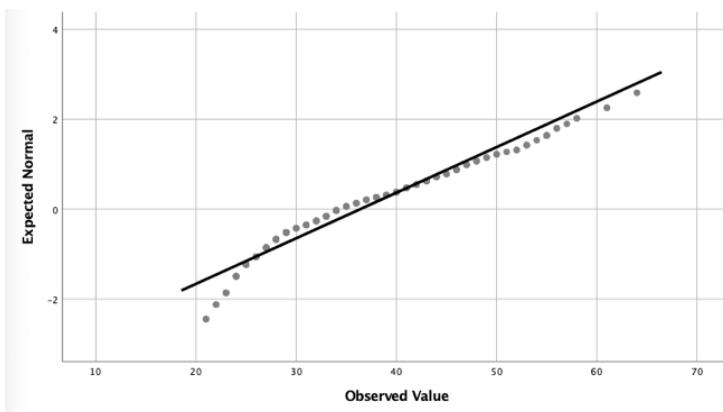
Figure C2

QQ Plot for Years of Experience in Profession
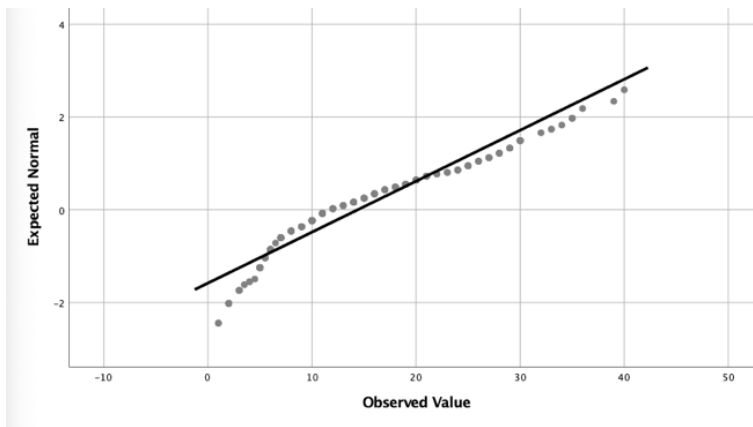
Figure C3

QQ Plot for Years of Experience in Acute Psychiatry
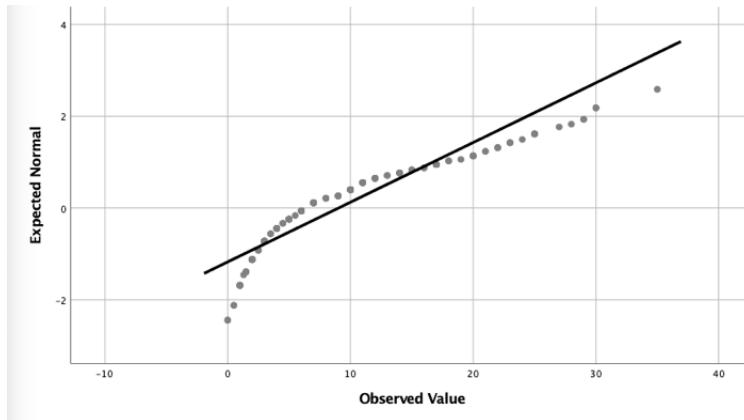
Figure C4

QQ Plot for Years of Experience in Current Unit of Employment
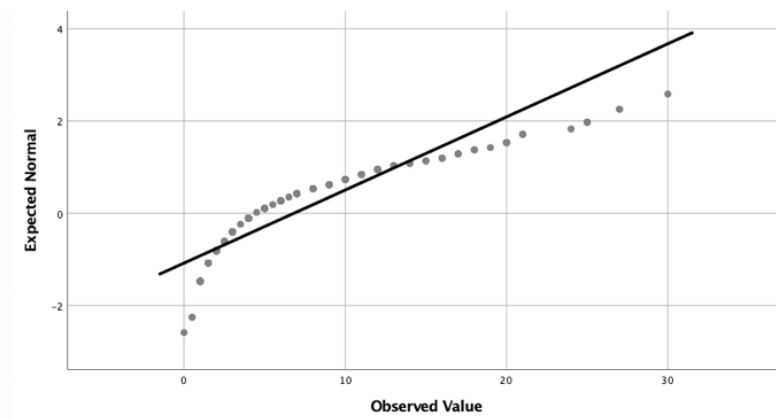
Figure C5

QQ Plot for Hours Worked per Week as per Contract
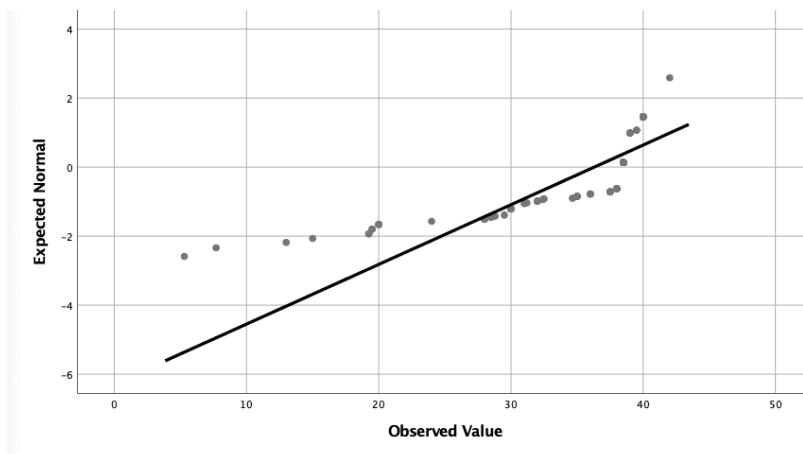
Figure C6

QQ Plot for Average Amount of Hours of Overtime Worked per Week
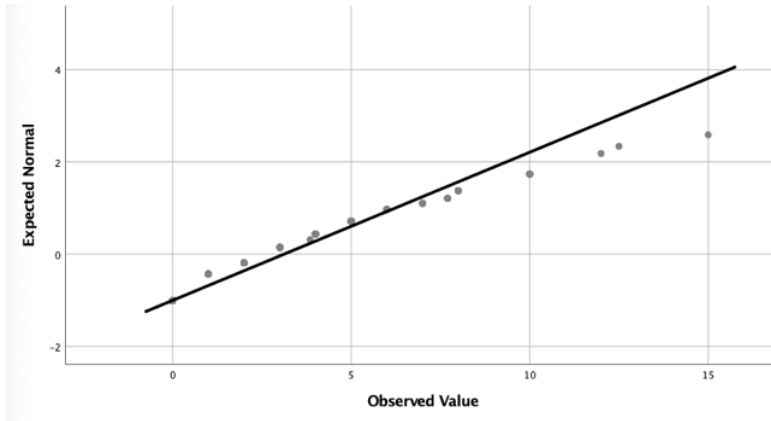
Figure C7

QQ Plot for Number of Sick Days Taken in Past Year
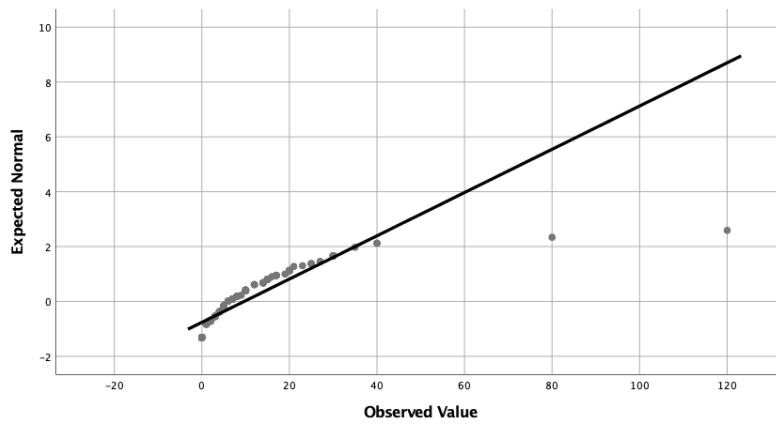
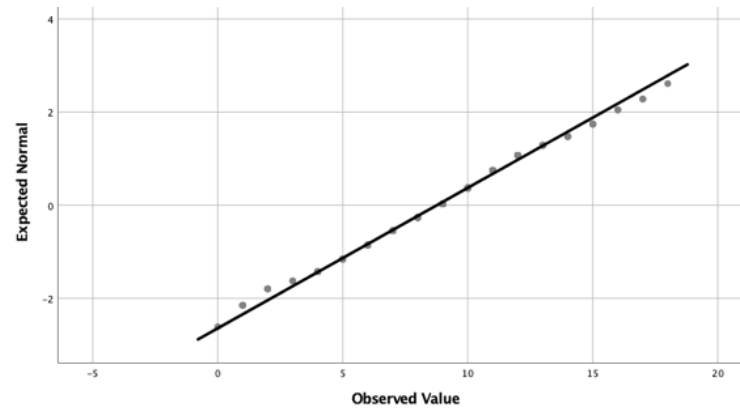**Figure C8**

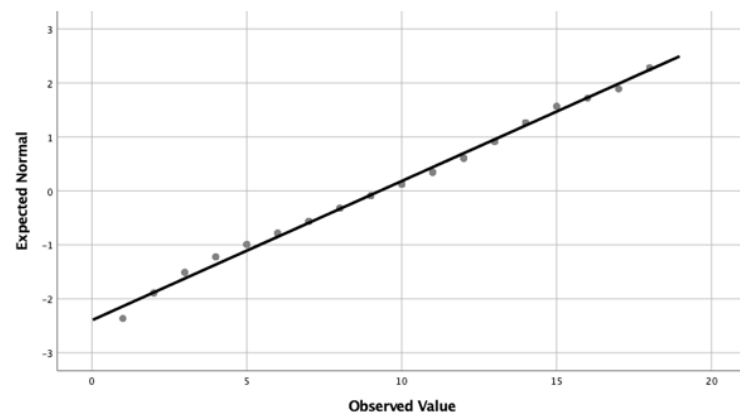*QQ Plot for Stress Level (42 Item MHPSS)*
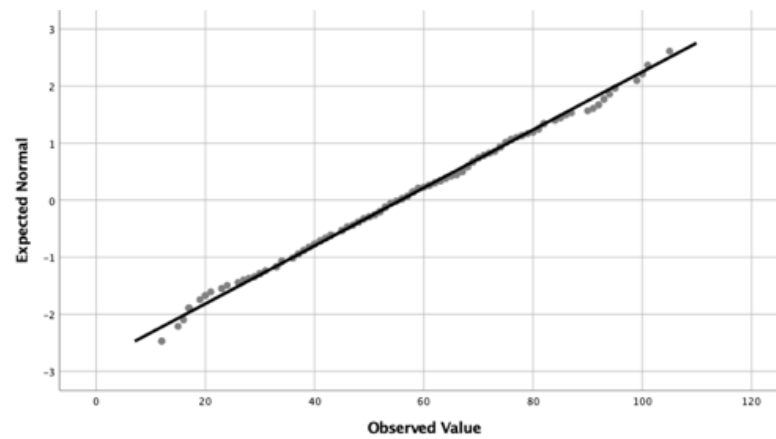
Figure C9

QQ Plot for the Workload Subscale (MHPSS)
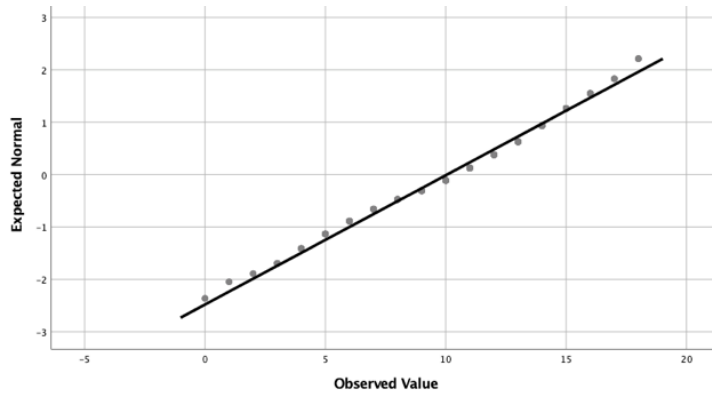
Figure C10

QQ Plot for the Client–Related Difficulties Subscale (MHPSS)

Figure C11

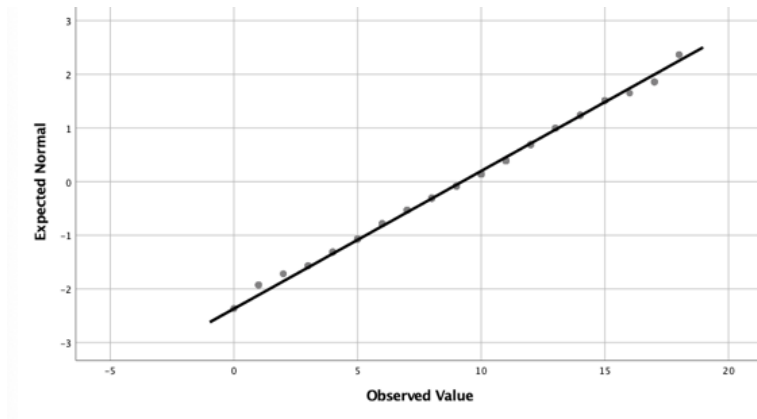*QQ Plot for the Organizational Structures and Processes Subscale (MHPSS)*

Figure C12

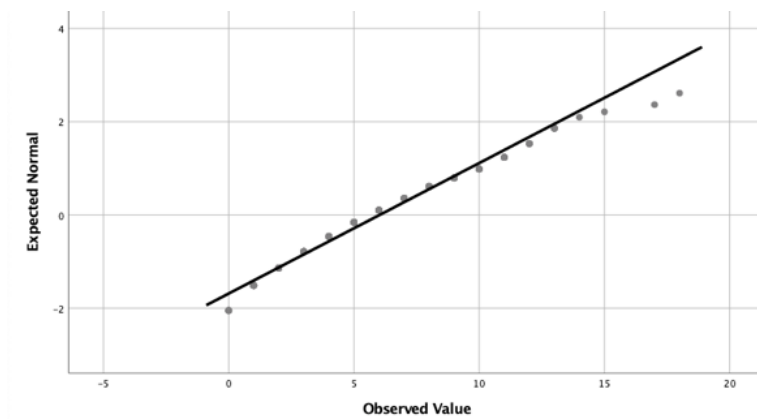*QQ Plot for the Relationships and Conflicts With Other Professionals Subscale (MHPSS)*
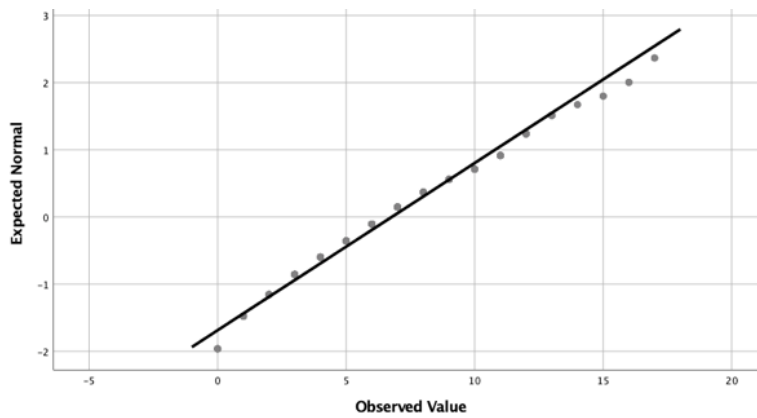
Figure C13

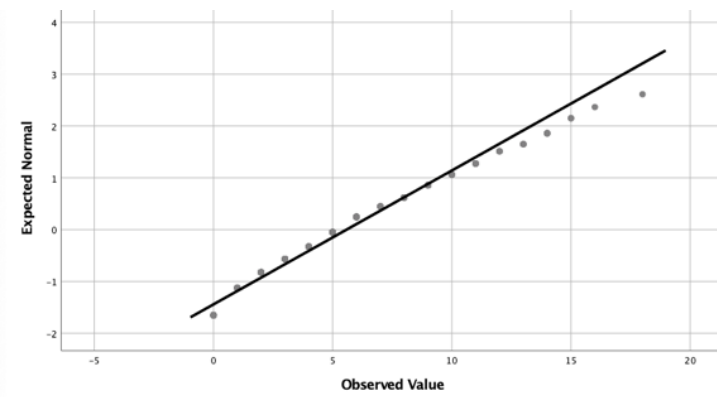*QQ Plot for the Lack of Resources Subscale (MHPSS)*

Figure C14

QQ Plot for the Professional Self-Doubt Subscale (MHPSS)
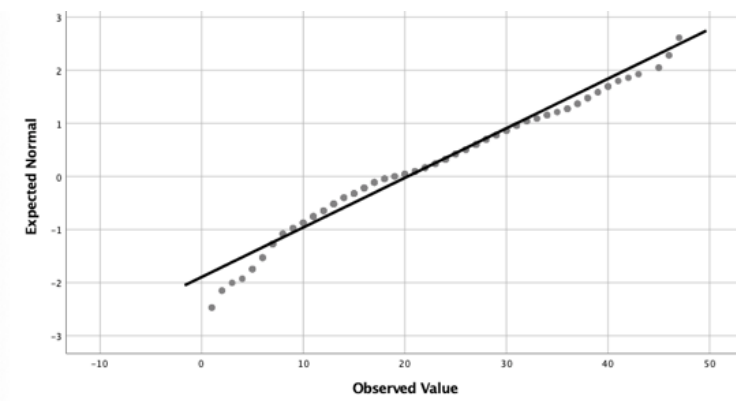
Figure C15

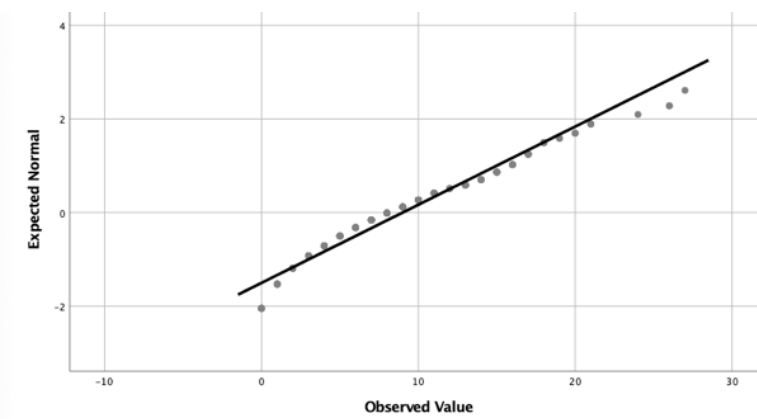*QQ Plot for the Home–Work Conflict Subscale (MHPSS)*

Figure C16

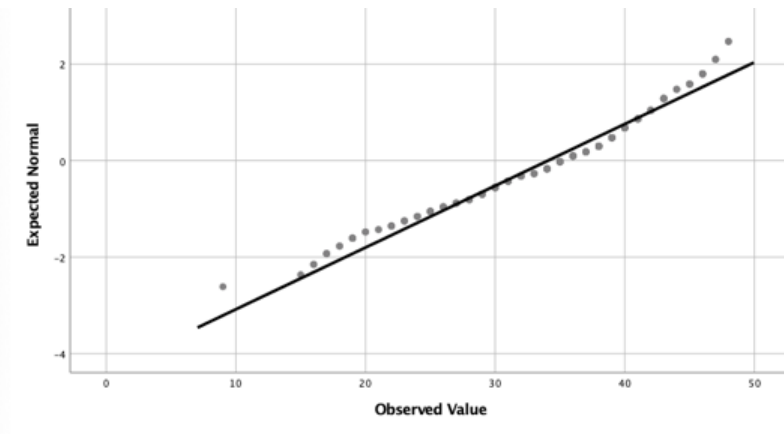*QQ Plot for the Emotional Exhaustion (MBI-HSS)*

Figure C17

QQ Plot for the Depersonalization (MBI-HSS)
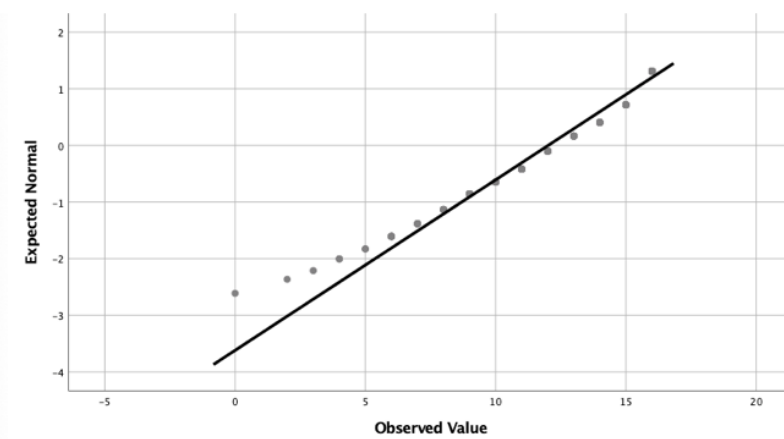
Figure C18

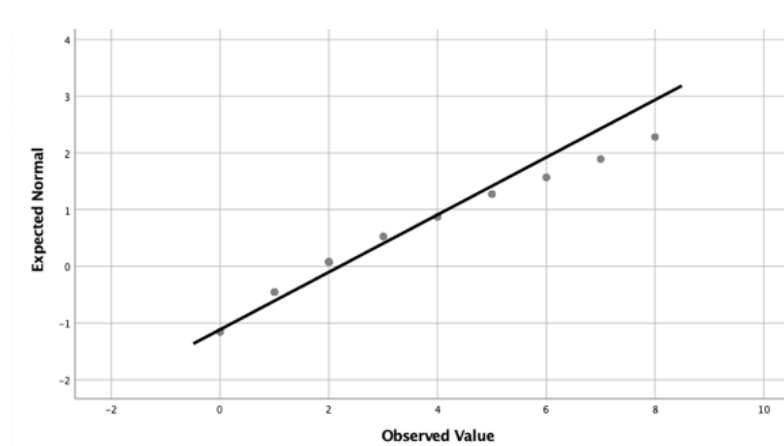*QQ Plot for the Personal Accomplishment (MBI-HSS)*

Figure C19

QQ Plot for the Social Support (COPSOQ-III [B.8, 1–4])

Figure C20

QQ Plot for the Intention to Leave (COPSOQ-III [B.10, 1–2])

Outliers

As described in the methods section, data was checked manually for outliers during data cleaning using sample descriptives and frequencies; any values not appearing to be from target sample (Field, 2009) nor within realistic bounds was adjusted and coded as missing (one value for overtime amount). As the outcome variables used scales, no unrealistic outliers were found as there was a limit on the values produced by the scales.

Independence of Observations

This assumption was filled overall as the sample participants were independent of each other, and there were no repeated design measures.

Assumptions for Individual Statistical Tests

t-Tests

Firstly, the dependent variables were scales (stress, EE, DP, PA, social support, and intention to leave) at interval or ratio level and so they were continuous. Second, the independent variables were categorical and divided into two groups for each test, according to gender, professional group, education, and leadership position. Pairwise deletions ensured that cases have values on both dependent and independent values. The data used from a random sample of the population. Additionally, each groups contained at least 6 cases, as indicated in the sample description. Finally, homogeneity of variances was assessed using Levene's test where a significant p value ($> .05$) indicated that equality of variances cannot be assumed. All t-tests produced nonsignificant Levene's test results (Table C1); thus equality of variances was assumed for the interpretation of results for all cases.

Table C1

F-Values and Corresponding Significance Levels of Levene's Tests

Outcome variable	Gender		Professional group		Education		Leadership position	
	F	p	F	p	F	p	F	p
Stress	0.68	.43	0.16	.69	< 0.000	.99	0.24	.62
EE	1.15	.29	0.36	.55	0.26	.61	2.20	.14
DP	2.48	.12	0.03	.87	0.04	.84	1.50	.22
PA	0.31	.58	0.11	.73	0.01	.91	0.77	.38
Social support	0.001	.98	0.08	.78	0.14	.71	0.47	.49
Intention to leave	0.67	.41	0.03	.87	1.54	.22	0.12	.74

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

Correlations of Main Outcome Variables and Individual Characteristics

Continuous variables were used for these correlations, as outcome scales (stress, EE, DP, PA, social support, and intention to leave) and the individual or job–related factors (age, experience in profession, acute psychiatry, and on current unit, hours worked per week, amount of overtime worked per week, and number of sick days taken in the past year) were interval or ratio level. Pairwise deletions ensured that cases have values on both dependent and independent values and a random sample of the population was used. Concerning bivariate normality, the individual factors were deemed to not be normally distributed (Figures C1–7), therefore Spearman's correlations were used.

Chi-Square Tests

Categorical variables were used for this test, including burnout case categories and the variables gender, professional group, education, leadership position, and overtime. This included 2 or more categories for each variable as each burnout dimension consisted of 3 categories (low, medium, and high) and each of the individual/job–related variables consisted of two groups. Furthermore, the sample size was sufficiently large to provide at least 5 observations for the majority (80%) of cells as seen in Table 4 in Results .

Correlations of Main Outcome Variables

Continuous variables, including stress levels and subscales, EE, DP, social support, and intention to leave, used for the tests were all interval or ratio level. Cases had nonmissing values on both variables using pairwise deletions and the sample was random. As for bivariate normality, this assumption was deemed to be met (Figures C8 – 20) therefore Pearson's correlations were used.

Moderation Models

Proper variable types were included in the model, as predictors (stress and social support) were quantitative, and outcomes (EE, DP, and PA) were continuous. The predictors all had non-zero variance. There were significant correlations between predictors and outcomes (Table C2). Regarding perfect multicollinearity assumption for the predictors usually used in multiple regression models, as this is a moderation model, the collinearity assumption does not apply to the model with the interaction term. There was no correlation greater than .8 or .9 between the other predictors, as evidenced in the one-tailed correlation between stress and social support seen in Table C2.

Table C2

One-Tailed Correlations for Moderation Analysis

Variable	1.	2.	3.	4.	5.
1. EE	–				
2. DP	–	–			
3. PA	–	–	–		
4. Stress	.67**	.31**	−.33**	–	
5. Social support	−.28**	−.13*	.34**	−.42**	–

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

Furthermore, the tolerance statistics were greater than 0.2 and variance inflation factor (VIF) values were less than < 10 for the predictors, excluding the model with the interaction term (step 3), which is thus not included in Table C3. As the same predictor variables were used for each outcome, the tolerance and VIF values were the same for each model.

Table C3

*Tolerance and VIF Values for Model*

Step		Tolerance	VIF
1	Stress total	1.0	1.0
2	Stress total	0.83	1.2
	Social support	0.83	1.2

Regarding the assumption that predictors are uncorrelated with 'external variables': although this assumption applies to a regular hierarchical regression model, this model was to evaluate social support moderation one focal predictor and an interaction term, as explained in the methods. Implications of not including other possible predictor variables are outlined in the discussion. Additionally, most significant correlations between demographic or job–related variables and predictors were relatively small (seen in Table 6 in the Results section).

For the assumption of homoscedasticity there is no evidence of heteroscedasticity (clear funneling or curved patterns) in the scatterplots for the standardized predicted values and the dependent variable based on the model and the standardized residuals (Figures C21 – 23).
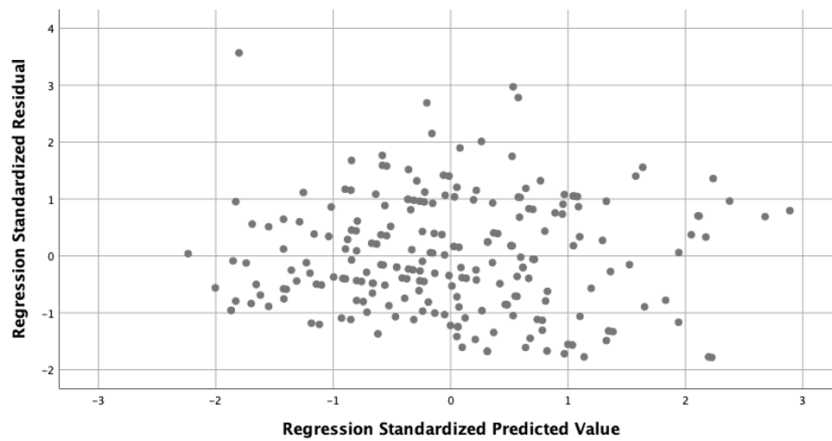
Figure C21

Scatterplot of Regression Standardized Residuals and Predicted Values for the EE Model
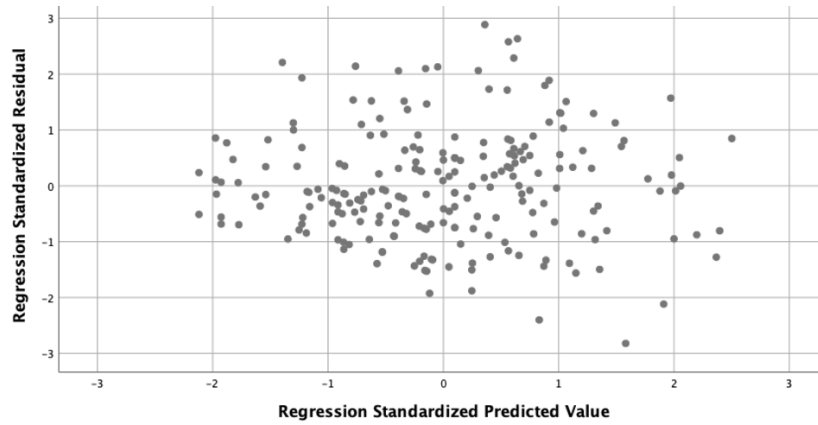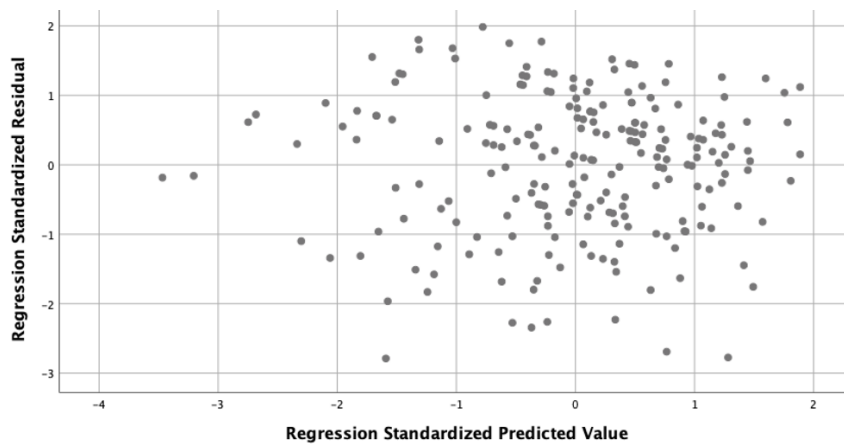

Figure C22

Scatterplot of Regression Standardized Residuals and Predicted Values for the DP Model

Figure C23

Scatterplot of Regression Standardized Residuals and Predicted Values for the PA Model

The independent errors assumption was met as the Durbin-Watson statistic is between one and three, and as close to two as possible for each model (EE model, Durbin-Watson statistic = 1.99; DP model, Durbin-Watson statistic = 1.79; PA model: Durbin-Watson statistic = 1.98). Errors were also normally distributed as the histograms of the regression standardized residuals in Figures C24–26 are not heavily skewed and follow a normal curve, and as the normal probability plots of the expected cumulative probability and the observed cumulative probability do not deviate strongly from normal, as seen in Figures C27–29.

Figure C24

Histogram of the Regression Standardized Residuals for EE Model
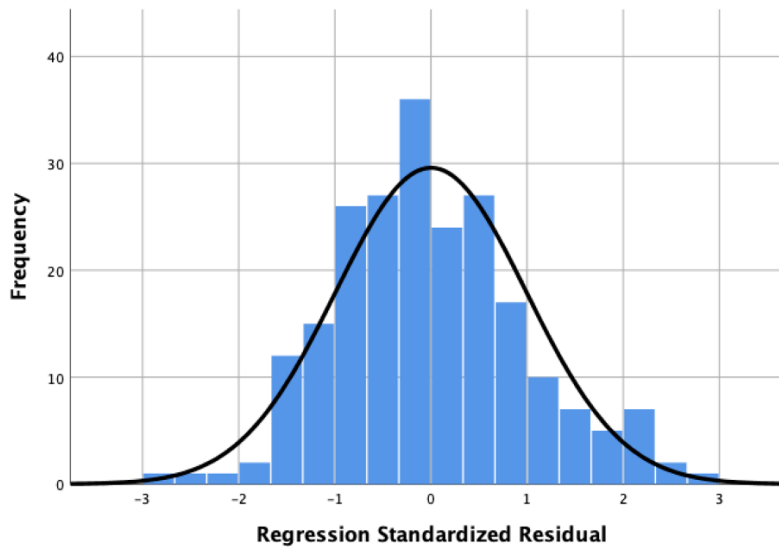
Figure C25

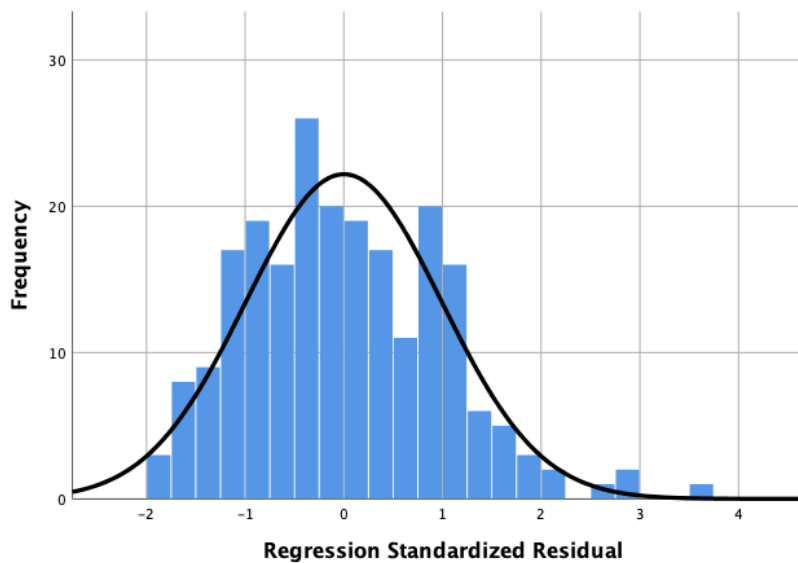*Histogram of the Regression Standardized Residuals for DP Model*

Figure C26

Histogram of the Regression Standardized Residuals for PA Model
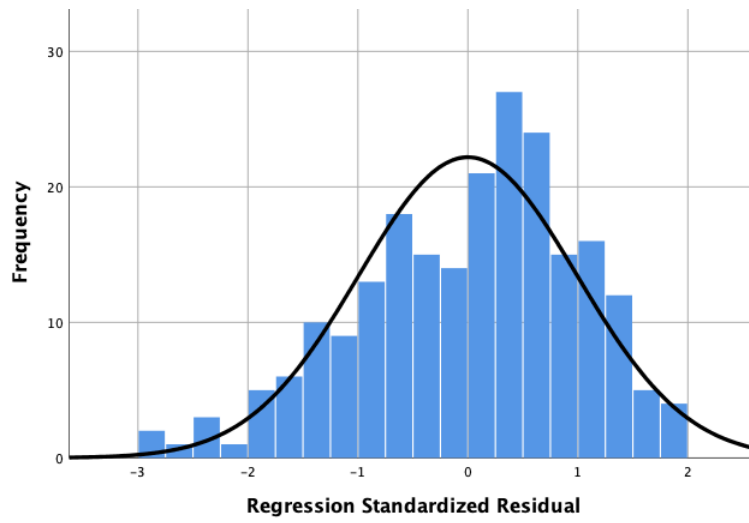
Figure C27

Normal Probability Plots of Expected versus Observed Cumulative Probability for EE Model
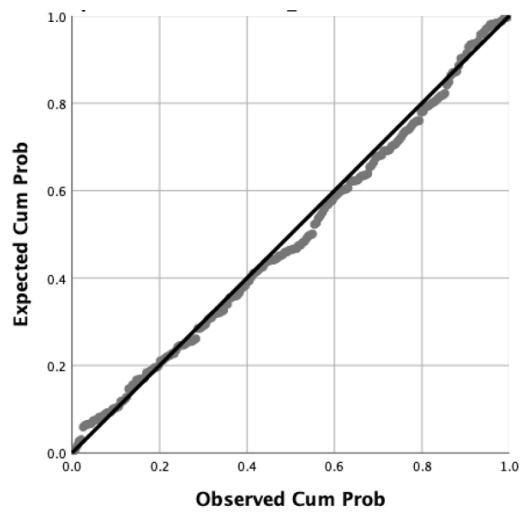
Figure C28

Normal Probability Plots of Expected versus Observed Cumulative Probability for DP Model
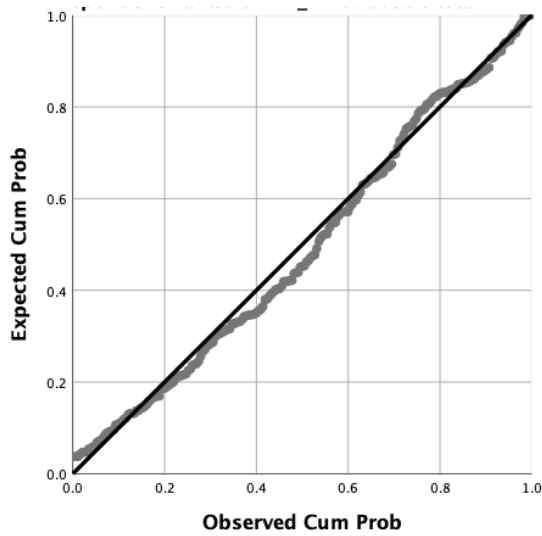
Figure C29

Normal Probability Plots of Expected versus Observed Cumulative Probability for PA Model
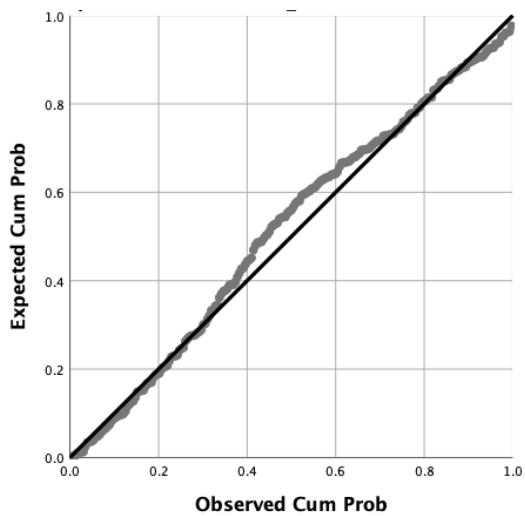
Independence of observations assumption was upheld as all observations are from different respondents; the study design involves no repeated measures. Regrading linearity, there are no obvious patterns such as curves or squiggles in the scatterplots for the standardized predicted values and the dependent variable based on the model and the standardized residuals (Figures C21–23). Additionally, the plots (Figures C27–29) show no obvious patterns (such as s–shaped patterns winding around the line of best fit). Lastly, the minimum sample size was reached, as a sample size of at least 107 was needed (104 + number of predictors) and the entire sample ($N = 221$) was used for each model.

Appendix D

Full List of MHPSS Stressors According to Descending Means

Rank	Item No.	MHPSS Item	MHPSS Subscale	*M*	*SD*
1	5	Lack of adequate staffing	V: Lack of Resources	2.4	0.9
2	30	Physically threatening patients	II: Client–Related Difficulties	2.3	0.9
3	23	Difficult and/or demanding patients	II: Client–Related Difficulties	2.1	0.9
4	43	Lack of adequate financial reward	n/a	2.1	1.0
5	22	Too many patients	I: Workload	2.0	1.0
6	3	Lack of support from management	III: Organizational Structure and Processes	1.9	0.9
7	15	Not enough time to complete all tasks satisfactorily	I: Workload	1.9	0.9
8	31	The way conflicts are resolved in the organisation	III: Organizational Structure and Processes	1.9	1.0
9	26	Lack of adequate cover in potentially dangerous environment	V: Lack of Resources	1.9	1.0
10	8	Too many different things to do	I: Workload	1.8	1.0
11	1	Too much work to do	I: Workload	1.7	0.9
12	16	No change or slowness of change in patients	II: Client–Related Difficulties	1.7	0.9
13	36	Not enough time for recreation	I: Workload	1.7	1.1
14	17	Communications and flow of information at work	III: Organizational Structure and Processes	1.7	0.9
15	27	Doubt about the efficacy of therapeutic measures	VI: Professional Self-Doubt	1.6	0.9
16	24	Poor management and supervision	III: Organizational Structure and Processes	1.6	0.9
17	4	Conflict with other profession (doctor, nurse)	IV: Relationships and Conflicts With Other Professionals	1.5	1.0
18	38	Organizational structure and policies	III: Organizational Structure and Processes	1.5	0.9
19	7	Not enough time with family	VII: Home–Work Conflict	1.4	1.1

Rank	Item No.	MHPSS Item	MHPSS Subscale	*M*	*SD*
20	42	Inadequate time for friendship/social relationships	VII: Home–Work Conflict	1.4	1.1
21	19	Shortage of equipment/supplies	V: Lack of Resources	1.4	1.0
22	39	Difficulty of working with certain colleagues	IV: Relationships and Conflicts With Other Professionals	1.4	1.1
23	11	Conflicting rules with other professionals	IV: Relationships and Conflicts With Other Professionals	1.3	0.9
24	40	Poor physical working conditions	V: Lack of Resources	1.3	1.0
25	33	Inadequate technical/clerical backup	V: Lack of Resources	1.3	1.1
26	34	Keeping professional/clinical skills up to date	VI: Professional Self-Doubt	1.1	0.9
27	12	Lack of financial resources for training courses/workshops	V: Lack of Resources	1.1	1.0
28	37	Managing therapeutic relationships	II: Client–Related Difficulties	1.0	0.9
29	2	Terminating with clients/patients	II: Client–Related Difficulties	1.0	0.9
30	6	Feeling inadequately skilled dealing with emotional needs of clients/patients	VI: Professional Self-Doubt	1.0	1.0
31	21	Taking work home	VII: Home–Work Conflict	0.9	1.0
32	29	Working too long hours	I: Workload	0.9	1.0
33	18	Working in a multidisciplinary team	IV: Relationships and Conflicts With Other Professionals	0.9	0.9
34	25	Criticism by other professional (e.g., doctor, nurse)	IV: Relationships and Conflicts With Other Professionals	0.9	1.0
35	41	Fear of making a mistake over a client/patient's treatment	VI: Professional Self-Doubt	0.9	0.9
36	20	Feeling inadequately skilled for dealing with difficult clients/patients	VI: Professional Self-Doubt	0.8	0.9

Rank	Item No.	MHPSS Item	MHPSS Subscale	*M*	*SD*
37	32	Lack of emotional support from colleagues	IV: Relationships and Conflicts With Other Professionals	0.9	0.9
38	10	Relationship with line manager	IV: Relationships and Conflicts With Other Professionals	0.7	0.9
39	35	Work emphasizes feelings of emptiness and/or isolation	VII: Home–Work Conflict	0.7	0.9
40	9	Dealing with death or suffering	II: Client–Related Difficulties	0.7	0.8
41	13	Uncertainty about own capabilities	VI: Professional Self-Doubt	0.7	0.8
42	28	Relationship with spouse/partner affects work	VII: Home–Work Conflict	0.6	0.9
43	14	Inability to separate personal from professional role	VII: Home–Work Conflict	0.5	0.8

Note. MHPSS by Cushway et al. (1996).

Frequency Tables for COPSOQ-III

Table E1

Frequency of Responses for Social Support in the Workplace (COPSOQ-III [B.8, 1–4])

Question	Never/ almost never	Rarely	Sometimes	Often	Always	I have no immediate supervisor
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Coworker help [a]	1 (0.5)	5 (2.3)	29 (13.1)	90 (40.7)	96 (43.4)	n/a
Coworker listen [b]	2 (0.9)	16 (7.2)	36 (16.3)	74 (33.5)	93 (42.1)	n/a
Supervisor help [c]	11 (5)	24 (10.9)	35 (15.8)	75 (33.9)	73 (33)	3 (1.4)
Supervisor listen [d]	7 (3.2)	23 (10.4)	33 (14.9)	63 (28.5)	92 (41.6)	3 (1.4)

Note. COPSOQ-III by (Burr et al., 2019).

[a] How often do you get help and support from your colleagues, if needed? [b] How often are your colleagues willing to listen to your problems at work, if needed? [c] How often do you get help and support from your immediate supervisor, if needed? [d] How often is your immediate supervisor willing to listen to your problems at work, if needed?

Table E2

Frequencies of Responses for Intention to Leave (COPSOQ-III [B.10, 1–2])

Question	Never	A few times each year	A few times per month	A few times per week	Every day
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Profession [a]	89 (40.3)	71 (32.1)	39 (17.6)	16 (7.2)	6 (2.7)
Position [b]	75 (33.9)	71 (32.1)	40 (18.1)	25 (11.3)	10 (4.5)

Note. COPSOQ-III by (Burr et al., 2019)

[a] How often have you thought about leaving your profession in the past 12 months? [b] How often have you thought about leaving your current position in the past 12 months?

Appendix F

Syntax for SPSS

Data Cleaning and Regrouping Variables

Some aspects of data cleaning and regrouping were performed manually and thus are not

included in the syntax recorded here.

```
**1) frequencies/descriptive for whole data set; only the categorical variables
FREQUENCIES VARIABLES=INC Other_setting Other_setting_1_TEXT Other_setting_2_TEXT
    Other_setting_3_TEXT GENDER STATE_1 STATE_2 STATE_3 STATE_4 STATE_5 STATE_6
STATE_7 STATE_8 STATE_9
    STATE_10 STATE_11 STATE_12 STATE_13 STATE_14 STATE_15 STATE_16 JOB
JOB_10_TEXT EDU1 EDU1_5_TEXT OT
    SHIFT SHIFT_5_TEXT LEADER
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES=AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT
OT_amount SICK
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX SEMEAN.

**2) got rid of "0" for non-finishers variable
FILTER OFF.
USE ALL.
SELECT IF (Finished = 1).
EXECUTE.
**frequencies/desctiptives for these:
FREQUENCIES VARIABLES=INC Other_setting Other_setting_1_TEXT Other_setting_2_TEXT
    Other_setting_3_TEXT GENDER STATE_1 STATE_2 STATE_3 STATE_4 STATE_5 STATE_6
STATE_7 STATE_8 STATE_9
    STATE_10 STATE_11 STATE_12 STATE_13 STATE_14 STATE_15 STATE_16 JOB
JOB_10_TEXT EDU1 EDU1_5_TEXT OT
    SHIFT SHIFT_5_TEXT LEADER
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES=AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT
OT_amount SICK
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX SEMEAN.

**3. filtering out all non-setting (inclusion criteria)
DATASET ACTIVATE DataSet1.
FILTER OFF.
USE ALL.
SELECT IF (INC = 1).
EXECUTE.
FREQUENCIES VARIABLES=INC GENDER STATE_1 STATE_2 STATE_3 STATE_4 STATE_5 STATE_6
STATE_7 STATE_8 STATE_9
    STATE_10 STATE_11 STATE_12 STATE_13 STATE_14 STATE_15 STATE_16 JOB
JOB_10_TEXT EDU1 EDU1_5_TEXT OT
    SHIFT SHIFT_5_TEXT LEADER
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES=AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT
OT_amount SICK
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX SEMEAN.

**4.re-sorting profession
*** a)  manually resorted profession "other" (10) into nursing groups (2 and 3)
when appropriate
FREQUENCIES VARIABLES=INC GENDER STATE_1 STATE_2 STATE_3 STATE_4 STATE_5 STATE_6
STATE_7 STATE_8 STATE_9
    STATE_10 STATE_11 STATE_12 STATE_13 STATE_14 STATE_15 STATE_16 JOB
JOB_10_TEXT EDU1 EDU1_5_TEXT OT
    SHIFT SHIFT_5_TEXT LEADER
  /ORDER=ANALYSIS.
```

```
DESCRIPTIVES VARIABLES=AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT
OT_amount SICK
   /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX SEMEAN.

**4b) filter out all professions except nursing (2 and 3)
DATASET ACTIVATE DataSet1.
FILTER OFF.
USE ALL.
SELECT IF (JOB <= 3).
EXECUTE.
DATASET ACTIVATE DataSet1.
FILTER OFF.
USE ALL.
SELECT IF (JOB >= 2).
EXECUTE.

**redo descriptives:
FREQUENCIES VARIABLES=INC GENDER STATE_1 STATE_2 STATE_3 STATE_4 STATE_5 STATE_6
STATE_7 STATE_8 STATE_9
     STATE_10 STATE_11 STATE_12 STATE_13 STATE_14 STATE_15 STATE_16 JOB
JOB_10_TEXT EDU1 EDU1_5_TEXT OT
    SHIFT SHIFT_5_TEXT LEADER
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES=AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT
OT_amount SICK
   /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX SEMEAN.

**5. manual sorting for education and shift type
** then redid descriptive so i can do #6 search for missings and outliers:
FREQUENCIES VARIABLES=INC GENDER STATE_1 STATE_2 STATE_3 STATE_4 STATE_5 STATE_6
STATE_7 STATE_8 STATE_9
     STATE_10 STATE_11 STATE_12 STATE_13 STATE_14 STATE_15 STATE_16 JOB
JOB_10_TEXT EDU1 EDU1_5_TEXT OT
    SHIFT SHIFT_5_TEXT LEADER
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES=AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT
OT_amount SICK
   /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX SEMEAN.

**outliers
FREQUENCIES VARIABLES=HOURS_CONTRACT OT_amount
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MEAN MEDIAN MODE
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=SICK
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MEAN MEDIAN MODE
  /ORDER=ANALYSIS.

*** set OT no to 0 and redo descriptives
DO IF (OT = 0).
RECODE OT_amount (SYSMIS=0).
END IF.
EXECUTE.

DESCRIPTIVES VARIABLES=OT OT_amount
  /STATISTICS=MEAN STDDEV RANGE MIN MAX.

FREQUENCIES VARIABLES=OT
  /ORDER=ANALYSIS.
```

Creating Scale and Subscale Variables

Note: creating variables for MBI-HSS subscales was done using scoring in Qualtrics (www.qualtrics.com) and therefore were already part of the original downloaded dataset.

```
**making overall stress score of 43 items
```

```
COMPUTE stress_overall_43=MHPSS_1 + MHPSS_2 + MHPSS_3 + MHPSS_4 + MHPSS_5 +
MHPSS_6 + MHPSS_7 +
    MHPSS_8 + MHPSS_9 + MHPSS_10 + MHPSS_11 + MHPSS_12 + MHPSS_13 + MHPSS_14 +
MHPSS_15 + MHPSS_16 +
    MHPSS_17 + MHPSS_18 + MHPSS_19 + MHPSS_20 + MHPSS_21 + MHPSS_22 + MHPSS_23 +
MHPSS_24 + MHPSS_25 +
    MHPSS_26 + MHPSS_27 + MHPSS_28 + MHPSS_29 + MHPSS_30 + MHPSS_31 + MHPSS_32 +
MHPSS_33 + MHPSS_34 +
    MHPSS_35 + MHPSS_36 + MHPSS_37 + MHPSS_38 + MHPSS_39 + MHPSS_40 + MHPSS_41 +
MHPSS_42 + MHPSS_43.
EXECUTE

** created 42 MHPSS overall score
COMPUTE stress_overall_42=MHPSS_1 + MHPSS_2 + MHPSS_3 + MHPSS_4 + MHPSS_5 +
MHPSS_6 + MHPSS_7 +
    MHPSS_8 + MHPSS_9 + MHPSS_10 + MHPSS_11 + MHPSS_12 + MHPSS_13 + MHPSS_14 +
MHPSS_15 + MHPSS_16 +
    MHPSS_17 + MHPSS_18 + MHPSS_19 + MHPSS_20 + MHPSS_21 + MHPSS_22 + MHPSS_23 +
MHPSS_24 + MHPSS_25 +
    MHPSS_26 + MHPSS_27 + MHPSS_28 + MHPSS_29 + MHPSS_30 + MHPSS_31 + MHPSS_32 +
MHPSS_33 + MHPSS_34 +
    MHPSS_35 + MHPSS_36 + MHPSS_37 + MHPSS_38 + MHPSS_39 + MHPSS_40 + MHPSS_41 +
MHPSS_42.
EXECUTE

**created MHPSS 42 subscales
COMPUTE workload_MHPSS42=MHPSS_1 + MHPSS_8 + MHPSS_15 + MHPSS_22 + MHPSS_29 +
MHPSS_36.
EXECUTE

COMPUTE client_related_MHPSS42=MHPSS_2 + MHPSS_9 + MHPSS_16 + MHPSS_23 + MHPSS_30
+ MHPSS_37.
EXECUTE

COMPUTE organizational_MHPSS42=MHPSS_3 + MHPSS_10 + MHPSS_17 + MHPSS_24 +
MHPSS_31 + MHPSS_38.
EXECUTE

COMPUTE relationships_MHPSS42=MHPSS_4 + MHPSS_11 + MHPSS_18 + MHPSS_25 + MHPSS_32
+ MHPSS_39.
EXECUTE

COMPUTE resources_MHPSS42=MHPSS_5 + MHPSS_12 + MHPSS_19 + MHPSS_26 + MHPSS_33 +
MHPSS_40.
EXECUTE

COMPUTE selfdoubt_MHPSS42=MHPSS_6 + MHPSS_13 + MHPSS_20 + MHPSS_27 + MHPSS_34 +
MHPSS_41.
EXECUTE

COMPUTE home_difficulties_MHPSS42=MHPSS_7 + MHPSS_14 + MHPSS_21 + MHPSS_28 +
MHPSS_35 + MHPSS_42.
EXECUTE

**creating SS subscale
COMPUTE coworker_support=SUPPORT_COLLEAGUES_1 + SUPPORT_COLLEAGUES_2.
EXECUTE

COMPUTE supervisor_support=SUPPORT_SUPERVISOR_1 + SUPPORT_SUPERVISOR_2.
EXECUTE

**recoding supervisor support questions 1 and 2 to make 5 (no supervisor) be a
score of 0, then we can re-make total SS score and suerpvisor score to get better
means
RECODE SUPPORT_SUPERVISOR_1 (0=0) (1=1) (2=2) (3=3) (4=4) (5=0) INTO
rescored_supervisor_SS_1.
VARIABLE LABELS  rescored_supervisor_SS_1 'supervisor support 1 rescored for
total'.
```

```
EXECUTE.

RECODE SUPPORT_SUPERVISOR_2 (0=0) (1=1) (2=2) (3=3) (4=4) (5=0) INTO
rescored_supervisor_SS_2.
VARIABLE LABELS  rescored_supervisor_SS_2 'supervisor support 2 rescored for
total'.
EXECUTE.

**making new rescored overal social support score variable
COMPUTE rescored_SS_total=SUPPORT_COLLEAGUES_1 + SUPPORT_COLLEAGUES_2 +
rescored_supervisor_SS_1 +
    rescored_supervisor_SS_2.
EXECUTE.

**made new superivosr subscale viarable using new scoring
COMPUTE superivisor_rescored_SS_total=rescored_supervisor_SS_1 +
rescored_supervisor_SS_2.
EXECUTE.
```

Calculation of Reliability Coefficients

```
**MHPSS 43 item reliability
RELIABILITY
  /VARIABLES=MHPSS_1 MHPSS_2 MHPSS_3 MHPSS_4 MHPSS_5 MHPSS_6 MHPSS_7 MHPSS_8
MHPSS_9 MHPSS_10
    MHPSS_11 MHPSS_12 MHPSS_13 MHPSS_14 MHPSS_15 MHPSS_16 MHPSS_17 MHPSS_18
MHPSS_19 MHPSS_20 MHPSS_21
    MHPSS_22 MHPSS_23 MHPSS_24 MHPSS_25 MHPSS_26 MHPSS_27 MHPSS_28 MHPSS_29
MHPSS_30 MHPSS_31 MHPSS_32
    MHPSS_33 MHPSS_34 MHPSS_35 MHPSS_36 MHPSS_37 MHPSS_38 MHPSS_39 MHPSS_40
MHPSS_41 MHPSS_42 MHPSS_43
  /SCALE('MHPSS 43 reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


*MHPSS 42 item reliability
RELIABILITY
  /VARIABLES=MHPSS_1 MHPSS_2 MHPSS_3 MHPSS_4 MHPSS_5 MHPSS_6 MHPSS_7 MHPSS_8
MHPSS_9 MHPSS_10
    MHPSS_11 MHPSS_12 MHPSS_13 MHPSS_14 MHPSS_15 MHPSS_16 MHPSS_17 MHPSS_18
MHPSS_19 MHPSS_20 MHPSS_21
    MHPSS_22 MHPSS_23 MHPSS_24 MHPSS_25 MHPSS_26 MHPSS_27 MHPSS_28 MHPSS_29
MHPSS_30 MHPSS_31 MHPSS_32
    MHPSS_33 MHPSS_34 MHPSS_35 MHPSS_36 MHPSS_37 MHPSS_38 MHPSS_39 MHPSS_40
MHPSS_41 MHPSS_42
  /SCALE('MHPSS 42 reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


** MHPSS subscale WORKLOAD reliability
RELIABILITY
  /VARIABLES=MHPSS_1 MHPSS_8 MHPSS_15 MHPSS_22 MHPSS_29 MHPSS_36
  /SCALE('MHPSS workload reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.

** MHPSS subscales client-related issues
RELIABILITY
  /VARIABLES=MHPSS_2 MHPSS_9 MHPSS_16 MHPSS_23 MHPSS_30 MHPSS_37
  /SCALE('MHPSS client-related difficulties reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.

**MHPSS subscale Organizational structure and processes
```

```
RELIABILITY
  /VARIABLES=MHPSS_3 MHPSS_10 MHPSS_17 MHPSS_24 MHPSS_31 MHPSS_38
  /SCALE('MHPSS organizational structures and processes reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


**MHPSS subscale Relationships and conflicts with other professionals
RELIABILITY
  /VARIABLES=MHPSS_4 MHPSS_11 MHPSS_18 MHPSS_25 MHPSS_32 MHPSS_39
  /SCALE('MHPSS Relationships and conflicts with other professionals
reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


**MHPSS sunscale Lack of resources reliability
RELIABILITY
  /VARIABLES=MHPSS_5 MHPSS_12 MHPSS_19 MHPSS_26 MHPSS_33 MHPSS_40
  /SCALE('MHPSS Lack of resources reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


**MHPSS subscale Professional self-doubt reliability
RELIABILITY
  /VARIABLES=MHPSS_6 MHPSS_13 MHPSS_20 MHPSS_27 MHPSS_34 MHPSS_41
  /SCALE('MHPSS Professional self-doubt reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


***MHPSS subscale Home-work conflicts
RELIABILITY
  /VARIABLES=MHPSS_7 MHPSS_14 MHPSS_21 MHPSS_28 MHPSS_35 MHPSS_42
  /SCALE('MHPSS Home-work conflicts reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


**MBI EE reliatbility
RELIABILITY
  /VARIABLES=MBI_1 MBI_2 MBI_3 MBI_6 MBI_8 MBI_13 MBI_14 MBI_16 MBI_20
  /SCALE('MBI EE reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


**MBI DP reliabtiliy
RELIABILITY
  /VARIABLES=MBI_5 MBI_10 MBI_11 MBI_15 MBI_22
  /SCALE('MBI DP reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


**MBI PA reliability
RELIABILITY
  /VARIABLES=MBI_4 MBI_7 MBI_9 MBI_12 MBI_17 MBI_18 MBI_19 MBI_21
  /SCALE('MBI PA reliability') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR COV
  /SUMMARY=TOTAL COV CORR.


**MBI overall reliability: not calculated because o did it only for subscales
**social support total reliatbility
RELIABILITY
```

```
   /VARIABLES=SUPPORT_COLLEAGUES_1 SUPPORT_COLLEAGUES_2 SUPPORT_SUPERVISOR_1
SUPPORT_SUPERVISOR_2
   /SCALE('Social support total reliability') ALL
   /MODEL=ALPHA
   /STATISTICS=CORR COV
   /SUMMARY=TOTAL COV CORR.


**social support from colleague reliability
RELIABILITY
   /VARIABLES=SUPPORT_COLLEAGUES_1 SUPPORT_COLLEAGUES_2
   /SCALE('Social support coworker reliability') ALL
   /MODEL=ALPHA
   /STATISTICS=CORR COV
   /SUMMARY=TOTAL COV CORR.


** social support from supervisor reliability
RELIABILITY
   /VARIABLES=SUPPORT_SUPERVISOR_1 SUPPORT_SUPERVISOR_2
   /SCALE('Social support superivosr reliability') ALL
   /MODEL=ALPHA
   /STATISTICS=CORR COV
   /SUMMARY=TOTAL COV CORR.


**intention to leave total reliability
RELIABILITY
   /VARIABLES=INTENT_LEAVE_1 INTENT_LEAVE_2
   /SCALE('intention to leave total reliability') ALL
   /MODEL=ALPHA
   /STATISTICS=CORR COV
   /SUMMARY=TOTAL COV CORR.
```

Sample Descriptives

```
**sample characteristics
FREQUENCIES VARIABLES=GENDER AGE STATE_1 STATE_2 STATE_3 STATE_4 STATE_5 STATE_6
STATE_7 STATE_8
    STATE_9 STATE_10 STATE_11 STATE_12 STATE_13 STATE_14 STATE_15 STATE_16 JOB
JOB_10_TEXT EDU1
    EDU1_5_TEXT EXP_total EXP_acute EXP_current HOURS_CONTRACT OT OT_amount SHIFT
SHIFT_5_TEXT LEADER
    SICK
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM MEAN MEDIAN MODE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Stressor Item Rankings According to Means

```
*****list of stressor items according to descending means (to get top ten)
DESCRIPTIVES VARIABLES=MHPSS_1 MHPSS_2 MHPSS_3 MHPSS_4 MHPSS_5 MHPSS_6 MHPSS_7
MHPSS_8 MHPSS_9
    MHPSS_10 MHPSS_11 MHPSS_12 MHPSS_13 MHPSS_14 MHPSS_15 MHPSS_16 MHPSS_17
MHPSS_18 MHPSS_19 MHPSS_20
    MHPSS_21 MHPSS_22 MHPSS_23 MHPSS_24 MHPSS_25 MHPSS_26 MHPSS_27 MHPSS_28
MHPSS_29 MHPSS_30 MHPSS_31
    MHPSS_32 MHPSS_33 MHPSS_34 MHPSS_35 MHPSS_36 MHPSS_37 MHPSS_38 MHPSS_39
MHPSS_40 MHPSS_41 MHPSS_42
    MHPSS_43
  /STATISTICS=MEAN STDDEV MIN MAX
  /SORT=MEAN (D).
```

Stress Subscales Rankings According to Item Means

```
**stress subscale rankings item means
COMPUTE
mean_workload=MEAN.6(MHPSS_1,MHPSS_8,MHPSS_15,MHPSS_22,MHPSS_29,MHPSS_36).
EXECUTE.
```

```
COMPUTE
mean_client_related=MEAN.6(MHPSS_2,MHPSS_9,MHPSS_16,MHPSS_23,MHPSS_30,MHPSS_37).
EXECUTE.

COMPUTE
mean_organizational=MEAN.6(MHPSS_3,MHPSS_10,MHPSS_17,MHPSS_24,MHPSS_31,MHPSS_38).
EXECUTE.

COMPUTE
mean_relationships=MEAN.6(MHPSS_4,MHPSS_11,MHPSS_18,MHPSS_25,MHPSS_32,MHPSS_39).
EXECUTE.

COMPUTE
mean_resources=MEAN.6(MHPSS_5,MHPSS_12,MHPSS_19,MHPSS_26,MHPSS_33,MHPSS_40).
EXECUTE.

COMPUTE
mean_selfdoubt=MEAN.6(MHPSS_6,MHPSS_13,MHPSS_20,MHPSS_27,MHPSS_34,MHPSS_41).
EXECUTE.

COMPUTE
mean_homework=MEAN.6(MHPSS_7,MHPSS_14,MHPSS_21,MHPSS_28,MHPSS_35,MHPSS_42).
EXECUTE.

***Getting means scores:
DESCRIPTIVES VARIABLES=mean_workload mean_client_related mean_organizational
mean_relationships
    mean_resources mean_selfdoubt mean_homework
  /STATISTICS=MEAN STDDEV RANGE MIN MAX
  /SORT=MEAN (D).
```

Descriptives of Main Outcome Variables

```
***stress descriptives
DESCRIPTIVES VARIABLES=workload_MHPSS42 client_related_MHPSS42
organizational_MHPSS42
    relationships_MHPSS42 resources_MHPSS42 selfdoubt_MHPSS42
home_difficulties_MHPSS42
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX
  /SORT=MEAN (D).

FREQUENCIES VARIABLES=stress_overall_43 stress_overall_42
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM MEAN MEDIAN MODE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.

**burnout descriptives
DESCRIPTIVES VARIABLES=MBI_1 MBI_2 MBI_3 MBI_4 MBI_5 MBI_6 MBI_7 MBI_8 MBI_9
MBI_10 MBI_11 MBI_12
    MBI_13 MBI_14 MBI_15 MBI_16 MBI_17 MBI_18 MBI_19 MBI_20 MBI_21 MBI_22 SC1 SC2
SC3
  /STATISTICS=MEAN STDDEV MIN MAX.
FREQUENCIES VARIABLES=SC1 SC2 SC3
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN MODE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.

***create categories according to norm values for MHPs
RECODE SC1 (21 thru Highest=3) (14 thru 20=2) (Lowest thru 13=1) INTO
MBI_EE_MH_caseness.
VARIABLE LABELS  MBI_EE_MH_caseness 'MBI EE subscale caseness mental health
professions'.
EXECUTE.

RECODE SC2 (8 thru Highest=3) (5 thru 7=2) (Lowest thru 4=1) INTO
MBI_DP_MH_caseness.
VARIABLE LABELS  MBI_DP_MH_caseness 'MBI DP subscale caseness mental health
professions'.
```

```
EXECUTE.

RECODE SC3 (34 thru Highest=3) (29 thru 33=2) (Lowest thru 28=1) INTO
MBI_PA_MH_caseness.
VARIABLE LABELS  MBI_PA_MH_caseness 'MBI PA subscale caseness for mental health
professions'.
EXECUTE.

***Burnout caseness descriptives
FREQUENCIES VARIABLES=MBI_EE_MP_caseness MBI_DP_MP_caseness MBI_PA_MP_caseness
MBI_EE_MH_caseness
    MBI_DP_MH_caseness MBI_PA_MH_caseness
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN MODE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.

*** support and intention to leave descriptives and frequencies
FREQUENCIES VARIABLES=INTENT_LEAVE_1 INTENT_LEAVE_2 Contract_Reason
SUPPORT_COLLEAGUES_1
    SUPPORT_COLLEAGUES_2 SUPPORT_SUPERVISOR_1 SUPPORT_SUPERVISOR_2 SC4 SC5
coworker_support
    supervisor_support
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN MODE
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES=rescored_SS_total superivisor_rescored_SS_total
coworker_support
  /STATISTICS=MEAN STDDEV RANGE MIN MAX.
```

Statistical Tests: Assumptions Common for All Tests

Please note that any remaining assumptions for each test are part of the syntax for each

test.

```
**Checking for outliers
EXAMINE VARIABLES=AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT_amount
SICK SC1 SC2 SC3 SC4
    stress_overall_42 workload_MHPSS42 client_related_MHPSS42
organizational_MHPSS42
    relationships_MHPSS42 resources_MHPSS42 selfdoubt_MHPSS42
home_difficulties_MHPSS42
    coworker_support rescored_SS_total superivisor_rescored_SS_total
  /PLOT BOXPLOT STEMLEAF
  /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
  /CINTERVAL 95
  /MISSING LISTWISE
  /NOTOTAL.

***Checking normal distribution using plots
EXAMINE VARIABLES= stress_overall_42 SC1 SC2 SC3 SC4 workload_MHPSS42
client_related_MHPSS42 organizational_MHPSS42
    relationships_MHPSS42 resources_MHPSS42 selfdoubt_MHPSS42
home_difficulties_MHPSS42
    coworker_support rescored_SS_total superivisor_rescored_SS_total AGE
EXP_total EXP_acute EXP_current OT_amount SICK HOURS_CONTRACT
  /PLOT HISTOGRAM NPPLOT
  /STATISTICS DESCRIPTIVES
  /CINTERVAL 95
  /MISSING LISTWISE
  /NOTOTAL.
```

t-Tests for Main Variables and Individual and Job-Related Characteristics

```
** Stress level t-tests
** GENDER x stress t-test
```

```
T-TEST GROUPS=GENDER(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=stress_overall_42
  /CRITERIA=CI(.95).

** PROFESSION x stress level
T-TEST GROUPS=JOB(2 3)
  /MISSING=ANALYSIS
  /VARIABLES=stress_overall_42
  /CRITERIA=CI(.95).

** leadership x stress level
T-TEST GROUPS=LEADER(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=stress_overall_42
  /CRITERIA=CI(.95).

** education (2 groups) x stress level,
T-TEST GROUPS=education_regrouped(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=stress_overall_42
  /CRITERIA=CI(.95).

**EE t-tests
T-TEST GROUPS=GENDER(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=SC1
  /CRITERIA=CI(.95).

T-TEST GROUPS=JOB(2 3)
  /MISSING=ANALYSIS
  /VARIABLES=SC1
  /CRITERIA=CI(.95).

T-TEST GROUPS=LEADER(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=SC1
  /CRITERIA=CI(.95).

T-TEST GROUPS=education_regrouped(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=SC1
  /CRITERIA=CI(.95).

** DP t-tests
T-TEST GROUPS=GENDER(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=SC2
  /CRITERIA=CI(.95).

T-TEST GROUPS=JOB(2 3)
  /MISSING=ANALYSIS
  /VARIABLES=SC2
  /CRITERIA=CI(.95).

T-TEST GROUPS=education_regrouped(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=SC2
  /CRITERIA=CI(.95).

T-TEST GROUPS=LEADER(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=SC2
  /CRITERIA=CI(.95).

**PA t-tests
T-TEST GROUPS=GENDER(1 2)
  /MISSING=ANALYSIS
```

```
  /VARIABLES=SC3
  /CRITERIA=CI(.95).

T-TEST GROUPS=JOB(2 3)
  /MISSING=ANALYSIS
  /VARIABLES=SC3
  /CRITERIA=CI(.95).

T-TEST GROUPS=education_regrouped(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=SC3
  /CRITERIA=CI(.95).

T-TEST GROUPS=LEADER(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=SC3
  /CRITERIA=CI(.95).

** social support t tests
T-TEST GROUPS=GENDER(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=rescored_SS_total
  /CRITERIA=CI(.95).

T-TEST GROUPS=JOB(2 3)
  /MISSING=ANALYSIS
  /VARIABLES=rescored_SS_total
  /CRITERIA=CI(.95).

T-TEST GROUPS=education_regrouped(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=rescored_SS_total
  /CRITERIA=CI(.95).

T-TEST GROUPS=LEADER(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=rescored_SS_total
  /CRITERIA=CI(.95).

**intention to quit total score t tests
T-TEST GROUPS=GENDER(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=SC4
  /CRITERIA=CI(.95).

T-TEST GROUPS=JOB(2 3)
  /MISSING=ANALYSIS
  /VARIABLES=SC4
  /CRITERIA=CI(.95).

T-TEST GROUPS=education_regrouped(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=SC4
  /CRITERIA=CI(.95).

T-TEST GROUPS=LEADER(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=SC4
  /CRITERIA=CI(.95).
```

Correlations of Main Outcome Variables with Individual and Job-Related Characteristics

```
**Stress x IVs spearman correlation
NONPAR CORR
  /VARIABLES=stress_overall_42 AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT
OT_amount SICK
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

```
** burnout x IVs spearman correlation
NONPAR CORR
  /VARIABLES=SC1 SC2 SC3 AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT
OT_amount SICK
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.


**social support x IVs spearman correlation
NONPAR CORR
  /VARIABLES=rescored_SS_total AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT
OT_amount SICK
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.


***Intention to leave x IVs spearman correlation
NONPAR CORR
  /VARIABLES=SC4 AGE EXP_total EXP_acute EXP_current HOURS_CONTRACT OT_amount
SICK
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Chi-Squares Tests for Burnout Categories and Individual and Job-Related Characteristics

```
*** GENDER x burnout
CROSSTABS
  /TABLES=MBI_EE_MH_caseness BY GENDER
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_DP_MH_caseness BY GENDER
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_PA_MH_caseness BY GENDER
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

*** PROFESSIONAL GROUP x burnout
CROSSTABS
  /TABLES=MBI_EE_MH_caseness BY JOB
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_DP_MH_caseness BY JOB
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_PA_MH_caseness BY JOB
```

```
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

*** LEADERSHIP POSITION x burnout
CROSSTABS
  /TABLES=MBI_EE_MH_caseness BY LEADER
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_DP_MH_caseness BY LEADER
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_PA_MH_caseness BY LEADER
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

*** OT (yes/no) x burnout
CROSSTABS
  /TABLES=MBI_EE_MH_caseness BY OT
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_DP_MH_caseness BY OT
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_PA_MH_caseness BY OT
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

**education group (rescored) x burnout
CROSSTABS
  /TABLES=MBI_EE_MH_caseness BY education_regrouped
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_DP_MH_caseness BY education_regrouped
  /FORMAT=AVALUE TABLES
```

```
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.

CROSSTABS
  /TABLES=MBI_PA_MH_caseness BY education_regrouped
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL
  /BARCHART.
```

Correlations of Main Variables

```
***CORRELATIONS
  /VARIABLES=stress_overall_42 workload_MHPSS42 client_related_MHPSS42
    organizational_MHPSS42 relationships_MHPSS42 resources_MHPSS42
selfdoubt_MHPSS42
    home_difficulties_MHPSS42 SC1 SC2 SC3 rescored_SS_total SC4
  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
```

Moderation Models

```
**moderation model for EE (using SS as continuous IV)
  REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SC1
  /METHOD=ENTER stress_overall_42
  /METHOD=ENTER rescored_SS_total
  /METHOD=ENTER stress_x_SScontinuous
  /PARTIALPLOT ALL
  /SCATTERPLOT=(*ZRESID ,*ZPRED) (*SRESID ,*ZPRED)
  /RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
  /CASEWISE PLOT(ZRESID) OUTLIERS(2)
  /SAVE PRED ZPRED ADJPRED MAHAL COOK LEVER RESID ZRESID SRESID DRESID SDBETA
SDFIT.

** moderation mode for DP (using SS as continuous IV)
  REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SC2
  /METHOD=ENTER stress_overall_42
  /METHOD=ENTER rescored_SS_total
  /METHOD=ENTER stress_x_SScontinuous
  /PARTIALPLOT ALL
  /SCATTERPLOT=(*ZRESID ,*ZPRED) (*SRESID ,*ZPRED)
  /RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
  /CASEWISE PLOT(ZRESID) OUTLIERS(2)
  /SAVE PRED ZPRED ADJPRED MAHAL COOK LEVER RESID ZRESID SRESID DRESID SDBETA
SDFIT.

** moderation model for PA (using SS as continuous IV)
  REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) BCOV R ANOVA COLLIN TOL CHANGE ZPP
```

```
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT SC3
/METHOD=ENTER stress_overall_42
/METHOD=ENTER rescored_SS_total
/METHOD=ENTER stress_x_SScontinuous
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED) (*SRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/CASEWISE PLOT(ZRESID) OUTLIERS(2)
/SAVE PRED ZPRED ADJPRED MAHAL COOK LEVER RESID ZRESID SRESID DRESID SDBETA
SDFIT.
```