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Burnout symptoms in preschool teachers and the relation to job conditions and quality of care

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Mareike Trauernicht, M.Sc.

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Gutachterinnen

Erstgutachterin: Prof. Dr. Yvonne Anders, Otto-Friedrich-Universität Bamberg

Zweitgutachterin: Prof. Dr. Bettina Hannover, Freie Universität Berlin

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Content

SUMMARY

Preschool teachers have become central educators of young children and they are crucial for the quality of care in early childhood education and care (ECEC) institutions. Unfortunately, their profession is particularly affected by work-related burnout symptoms, which should be given special attention in light of the current expansion and professionalization efforts in the ECEC system. Burnout research suggests that burnout symptoms arise from chronic work stress, resulting from imbalances between personal and environmental job demands and resources and leading to negative consequences for institutions, workers, and service recipients. However, little is known about the origins and consequences of preschool teachers' burnout symptoms in particular, especially in Germany. Hence, the present dissertational project explored preschool teachers' burnout symptoms and the role of (satisfaction with) different job conditions as well as consequences for the quality of care.

In more detail, study 1 investigated personal and environmental job conditions in relation to preschool teachers' emotional exhaustion, a core symptom of burnout. Individual-level data obtained from 1,384 preschool teachers from 204 preschools across Germany as well as respective preschool-level data were subjected to multilevel analysis. Findings revealed that preschool differences explained a small amount of variance in preschool teachers' emotional exhaustion and particularly highlighted the role of social experiences at the workplace, such as the perceived team climate and relation to parents. Study 2 explored associations between different aspects of job satisfaction – understood as the subjective-emotional fit between one's own expectations and the perceived work reality – and all three burnout dimensions, including emotional exhaustion, depersonalization, and reduced personal accomplishment ($N = 346$). The results emphasized the role of satisfaction with team collaboration and cooperation with parents across all burnout dimensions. Additionally,

emotional exhaustion was reversely linked to satisfaction with opportunities for promotions, working hours, and wages.

Concerning the consequences of burnout symptoms, study 3 developed and tested a novel experimental design using an autobiographical memory task to investigate the effects of induced burnout symptoms on cognitive and affective empathy, an important prerequisite for high-quality caregiving. With a sample of 355 participants recruited via Amazon.com's Mturk, findings indicated that the experimental group indeed showed higher burnout symptoms and decreased cognitive empathy compared to the control groups. Finally, in a sample of 1,389 preschool teachers nested in 204 preschools in Germany, study 4 addressed the relation of preschool teachers' levels of emotional exhaustion and the frequency of language and early literacy related educational activities embedded into daily routines, considered as an important aspect and domain of high process quality. Multilevel analyses demonstrated that emotional exhaustion was negatively linked to the frequency of educational activities beyond important structural characteristics.

Taken together, the findings obtained underline the significance of the social environment for preschool teachers' burnout symptoms. Further, they point toward negative consequences of burnout symptoms for preschool teachers' empathy and professional practices. The present dissertation addresses an understudied topic of high societal relevance. It has the potential to inform theory development and future empirical work as well as to provide scientific evidence on where and why to intervene against burnout symptoms in preschool teachers.

ZUSAMMENFASSUNG

Frühpädagogische Fachkräfte sind mittlerweile zentrale Bezugspersonen für Kinder und spielen eine entscheidende Rolle für die Qualität der Betreuung in Einrichtungen frühkindlicher Bildung, Betreuung und Erziehung. Nun ist diese Berufsgruppe besonders von arbeitsbezogenen Burnout-Symptomen betroffen, was insbesondere angesichts der gegenwärtigen Expansions- und Professionalisierungsbestrebungen im frühkindlichen Bildungssystem besonders beachtet werden sollte. Gemäß der Burnout-Forschung entstehen Burnout-Symptome aufgrund von langanhaltendem Stress am Arbeitsplatz, insbesondere aus einem Ungleichgewicht zwischen individuellen und umweltbezogenen Arbeitsanforderungen und Ressourcen mit negativen Folgen für Institutionen, Arbeitnehmer und Leistungsempfänger. Bisher gibt es jedoch erst wenig Forschung zu den Ursprüngen und Auswirkungen von Burnout-Symptomen bei frühpädagogischem Fachpersonal. Aus diesem Grund widmete sich die vorliegende Dissertation der Untersuchung von Burnout-Symptomen von frühpädagogischen Fachkräften und der Rolle unterschiedlicher Arbeitsbedingungen sowie der Konsequenzen für die Qualität der Betreuung.

Die erste Studie untersuchte persönliche und umgebungsbezogene Arbeitsbedingungen in Bezug auf emotionale Erschöpfung von frühpädagogischen Fachkräften, Kernsymptom von Burnout. Dafür wurden individuelle Daten von 1.384 frühpädagogischen Fachkräften aus 204 Kindertagesstätten aus ganz Deutschland sowie Daten der jeweiligen Kindertagesstätten einer Mehrebenenanalyse unterzogen. Die Befunde zeigten, dass Einrichtungsunterschiede eine geringe Varianz in der emotionalen Erschöpfung der frühpädagogischen Fachkräfte erklärten, und hoben insbesondere die Rolle sozialer Erfahrungen am Arbeitsplatz, wie z.B. das wahrgenommene Teamklima und die Beziehung zu den Eltern, hervor. Die zweite Studie erforschte Zusammenhänge zwischen verschiedenen Aspekten der Arbeitszufriedenheit – verstanden als subjektiv-emotionale Passung von

eigenen Vorstellungen und der wahrgenommenen Arbeitsrealität – und allen drei Burnout-Dimensionen: emotionale Erschöpfung, Depersonalisation und verringerte persönliche Leistungsfähigkeit (N = 346). Die Ergebnisse betonten die Rolle der Zufriedenheit mit der Zusammenarbeit im Team sowie mit der Zusammenarbeit mit den Eltern für alle Burnout-Dimensionen. Zusätzlich konnte ein negativer Zusammenhang zwischen emotionaler Erschöpfung und der Zufriedenheit mit Aufstiegschancen, Arbeitszeiten und dem Gehalt aufgezeigt werden.

In Bezug auf die Auswirkungen von Burnout-Symptomen, wurde in Studie 3 ein neues experimentelles Design mithilfe einer autobiographischen Gedächtnisaufgabe entwickelt, mit der der kausale Einfluss von induzierten Burnout-Symptomen auf kognitive und affektive Empathie untersucht wurde, einer wichtigen Voraussetzung für gute Betreuung. Die Stichprobe bestand aus 355 Personen, die via Amazon.com's Mturk rekrutiert wurden. Die Befunde zeigten, dass die Experimentalgruppe tatsächlich erhöhte Burnout-Symptome sowie eine geringere kognitive Empathie vorwies. Studie 4 befasste sich schlussendlich mit der Beziehung zwischen dem Erschöpfungsgrad von frühpädagogischen Fachkräften und der Häufigkeit alltagsintegrierter sprach- und früher schreibbezogener Bildungsaktivitäten, die als wichtige Aspekte und Domäne der Prozessqualität verstanden werden. Die Stichprobe bestand aus 1.389 frühpädagogischen Fachkräften aus 204 Kindertagesstätten in Deutschland. Mehrebenenanalysen zeigten den negativen Zusammenhang zwischen emotionaler Erschöpfung und der Häufigkeit an Bildungsaktivitäten auf, sogar über wichtige strukturelle Charakteristika hinaus.

Zusammengenommen unterstreichen die gewonnenen Befunde die hohe Bedeutsamkeit des sozialen Arbeitsumfelds für Burnout-Symptome frühpädagogischer Fachkräfte. Des Weiteren weisen sie auf negative Folgen für soziale Kompetenzen frühpädagogischer Fachkräfte sowie für ihr professionelles Handeln hin. Die vorliegende

Dissertation befasst sich mit einem wenig erforschten Thema von hoher gesellschaftlicher Relevanz. Damit kann sie zur weiteren Theorieentwicklung beitragen, zukünftige empirische Arbeiten informieren sowie wissenschaftliche Erkenntnisse darüber liefern, an welchen Stellen und warum gegen Burnout-Symptome von frühpädagogischen Fachkräften vorgegangen werden sollte.

GENERAL THEORETICAL BACKGROUND

1. Introduction

Early childhood education and care (ECEC) has received increasing policy attention in the past decades (Organisation for Economic Co-operation and Development, 2020a). Stakeholders and politicians alike have recognized its potential for the reduction of poverty and contribution to educational justice (Organisation for Economic Co-operation and Development, 2017). From an economic perspective, it has been acknowledged that early investment in children leads to higher returns in the long run (Heckman, 2006). As a response, many countries initiated quantitative and qualitative expansions of the ECEC sector, including Germany (Autorengruppe Fachkräftebarometer, 2019; Organisation for Economic Co-operation and Development, 2020a). Nowadays, 34% of one-year-old, 46% of two-year-old, and 88% of all children aged three to five in countries that are members of the *Organisation for Economic Co-operation and Development* (OECD) attend ECEC institutions (Organisation for Economic Co-operation and Development, 2020b). The numbers for Germany are even slightly higher, with 41% of one-year-old, 67% of two-year-old, and 94% of three- to five-year-old children participating in ECEC for a considerable amount of time during the week (Organisation for Economic Co-operation and Development, 2020b). Therefore, next to families, preschool[1] teachers have become central caregivers, educators, and socializers of young children (Denham et al., 2012; Denham et al., 2017; Viernickel & Fuchs-Rechlin, 2015). Their professional behavior and functioning at work have been recognized as key for high-quality care (Organisation for Economic Co-

[1] In this dissertation, the term *preschool* describes early childhood institutions with non-familial caregivers (*preschool teachers*) for children of all ages before entering primary school.

operation and Development, 2020a). High-quality care, in turn, is pivotal for positive cognitive and socio-emotional long-term effects of ECEC attendance in children (Anders, 2013; Burchinal et al., 2010; Melhuish et al., 2015; Roßbach et al., 2008; Sammons et al., 2008; Sylva et al., 2011).

At the same time, research of the last decades has shown that preschool teachers are particularly affected by work-related burnout symptoms (e.g., Blöchliger & Bauer, 2017; Goelman & Guo, 1998; Jungbauer & Ehlen, 2015; Koch, P. et al., 2015; Manlove, 1993; Maslach & Pines, 1977; Viernickel et al., 2013). Burnout symptoms are characterized by fatigue symptoms associated with distanced attitudes toward (people at) work and subjectively perceived reduced accomplishment (Maslach et al., 2001). The causes of burnout are generally considered a response to chronic stress on the job evolving from imbalances between personal and environmental factors (Maslach et al., 2001; Maslach, 2017; Maslach & Leiter, 2017). Thereby, the focus of burnout theories is often on strenuous job demands and resources (Alarcon, 2011; Demerouti et al., 2001; Hobfoll et al., 2018; Schaufeli, 2017). Concerning the consequences of burnout symptoms, research across different professional groups demonstrated relations to poor health outcomes, decreased job performance, and job withdrawal (Maslach et al., 2001; Swider & Zimmerman, 2010). These aspects are of high relevance for the ECEC sector that is already struggling with staff shortages and increasing demands (Organisation for Economic Co-operation and Development, 2017; Schreyer & Krause, 2016). Although there is growing research attention toward preschool teachers' wellbeing, including burnout symptoms (Cumming, 2017), there is a general call for more research to close existing gaps of knowledge (Smith & Lawrence, 2019) and to effectively address the problem. Open questions concern the influence of (profession-)specific job conditions on preschool teachers' burnout symptoms as well as their consequences for the quality of care, including the effect on professional competencies,

such as empathy, and the relation to preschool teachers' practices. The present dissertation addresses these research gaps with four empirical studies.

The first study explores the role of the preschool center and personal, structural, as well as social job conditions of preschool teachers in relation to their symptoms of emotional exhaustion, generally considered a core dimension of burnout (Kristensen et al., 2005; Maslach & Leiter, 2017). Study 2 investigates relationships between different aspects of job satisfaction, understood as the subjective evaluation of own ideas or aims and the perceived work reality (Locke, 1969; Roedenbeck, 2008), in relation to all three burnout dimensions. Study 3 focuses on the consequences of burnout, develops and applies a novel experimental design, and explores the causal relationship of increased burnout symptoms on cognitive and affective empathy – relevant for preschool teachers' sensitivity toward children (Nentwig-Gesemann et al., 2011) and for adequate role model behavior (Denham et al., 2017). Finally, the fourth study investigates the understudied link between symptoms of emotional exhaustion and the frequency of language and early literacy related educational activities embedded into daily routines, an important aspect and domain of process quality in preschools.

The structure of the dissertation is as follows: The general theoretical background situates the four empirical studies of this dissertation in the relevant and up-to-date research landscape, including its research gaps. Chapter 2 starts with a brief overview of the dissertation's context by characterizing the German ECEC system. Subsequently, chapter 3 introduces the concept of burnout, including its research history and current conceptualizations as well as debates. Further, the origins of burnout, understood as the interplay between person and work environment, and the role of demands and resources are described in chapter 4. After outlining prominent theoretical models in the field, this chapter specifically focusses on the role of job conditions of preschool teachers as well as related

empirical findings and it discusses the role of different aspects of job satisfaction. Subsequently, chapter 5 elaborates on the consequences of job burnout. Models of preschool quality and required competences of preschool teachers are reviewed and connected with burnout research. The general theoretical background is completed by presenting the research agenda, including a heuristic research model, and by introducing the objectives of the four studies included in this dissertation (chapter 6). After the theoretical part, a short summary of the four empirical studies and their research insights are presented (chapters 7-10). The full study manuscripts are included in Appendices A-D. Finally, the general discussion first summarizes the overall findings, integrates them into the existing research literature, and elaborates on the added value for theory formation (chapter 11). Chapter 12 then reflects on limitations of the studies as well as future research ideas. The thesis is completed by discussing its implications for educational policy and practice (chapter 13).

2. Early childhood education and care in Germany

The present dissertation is embedded in the context of the German ECEC system. To facilitate the comprehension of the studies' backgrounds, obtained findings, and derived implications, this chapter provides a brief description of the political context, pedagogical approaches, and current developments of German preschools. This knowledge is also useful to assess the transferability of results and implications to other OECD countries, which partly differ in their ECEC systems (Organisation for Economic Co-operation and Development, 2020a), for example, in terms of job conditions, educational tracks, and tasks of preschool teachers.

The ECEC system in Germany follows the principle of subsidiarity and is therefore highly decentralized: each of the 16 federal states creates their own laws, conditions, and education plans based on very general national regulations. This leads to great heterogeneity regarding ECEC conditions within the country (Anders, 2015; Schreyer & Krause, 2016).

Early childhood education and care is assigned to the child and youth welfare system of the country and not to the educational system. As such, the general mandate of ECEC services is stipulated in the Social Code Book (VIII, §22 subsection 2, 1990) and comprises the support of children in developing autonomous and sociable personalities, the complementation of education in the family, and the assistance of families in balancing work and child-rearing.

As part of the child and youth welfare system, German preschools follow a socio-pedagogical tradition that focuses on children's holistic preparation for life with particular emphasis on socio-emotional development (Anders, 2015) and not (only) on educational outcomes (Jugend- & Kultusministerkonferenz, 2004; Organisation for Economic Co-operation and Development, 2016). In this sense, ECEC institutions are oriented toward child-centered pedagogical approaches (cfl. Siraj-Blatchford et al., 2002; Weikart, 2000) with a high value of unguided and free play (Anders, 2015). Many preschools in Germany are committed to a situation-oriented pedagogy that aligns educational work on topics, situations, and daily routines relevant for the life of children and their families (Neuhaus et al., 2018; Oertel, 1984) and not on teacher-set educational curricula customary in some other OECD countries and in higher educational contexts.

Preschool teachers' tasks particularly comprise the support of children's own explorations and offering a reliable, authentic, and caring relationship (Jugend- & Kultusministerkonferenz, 2004). Thereby, preschool teachers often care for children of different ages in the same group (Organisation for Economic Co-operation and Development, 2016), so that older children learn to take responsibility for younger ones and younger children can learn from older peers (Anders, 2015). All in all, the role of preschool teachers is much broader in scope as opposed to primary or secondary teachers who are more strongly considered as and restricted to be experts for learning and teaching (Kultusministerkonferenz, 2000). The majority of the ECEC workforce in Germany is

female (93.8%) and 70% graduated from a post-secondary vocational program (Autorengruppe Fachkräftebarometer, 2019), which is characterized by low specificity and broad fields of application (Jannsen, 2010). In contrast to teachers of higher school forms, only 6% of all preschool teachers hold a pertinent university degree (Autorengruppe Fachkräftebarometer, 2019).

In the past decades, there have been tremendous shifts in the German ECEC system. Triggered by the publication of the international comparative school achievement studies PISA (Programme for International Student Assessment) and the relatively poor performance of German students (cfl. Deutsches Pisa-Konsortium, 2001), the public and political debate began to realize the potential and importance of early education and a growing interest in ECEC-related research began to arise (Anders & Roßbach, 2013). As a response, legal entitlements to a place in a childcare setting were gradually extended to one year of age and also increasingly subsidized (Bock-Famulla et al., 2020). These changes resulted in the fact that, from 2008 to 2018, the number of children below three years attending an ECEC institution has more than doubled (Bock-Famulla et al., 2020). In addition to the quantitative expansion, qualitative development was also pushed ahead (Bock-Famulla et al., 2020). It included the professionalization of preschool teachers' job profiles, the expansion of learning fields, and the introduction of enhanced quality standards for ECEC services (Kluczniok & Roßbach, 2014; Organisation for Economic Co-operation and Development, 2015, 2017). Based on an agreement about basic principles of ECEC institutions in Germany established from the Conference of the Ministers of Education and Cultural Affairs (Jugend- & Kultusministerkonferenz, 2004), all federal states developed own curricular guidelines with defined learning areas (but no learning goals) that included a somewhat stronger focus on cognitive and preacademic skills than before (Anders, 2015). A particular emphasis was placed on the promotion of language and early literacy, but also on

parent collaboration, quality assurance/development, the transition to primary school, and documentation tasks (Viernickel & Schwarz, 2009).

Although the last two decades have brought many substantial changes in the field of early childhood education and care, initiated processes and developments have not yet come to an end. For example, the additional demand for preschool teachers resulting from the expansion has still not been covered (Schreyer & Krause, 2016) and many institutions suffer from staff shortages, leading to an increased workload for existing professionals (Bock-Famulla et al., 2020). Qualitative transformations as well as rising heterogeneity of families due to migration and changing family structures have led to new opportunities, but also challenges for preschool teachers. On the one hand, preschool teachers experience the improvement of their professional image and a more comprehensive task range. On the other hand, they may also be overwhelmed by the rising obligations, extended task profiles, and pedagogical demands, which often must be tackled without sufficient training (Blossfeld et al., 2012). For these reasons, it is particularly important not to lose sight of preschool teachers' experiences of job strain, which can be expressed by burnout symptoms.

3. The phenomenon of burnout

Burnout is an old phenomenon and has already been addressed in many writings of humankind throughout the last centuries (Burisch, 2014; Maslach & Leiter, 2017). However, unlike other psychological concepts, the concept of burnout was born from a grassroots approach and only slowly found its way into the academic world (Maslach & Leiter, 2017). The term burnout was popularized and entered the scientific community in the 1970s (Burisch, 2014), when Freudenberger (1974) investigated volunteers in the United States, working in free clinics for socially disadvantaged people, who had fallen into a cynic, disappointed, and depressed attitude toward work. Shortly thereafter, Maslach and colleagues noticed similar symptoms expressed by human service workers (Maslach, 1976;

Maslach et al., 2001; Schaufeli et al., 2009). In the 1980s, awareness grew that people outside of helping professions, such as white- and blue-collar workers, and outside the U.S. also suffered from burnout symptoms (Schaufeli et al., 2009). Nowadays, there is research on burnout in all kinds of occupational groups and all around the world (Schaufeli et al., 2009). Whereas the concept has first been captured in qualitative research, it was then also addressed in quantitative work and got integrated into psychological theories.

Existing definitions and conceptualizations of burnout, including its measurement, still differ (Burisch, 2014). However, the most elaborated definition of burnout stems from Schaufeli and Enzmann (1998) and describes burnout as a "persistent, negative, work-related state of mind […] characterized by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work" (p. 36). In this and related definition(s), three dimensions describing the burnout experience are at the center of attention, which have already arisen during the early, more exploratory and qualitative phases of burnout research (Maslach et al., 2001; Maslach, 2017; Maslach & Pines, 1977) and which also serve as the basis for this dissertation: emotional exhaustion, depersonalization, and reduced personal accomplishment. The exhaustion component is generally considered as the core dimension of burnout symptoms (Kristensen et al., 2005; Lee & Ashforth, 1996) and most widely reported and investigated (Maslach & Leiter, 2017). Some authors even argue that it is the only relevant dimension (Kristensen et al., 2005), fueling the discussion of whether the concept should be perceived as a multidimensional or unidimensional construct (Maslach & Leiter, 2017). Emotional exhaustion describes fatigue symptoms, debilitation, and a loss of energy (Maslach, 2017). Depersonalization, which later was also referred to as cynicism, pertains to (inter)personal relationships with people involved in the job or to the job itself; it finds its expression in negative and detached attitudes toward job aspects or clients, for example

through dehumanized statements (Maslach et al., 2001) or reclusive behavior (Maslach, 2017). The third dimension, reduced personal accomplishment, describes a subjectively experienced personal inefficacy or less productivity at work (Maslach et al., 2001; Maslach, 2017).

All three dimensions of burnout are also part of the most widely applied instrument for measuring burnout symptoms, which was already developed in the early stages of burnout research and underwent extensive psychometric research over the years (Maslach et al., 1996; Maslach et al., 2018; Maslach & Leiter, 2017): the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981). Meanwhile, it has been adapted to different professional groups (see Maslach et al., 2018) and translated into several languages, including German (Büssing & Perrar, 1992), French (Dion & Tessier, 1994), and Italian (Pisanti et al., 2013). The MBI is a questionnaire based on self-reports and assesses the subjectively perceived level of complaints (Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde, 2012). Even though there have been attempts to determine clinical cut-off values (see Maslach & Leiter, 2017), in the end they did not meet the requirements for diagnostic criteria and thus the determination of a burnout is still at the doctor's discretion (Blossfeld et al., 2014; Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde, 2012).

The identification and investigation of burnout among preschool teachers has long been part of burnout research and generally indicates that preschool teachers seem to be particularly susceptible to burnout symptoms (e.g., Blöchliger & Bauer, 2017; Decker et al., 2002; Goelman & Guo, 1998; Koch, P. et al., 2015; Manlove, 1993; Maslach & Pines, 1977; Pines & Maslach, 1980; Viernickel et al., 2013). Because definitions and measurements for burnout differ widely (Burisch, 2014), studies often use self-reports, and data collection is not always carried out according to scientific criteria (Deutsche Gesellschaft für Psychiatrie,

Psychotherapie und Nervenheilkunde, 2012), the interpretation and comparison of prevalence rates must be treated with caution, if there are any at all. The following two studies provide at least some insight into prevalence rates for Germany: In a large national and representative study across professions, 1.5% of the respondents reported that a doctor had determined a burnout syndrome with them in the last 12 months (Maske et al., 2016). Women showed significantly higher prevalence rates than men (12-month prevalence: 1.9% for women versus 1.1% for men) and highest prevalence rates were found in women aged 30-59 and men aged 40-59 (Maske et al., 2016). In contrast, reports of preschool teachers and managers (97.2% women) in a study conducted in North Rhine-Westphalia revealed that a doctor had determined a burnout in 9.0% of preschool teachers and 13.7% of preschool managers in the past 12 months (Viernickel et al., 2013).

3.1 The clinical perspective

From a clinical point of view, burnout is not considered a mental disorder, but a mental state that can cause mental dysfunction (Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde, 2012; Maslach & Leiter, 2017). Figure 1 displays the corresponding conceptualization of the German Society for Psychiatry, Psychotherapy, and Neurology (Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde, 2012). It illustrates how stress and exhaustion symptoms, triggered by individual and workplace conditions, may eventually lead to a fully pronounced burnout syndrome. Without regeneration, burnout constitutes a risk for the development of consequential mental and even somatic diseases (e.g., depression or anxiety, tinnitus or hypertension). On the other hand, pre-existing somatic and mental disorders can also enhance burnout symptoms, as these diseases further restrict opportunities for the individual to cope with strenuous conditions.

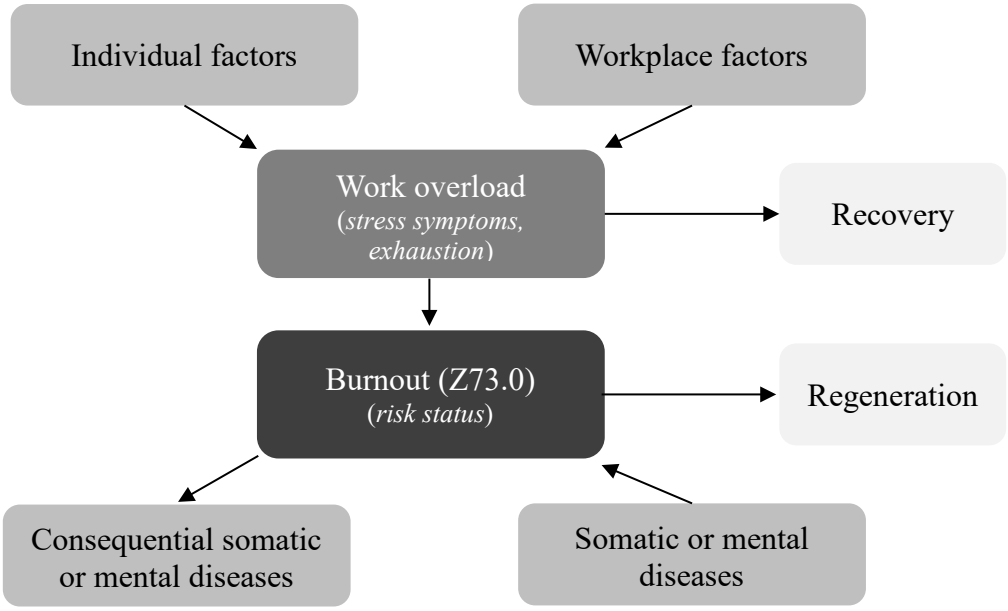

Figure 1. Conceptualization for the transition from individual and workplace factors to burnout and further diseases (Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde, 2012).

Workers affected by exhaustion or light burnout symptoms are often still part of the workforce and only drop out later when they experience ongoing and fully pronounced burnout symptoms or consequential diseases. Therefore, it is important to conduct research on affected persons who are still in the workforce.

Some researchers particularly question the distinction between burnout and depression, highlight the statistical overlap of or reciprocal relationships between the two constructs (Ahola & Hakanen, 2007), and argue that at least the end-stage of burnout is identical to clinical depression (e.g., Bianchi et al., 2015). However, depression is defined somewhat differently than burnout, namely primarily by subdued mood and a lack of interest (American Psychiatric Association, 2013). Further, unlike all other mental disorders, the definition of burnout directly references to the etiology of the symptomatology (Koch, S. et al., 2015): while burnout is understood to be context-dependent and a mental state specific to and resulting from the work context (Maslach et al., 2001), depression is conceptualized as

context-independent, referring to all areas of life, as was also shown by empirical work from Bakker et al. (2000). However, there are also researchers who understand burnout in a more context-free way (e.g., in the Copenhagen Burnout Inventory; Kristensen et al., 2005). Therefore, the link between burnout and depression is not yet conclusively clarified and also depends on the exact definition of burnout.

There is an ongoing debate as to whether burnout should be embedded more clearly into the existing diagnostic manuals. At present, the latest Diagnostic and Statistical Manual of Mental Disorders (DSM-V) does not include burnout as a codable diagnosis (American Psychiatric Association, 2013). The current International Classification of Diseases (ICD-10) of the World Health Organization mentions "burn-out" as a *factor influencing the health status and contact with health services* (chapter XXI) and codes it with Z73.0 under *problems related to life-management difficulty* (Z73) (World Health Organization, 2019). The ICD-11, which will apply from 2022 on onwards, takes it one step further and defines burnout as an employment-associated syndrome and in a more detailed way: it attributes its roots to chronic and poorly processed stress in occupational contexts and it includes all three dimensions, namely aspects of exhaustion, depersonalization and reduced professional accomplishment (World Health Organization, 2019, May 28). However, it remains in the same category as in the ICD-10. Whereas some people might respond with relief that burnout will become more elaborated and therefore established in the diagnostic manual, some researchers also question the attempt to integrate burnout into the psychotherapeutic track. For example, Maslach (2017) criticizes the accompanying tendency toward fixing the individual instead of changing the workplace. In her opinion, focusing on the individual instead of the work environment facilitates the stigmatization of affected individuals (Maslach, 2017), thus constituting an additional burden. This issue is closely related to the question of what causes burnout.

4. Understanding the origins of burnout symptoms

Over the years, many different theories and models have been put forward to explain the development of burnout (symptoms). They either focused more on the individual or on the external working environment, depending on the theoretical perspective of researchers (Maslach & Leiter, 2017). Early burnout models mainly concentrated on the sequence of stages or phases of burnout (Maslach & Leiter, 2017), but they often remained superficial and received only limited empirical evidence (Blossfeld et al., 2014). More recently, theories from the general stress literature and the field of industrial and organizational psychology have been taken into consideration for explaining the emergence of burnout symptoms and partly also their consequences (Maslach & Leiter, 2017). Therefore, the next section focuses on these types of models, which facilitates the understanding of the dissertation's theoretical embedding and empirical findings (for a broader overview, see also Burisch, 2014; Maslach & Leiter, 2017). In line with the focus of this dissertation, the section after proceeds with describing personal and environmental job conditions of preschool teachers and existing empirical research on how they relate to burnout symptoms. Moreover, the role of different aspects of job satisfaction is discussed and existing gaps in the research literature concerning the origins of burnout symptoms in preschool teachers are outlined.

4.1 Theoretical burnout models

A prominent approach from the stress literature specifically considers the fit or misfit between person and environment and its effect on people's well-being, attitudes, and behaviors (Edwards et al., 1998). This approach is also the foundation for the *Areas of Worklife* (AW) model that was developed by the founders of modern burnout research (Leiter & Maslach, 2004; Maslach et al., 2001; Maslach & Leiter, 1997). Accordingly, workers experience burnout symptoms when individual and workplace factors are in persistent disagreement. The model assumes that burnout mediates the relationship between work

stressors and personal outcomes, such as performance or health (Maslach & Leiter, 2017). Six key areas in which a misfit can occur are proposed (Maslach & Leiter, 2017): they comprise too much quantitative or qualitative job demands (*workload*), too little opportunity to exercise power or control to complete a task well (*control*), a perceived lack of financial, social, or intrinsic gratification (*reward*), a lost connection to colleagues or unresolved conflicts (*community*), perceived injustice in the case of unequal salaries, workloads, or evaluations (*fairness*), and conflicts between one's own values and the values or functioning of the organization (*values*) (Maslach et al., 2001). The greater the misfit, the greater the chance to burn out (Maslach & Leiter, 2017). Whereas this model particularly emphasizes imbalances between the person and the job environment, others focus more on imbalances between demands and resources for the development of burnout symptoms (Demerouti et al., 2001; Hobfoll et al., 2018; Hobfoll & Freedy, 1993; Maslach & Leiter, 2017; Schaufeli & Bakker, 2004).

The *Conservation of Resources* (COR) model (Hobfoll & Freedy, 1993) highlights people's motivation to prevent losses of personal, social, or material resources. In this framework, the (imminent) loss of a resource or the failure to obtain resources despite investment is conceptualized as stress or demand (Alarcon, 2011; Hobfoll et al., 2018). The fewer resources an individual has available and the more demands he or she perceives, the worse an individual can handle the situation and the more likely burnout experiences are to occur (Alarcon, 2011). Because resources are considered to be interrelated, meaning the loss of one type of resource also affects the availability of other resources (Hobfoll & Schumm, 2002), and because of people's bias to overestimate resource losses and underestimate resource gains, a downward or loss spiral occurs once an individual (or organization) experiences resource lacks (Hobfoll et al., 2018). As a consequence, people fall into defensive, sometimes even aggressive and irrational states of self-preservation (Hobfoll et

al., 2018). Because upward spirals – meaning the (re)gain of resources – tend to be much slower and weaker processes (Hobfoll et al., 2018), it is relatively difficult and tedious to find a way out of the loss spiral and the associated burnout symptoms.

The COR model is a widely applicable and rather individual-centered theory of stress experiences. Another model emphasizing imbalances between demands and resources for the experience of job strain, including burnout, comes from the field of industrial and organizational psychology and puts a somewhat stronger focus on the job environment, namely the *Job Demands-Resources* (JD-R) model (Demerouti et al., 2001). In this framework, job demands describe physical, social, or organizational job characteristics, which are strenuous or costly for the individual worker (Demerouti et al., 2001). Job resources, on the other hand, refer to all kinds of work facets that are either effective in achieving goals, reduce or buffer demands, or promote personal growth (Demerouti et al., 2001; Demerouti & Bakker, 2011). They can comprise organizational, interpersonal, position-, or task-related aspects (Demerouti & Bakker, 2011). Workers experience burnout if there are too many demands and too little resources to deal with them; this, in turn, results in negative outcomes for the individual (e.g., diseases) and organization (e.g., inefficiency) (Schaufeli, 2017). Furthermore, job resources have the potential to initiate or foster motivational processes that lead to higher work engagement – the positive counterpart of burnout –, resulting in positive outcomes, such as stronger work commitment or higher work performance (Schaufeli, 2017). Figure 2 displays the JD-R model.

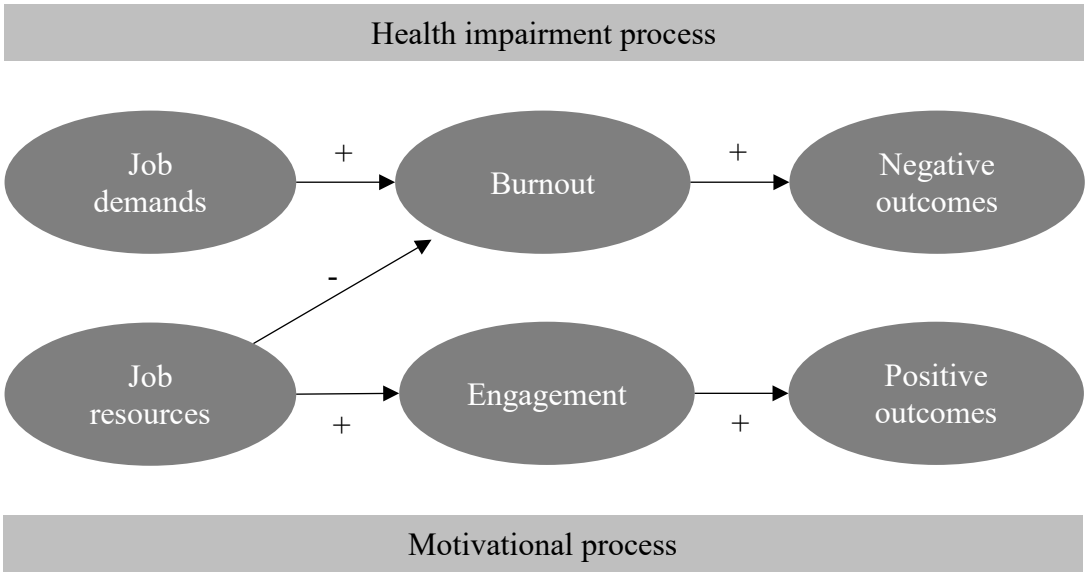

Figure 2. Job Demands-Resources model of burnout (cfl. Demerouti et al., 2001; Schaufeli, 2017).

Xanthopoulou et al. (2007) expanded the model by additionally incorporating more individual resources, such as optimism or self-efficacy. Their findings suggested that personal resources did not compensate the relation between job demands and exhaustion, but that they mediated the association between job resources and exhaustion and between job resources and engagement.

Demands and resources can vary greatly across job profiles and need to be adapted to the respective job context (Maslach et al., 2001), which is possible and intended in the JD-R model. However, in practice it can be challenging to apply this dichotomous system and identify concrete demands and resources that are applicable for everyone within a professional group (Schaufeli & Taris, 2014; van Veldhoven et al., 2020). Some might consider a condition as a burden (e.g., complex work tasks), whereas others perceive it as positive challenge or even resource. Further, a job condition (e.g., teamwork) may constitute a demand (e.g., when conflicts arise) or resource (e.g., to solve tasks/problems cooperatively), depending on the nature of the condition.

Taken together, the burnout models presented emphasize the role of personal and work environmental factors for the development of burnout symptoms. Burnout symptoms occur if there are too many demands and not enough resources to cope with them. The role of particular job conditions should be investigated in a profession-specific way.

4.2 ECEC job conditions in relation to burnout symptoms

The present dissertation focusses on the profession of preschool teachers and their job conditions, which will now be considered in more detail. Whereas the general working context of preschool teachers in Germany has already been described in chapter 2, this section outlines differential personal and environmental conditions of preschool teachers and preschool centers and their role for the development of burnout symptoms. Personal conditions are individual prerequisites and qualifications (e.g., preschool teachers' educational level, training, or working experience) as well as individual workloads (e.g., working hours or responsibilities on the job), that often depend on an individual's career and educational decisions. In contrast, environmental job conditions concern structural and social features of the individual or shared workplace. For example, the structural ECEC work environment of preschool teachers can differ in terms of personnel conditions (e.g., teacher-child ratio), children's characteristics (e.g., number, age, sociodemographic background), and organizational structures (e.g., frequency of team meetings, support of training). In contrast, social conditions of the workplace describe the social climate or aspects of collaboration and refer to interactions with (groups of) people involved in the job. In the preschool context, teachers do not only interact with children and center managers, but also with colleagues and parents. Whereas colleagues or team members are working partners at eye levels, the relationship to parents is rather unequal, as they are service recipients and interactions with them constitute a core task of preschool teachers (Jugend- & Kultusministerkonferenz, 2004). The outlined job conditions largely correspond to aspects of

structural (and team) quality in commonly applied structure-process models of ECEC quality, outlined in chapter 5.1, except for the interaction with parents, which constitutes a distinct quality dimension (see Kluczniok & Roßbach, 2014).

There is a substantial amount of respective research on the role of job conditions on burnout symptoms in teaching personnel at higher school levels (for extended overviews, see Blossfeld et al., 2014; Rothland, 2007; Schaarschmidt, 2004; van Dick, 1999). But because the work profile and conditions of preschool teachers differ from those of teachers at higher school forms (e.g., their role and education or group sizes; see also chapter 2), the findings from higher school forms cannot and should not be directly transferred to the ECEC context. Empirical research on job conditions and burnout symptoms in the field of ECEC is relatively scarce (cfl. Blossfeld et al., 2014). However, existing investigations suggest that both personal and environmental job conditions play a role for preschool teachers' experienced job strain (e.g., Blöchliger & Bauer, 2016; Jungbauer & Ehlen, 2015; Viernickel et al., 2013). For instance, research indicates that more education and (ongoing) training (Manlove, 1993; Viernickel et al., 2013) are associated with less job stress or burnout levels, whereas mixed results have been revealed for working experience or age (Blöchliger & Bauer, 2017; Manlove, 1993; Viernickel et al., 2013). Concerning structural characteristics, Jungbauer and Ehlen (2015) identified inadequate staffing, large group sizes, low teacher-child ratios, time pressure, and having a variety of synchronous tasks as job stressors. Another study showed that having defined times to prepare and follow up on one's work was perceived as a resource by preschool teachers (Blöchliger & Bauer, 2016). Concerning social conditions, a good team climate – meaning regular exchange, cooperation, appreciation, and cohesion within the team – was shown to be an important resource for preschool teachers in order to maintain their work ability (Viernickel et al., 2013). Further, the relation to parents was found to be a potential strain for preschool teachers (Jungbauer & Ehlen, 2015).

The existing empirical research in the ECEC context have several limitations concerning their methodology and content: They often comprise only regional, instead of larger national samples (e.g., Blöchliger & Bauer, 2017; Viernickel et al., 2013) or examine more general constructs, such as stress or the general ability to work instead of burnout symptoms in particular (e.g., Berger et al., 2002; Schreyer et al., 2015; Schreyer & Krause, 2016; Viernickel et al., 2013). Further, hardly any study compared a wide range of different job conditions in relation to burnout symptoms to understand the importance of certain job conditions over others. Finally, there is a lack of studies applying multilevel analysis, a tool that considers the affiliation of multiple preschool teachers belonging to the same center. However, there is growing recognition for a shared element of burnout experiences within institutions (Blöchliger & Bauer, 2017; Friedman, 1991; Halbesleben & Leon, 2014), either due to shared job conditions within institutions (Klusmann et al., 2008a) or due to mutual contagion through conversations about work-related problems (Bakker & Schaufeli, 2000). By disentangling center- from individual-level effects, multilevel analysis can help to clarify if there is a shared element within preschool centers. The resulting knowledge is necessary, for example, to evaluate the importance of interventions on the level of individual preschools, as compared to interventions tackling individual preschool teachers. Up to now, only one Swiss study addressed this lack of research in the ECEC sector and found a medium effect of the center level, meaning that burnout symptoms also differed between centers, not just between individuals (Blöchliger & Bauer, 2017). However, the study used a small and highly local sample in Switzerland, limiting the generalizability of its conclusions. In contrast, a study conducted in German secondary schools did not find a shared element of burnout symptoms (Klusmann et al., 2008a). For the analysis of the relation between certain job conditions in relation to burnout symptoms, it is also helpful to take a closer look at the concept of job satisfaction.

4.2.1 The role of job satisfaction for the assessment of burnout causes

Job satisfaction is a pleasant affective state emerging from a positive evaluation of the perceived work situation in relation to one's own values and aspirations (Locke, 1969; Roedenbeck, 2008). It can be understood as a subjectively perceived person-environment fit, especially when multiple aspects of job satisfaction are considered. For example, Roedenbeck (2008) differentiated between interpersonal or social aspects of job satisfaction, cognitive-intellectual aspects (e.g., demands, opportunities for development, and meaningfulness of work), and instrumental-material aspects (e.g., work structures, but also the work tasks in itself). Empirically, the correlation between low levels of general job satisfaction and increased burnout symptoms is clearly documented (e.g., Lee & Ashforth, 1996; Tsigilis et al., 2004) and both are considered as part of people's occupational well-being (Klusmann et al., 2008b). However, only few studies specifically explore the relationship between different aspects of job satisfaction and all three burnout dimensions (exceptions are Penn et al., 1988; Pikó & Mihálka, 2017). No study has ever investigated these associations for the specifics of the work context of preschool teachers.

Studying the origins of job conditions related to burnout symptoms has the potential to inform theories, future investigations, and the development of effective interventions. However, to be able to evaluate the significance of preschool teachers' burnout symptoms for theory and practice, it is also important to understand the consequences of burnout symptoms.

5. Consequences of burnout symptoms – pitfall for the quality of care?

The Job Demands-Resources model suggests that individuals with increased burnout symptoms are also less motivated and less engaged and that the consequences of burnout symptoms are a variety of negative outcomes for the individual and for the work environment (cfl. chapter 4.1; Schaufeli, 2017). This has also been confirmed by a large

body of empirical research across professions (for an overview see Maslach & Leiter, 2017; Schaufeli & Enzmann, 1998). For example, individuals with increased burnout symptoms show poor physical and mental health conditions (Burke et al., 1996; Salvagioni et al., 2017), as already discussed in chapter 3. Furthermore, they experience cognitive constraints (e.g., Feuerhahn et al., 2013), negative mood (e.g., Zellars et al., 2004), and negative spill-over effects for their private lives (e.g., Burke & Greenglass, 2001). For the work context, it has been demonstrated that burnout symptoms constrain job performance (Maslach & Leiter, 2017; Swider & Zimmerman, 2010; Wright & Bonett, 1997) and increase job withdrawal behavior (Maslach & Leiter, 2017). For example, higher burnout levels in nurses were shown to be associated with lower self- and supervisor-rated job performance (Parker & Kulik, 1995), lower patient satisfaction (Vahey et al., 2004), and even higher patient mortality (Aiken et al., 2002). Further, burnout symptoms were shown to be related to higher turnover rates or intentions to leave, absenteeism, and sick leaves (Aiken et al., 2002; Carson et al., 2010; McMullen et al., 2020; Parker & Kulik, 1995; Swider & Zimmerman, 2010).

The outlined consequences are also particularly relevant for ECEC institutions because they are already struggling with staff shortages, days of absence, and rising demands for the remaining personnel (Autorengruppe Bildungsberichterstattung, 2018; Organisation for Economic Co-operation and Development, 2017; Schreyer & Krause, 2016; Viernickel & Fuchs-Rechlin, 2015). Furthermore, it is known that good quality of care requires consistent caregivers (Choi et al., 2019; Howes & Hamilton, 1993; Ruprecht et al., 2016) and good mental health of preschool teachers (Cumming, 2017; Jeon et al., 2014; Kwon et al., 2019; Sandilos et al., 2015). However, although the quality of care and the role of the individual preschool teacher have increasingly become the focus of policy and academic debates (e.g., Melhuish et al., 2015; Organisation for Economic Co-operation and Development, 2020a; Sammons et al., 2008; Sylva et al., 2011), up to now there is only little empirical research on

the impact of preschool teachers with elevated symptoms of burnout on the quality of early childhood education and care. The present dissertation tackles this lack of research. Therefore, the next sections focus on models of high-quality care and preschool teacher competences and discuss the relation to burnout symptoms.

5.1 Quality of care in early childhood education and care

Preschool quality is most commonly captured in structure-process models that mainly differentiate between structural characteristics (structural quality), educational beliefs (orientation quality), and educational processes (process quality) to predict child outcomes (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Roux & Tietze, 2007; Slot, 2018). Following the increased focus on collaborating with families in ECEC settings to include and promote children's life circumstances in a more holistic way (Organisation for Economic Co-operation and Development, 2017), recent versions of the model also include networking with families as a separate quality dimension, placed next to process quality (see for example Kluczniok & Roßbach, 2014). Figure 3 depicts the structure-process model.

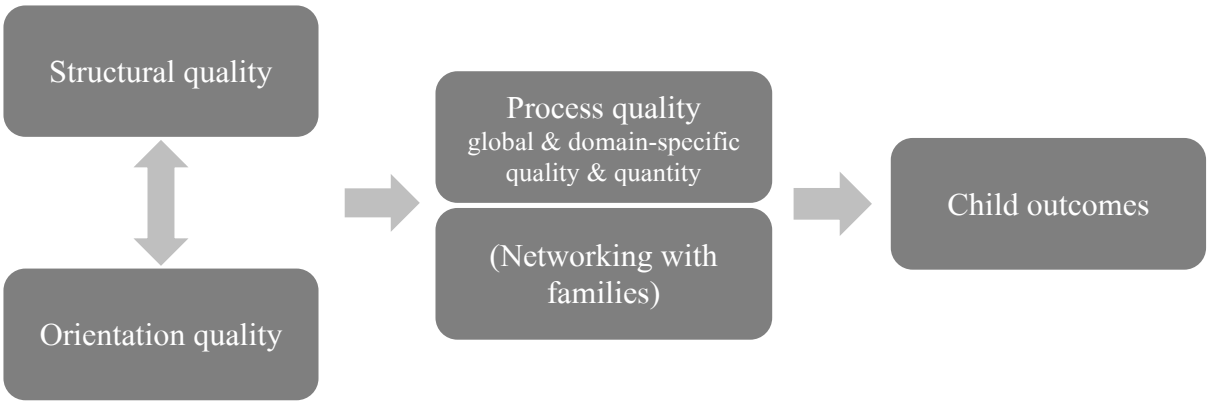

Figure 3. Simplified structure-process model of ECEC quality (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Roux & Tietze, 2007; Slot, 2018).

Structural quality refers to staff characteristics, social compositions of groups and centers, as well as spatial and material conditions (Anders et al., 2016; Tietze et al., 2013).

The aspects of this dimension are mostly equivalent with the outlined personal and structural job conditions in chapter 4 (except for the relation to parents). Some researchers also differentiate between structural quality and organizational/management quality, including team climate as a social job condition (e.g., Becker-Stoll & Wertfein, 2013; Viernickel et al., 2013). The regulation of the structural quality occurs through policy and funding strategies (Anders et al., 2016). Orientation quality refers to educational beliefs, consisting of the preschool teachers' and centers' attitudes, pedagogical approaches, and values associated with their practices of teaching (Anders et al., 2016; Kluczniok & Roßbach, 2014). This includes, for example, how preschool teachers perceive their professional role or the importance of specific educational fields (Anders et al., 2016).

Structural characteristics and educational beliefs set the frame for educational processes taking place in ECEC settings (Kluczniok & Roßbach, 2014; Slot, 2018), also referred to as process quality. These include all educational processes taking place, meaning all kinds of interactions between the preschool teacher and child, between peers, and between children and their environment (Anders et al., 2016; Kluczniok & Roßbach, 2014; Pianta et al., 2005). Process quality is further distinguished into global and domain-specific processes (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Ulferts & Anders, 2016). Global processes describe the general social climate and age-appropriate care in ECEC settings (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Ulferts & Anders, 2016). Domain-specific processes aim at stimulating specific learning areas, for example, language, early literacy, math, and science skills (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Ulferts & Anders, 2016). Furthermore, researchers focus both on the quality and quantity of educational processes (Anders, Grosse et al., 2013; Burchinal et al., 2008; Hamre & Pianta, 2004; Tietze et al., 2013; Ulferts & Anders, 2016), including the frequency of educational activities (e.g., Barenthien et al., 2019; La Paro et al., 2009). The latter depicts learning opportunities for

children to acquire particular skills or content knowledge and can be prepared in advance or conducted in suitable situations in the daily preschool routine. As compared to structural characteristics and beliefs, the quality of educational processes is most directly connected to positive child development (Kluczniok & Roßbach, 2014; Ulferts & Anders, 2016), including socio-emotional, but also cognitive outcomes (Anders, 2013), such as language, literacy, and math skills (Ulferts et al., 2019). The domain of language and early literacy takes on a particularly important role in the preschool context because it is strongly linked to cognitive performance and academic outcomes later in life (Lonigan et al., 2011; National Institute of Child Health and Human Development Early Child Care Research Network, 2000; Sammons et al., 2008). As such, it is defined as key area of ECEC curricula in the OECD countries (Organisation for Economic Co-operation and Development, 2017) and firmly anchored in the federal ECEC education plans in Germany (Viernickel & Schwarz, 2009).

In general, structure-process models put a relatively strong focus on structures and materials, in particular compared to quality models of higher school forms (e.g., Baumert et al., 2001; Helmke et al., 2007). This is because educational processes in preschools are usually less teacher-directed than in higher school forms and existing structures and materials determine learning opportunities in a stronger manner. Nevertheless, preschool teachers' professional functioning and behavior still play a significant role for the quality of educational processes.

5.2 The role of the individual preschool teacher

When it comes to the role of preschool teachers, structure-process models mainly refer to their educational beliefs (orientation quality) and professional qualifications (structural quality). However, professional competence models provide a more detailed view on necessary characteristics of preschool teachers for high-quality educational processes and

add important requirements (for an overview, see Anders, 2012). For example, the competence model of Fröhlich-Gildhoff and colleagues (Fröhlich-Gildhoff et al., 2011; Fröhlich-Gildhoff et al., 2014) predicts preschool teachers' (willingness for, planning of, and implementation of) professional practices from their theoretical and experiential knowledge, perception and analysis of situations, motivation, methodological and social competencies (e.g., empathy), and attitude (see also Figure 4).

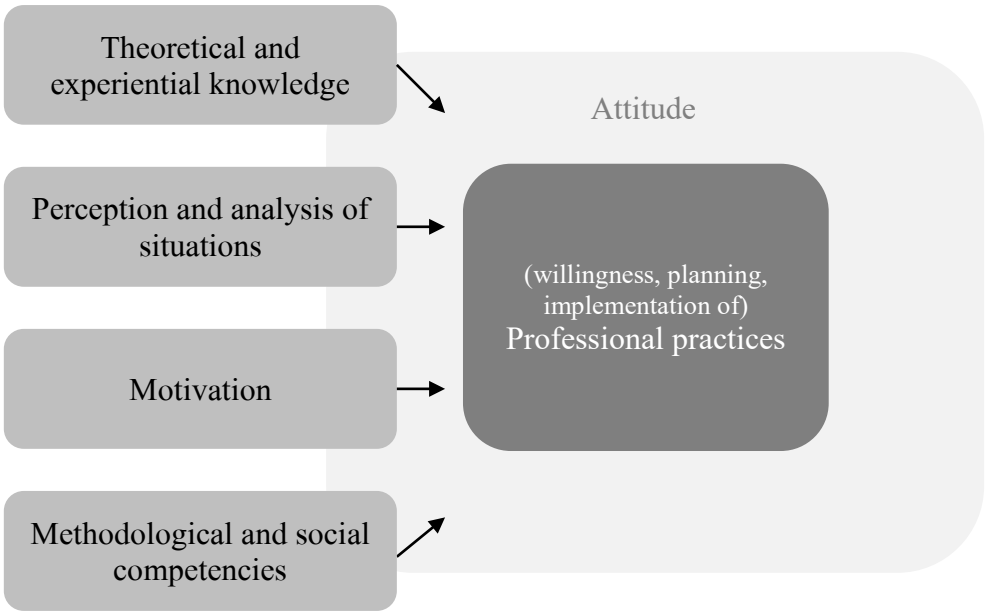

Figure 4. Required preschool teacher competences according to Fröhlich-Gildhoff et al. (2014).

Other than for some teacher models of higher school forms (e.g., Jennings & Greenberg, 2009; Klusmann et al., 2008b; Maslach & Leiter, 1999), burnout symptoms are not directly included in models describing preschool teacher competences (cfl. Anders, 2012). However, in light of the outlined empirical findings suggesting cognitive and emotional constraints with elevated burnout symptoms (Feuerhahn et al., 2013; Zellars et al., 2004), and with regard to the reviewed models of burnout, predicting a strong self-focused state (see COR theory; Hobfoll et al., 2018) and motivational decline (see JD-R model; Schaufeli, 2017), several influences of preschool teachers' burnout symptoms on their

professional and required competences can be derived. For example, affected preschool teachers may retrieve less knowledge and be less focused on children and their needs. Further, the attention toward, reflection on, and motivation to use adequate learning opportunities might be impaired. This may be especially relevant for situation-oriented pedagogical approaches that require high attention, spontaneity, and flexibility on the side of the preschool teacher.

Empirical investigations focusing on preschool teachers' burnout symptoms and their consequences for the quality of educational processes remain scarce. An exception is a study by Jennings (2015) who found negative relationships between preschool teachers' exhaustion levels and their emotional and instructional support in the classroom, and between depersonalization symptoms and their emotional support. Studies on other facets of well-being that are less work-related, such as depression, are more pronounced and also demonstrate negative effects (e.g., Gerber et al., 2007; Hamre & Pianta, 2004; Jeon et al., 2014). However, most of these investigations focus on teacher sensitivity or global ratings of process quality, neglecting the link to domain-specific aspects of process quality, such as language and literacy related educational activities. What has also not been clarified empirically is the relationship between burnout symptoms and empathy, an important social competence required from preschool teachers (Fröhlich-Gildhoff et al., 2014).

5.2.1 Empathy and burnout symptoms

Empathy facilitates the comprehension of and adequate response to others and is thus an important prerequisite for effective social interactions (Baron-Cohen & Wheelwright, 2004). It consists of a cognitive and an affective part: the cognitive part describes the ability to decode and understand others' perspective and emotional state; the affective part means to emotionally resonate to someone's feelings and situation (Dziobek et al., 2008). In the ECEC context, empathy enables preschool teachers to react sensitively to children (Nentwig-

Gesemann et al., 2011), to be considerate of children's perspectives, and thus to contribute to a positive emotional climate in the classroom and to a high quality of teacher-child relationships (Hamre & Pianta, 2010), both important parts of global process quality (Kluczniok & Roßbach, 2014; Ladd et al., 1999). Further, preschool teachers' empathic skills and respective role model behavior encourage children's own socio-emotional learning (Denham et al., 2017), which is linked to other important long-term outcomes, such as better mental health and academic performance (Denham et al., 2009; Garner, 2010; Kanning, 2002).

Whereas with empathy the focus is on the other person (Eisenberg & Miller, 1987), individuals with burnout symptoms are absorbed with their own resource losses (Buchwald & Hobfoll, 2004). Along with the perceived lack of energy, possibly resulting in a lack of investment, individuals with burnout symptoms also feel distanced from service recipients (e.g., children) and treat them as "impersonal objects" (Maslach et al., 2001, p. 403). Therefore, a negative influence of burnout symptoms on the ability to empathize is likely to occur. Up to now, research has treated empathy only as protective factor against burnout symptoms (Wilkinson et al., 2017). However, the causal effect of burnout symptoms on empathy has never been tested empirically, also due to the lack of ethically applicable experimental designs.

6. Objectives of the present dissertation

The previous chapters introduced the dissertation's background and provided an overview of the research literature on burnout, including its causes and consequences, with a focus on ECEC settings. This final chapter of the general theoretical background describes the objectives of this dissertation, including its research questions, on the basis of the research gaps identified in the previous chapters. The dissertation's objectives are being

framed within a more general research model developed on the basis of the structure-process model (Kluczniok & Roßbach, 2014).

In the theoretical review the interplay between personal and environmental job resources and demands and their relation to burnout symptoms was highlighted. Special attention was given to profession-specific job conditions. It was concluded that, in contrast to the school context, the role of job conditions has not been sufficiently investigated in the preschool context, in particular not in large-scale studies comparing different job conditions on the individual and preschool level. Additionally, job satisfaction was introduced as an important indicator for the fit between one's own expectations and the perceived work context, which can provide further indications for the causes of burnout symptoms. Yet, no study to date has explored the relation between different aspects of job satisfaction and preschool teachers' burnout symptoms.

The present dissertation fills these research gaps by tackling the following research questions in studies 1 and 2:

1. To what extent do symptoms of emotional exhaustion differ between preschool centers? How are personal, structural, and social job conditions related to symptoms of emotional exhaustion in preschool teachers?
2. How are social, cognitive-intellectual, and instrumental-material facets of job satisfaction related to emotional exhaustion, depersonalization, and reduced personal accomplishment?

In addition, previous research has identified many negative consequences of burnout for both the individual and organizations (e.g., absenteeism), which are also highly relevant for the field of ECEC. In the theoretical background, special emphasis was given to the (potential) impact of burnout symptoms on quality of care, including preschool teachers' competences (e.g., knowledge, motivation, empathy) and global as well as domain-specific

educational processes. It was concluded that the influence of work-related burnout symptoms is still neglected in theoretical models and empirical research. In particular, the effects of burnout symptoms on empathy, including applicable experimental methods, and the association of burnout symptoms with the frequency of domain-specific professional practices of preschool teachers have not been sufficiently addressed in the literature so far.

As a response, the present dissertation additionally tackles the following research questions in studies 3 and 4:

3. Can participants' burnout symptoms be experimentally manipulated using an autobiographical memory task? If yes, does the experimental group with increased burnout symptoms show decreased cognitive and affective empathy compared to control groups?
4. How are symptoms of emotional exhaustion in preschool teachers related to the frequency of language and early literacy related educational activities embedded into daily routines?

The research questions are investigated using three different data sets: Studies 1 and 4 draw on national data from the evaluation study of the German federal program *Sprach-Kitas: Weil Sprache der Schlüssel zur Welt ist* [English: Language day care centers: Because language is the key to the world][2], collected in 2017 and 2018. Study 2 used data from a self-collected survey of preschool teachers in Berlin from 2019. Finally, for the experimental study 3, participants located in the United States were recruited via Amazon.com's

[2] Funded by the German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, the project is under the lead of the Free University of Berlin and the University of Bamberg. It aims at increasing preschool quality with a focus on language education, inclusive pedagogy, and collaboration with parents.

Mechanical Turk (MTurk), resulting in a heterogeneous sample consisting of participants from different professions.

Figure 5 illustrates the objectives of this dissertation and frames them in a research model. The dissertation's research model is based on the structure-process model of preschool quality (cfl. chapter 5.2; e.g., Kluczniok & Roßbach, 2014) and extends and modifies it in the following ways: The structural quality dimension is represented by preschool teachers' job conditions and differentiates between personal and (structural or social) environmental job conditions, perceived as demands or resources (cfl. chapter 4; e.g., Leiter & Maslach, 2004; Schaufeli, 2017). Since interactions with parents are also treated as a social job condition of preschool teachers in the framework of this dissertation and not only as quality outcome resulting from structural characteristics and educational beliefs (see Kluczniok & Roßbach, 2014), they are not listed separately in Figure 5. Furthermore, the quality dimension considering preschool teachers' educational beliefs has been expanded with other important preschool teacher competencies, such as knowledge, motivation, and empathy (cfl. chapter 5.2; Fröhlich-Gildhoff et al., 2014). Similar to Klusmann et al.'s (2008b) research model, burnout symptoms are inserted as a new and central concept, placed between job conditions and preschool teachers' competences. Job satisfaction, a negative correlate to burnout and further indicator of occupational well-being, is listed below burnout symptoms and in brackets. According to the structure-process model (e.g., Kluczniok & Roßbach, 2014; Pianta et al., 2005; Roux & Tietze, 2007), process quality compromises the quality and quantity of global and domain-specific educational processes, which in turn influence child outcomes. All aspects of this model investigated in studies 1 to 4 of this dissertational project are printed in bold letters.

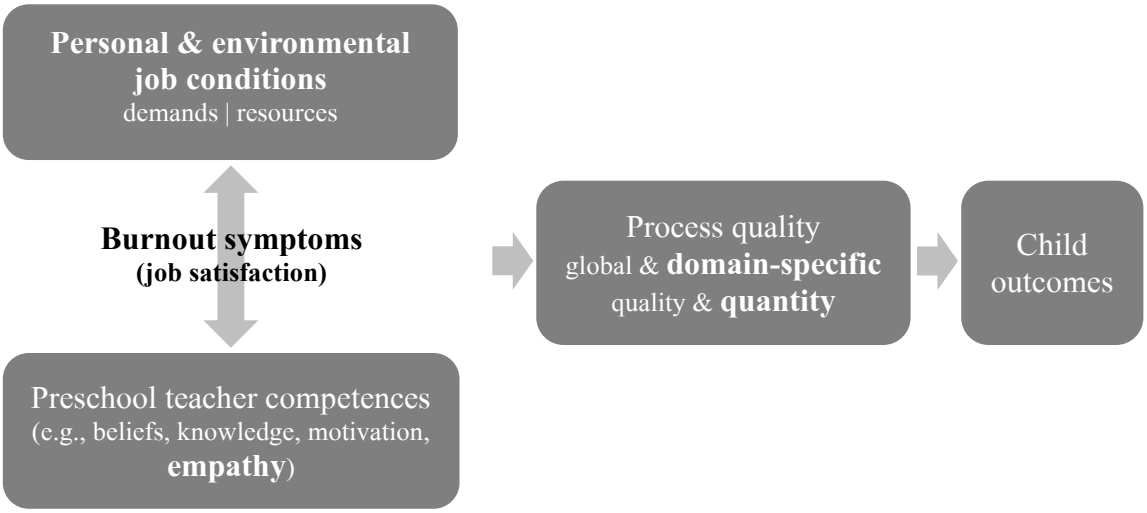

Figure 5. Heuristic working model of preschool teachers' burnout symptoms in relation to job conditions, competences, educational processes, and child outcomes. The model is based on the structure-process models of preschool quality (e.g., Kluczniok & Roßbach, 2014; Pianta et al., 2005; Roux & Tietze, 2007). Research focuses are highlighted in bold.

SUMMARY OF THE FOUR STUDIES

Four studies were conducted to address the research questions listed above (see chapter 6). Whereas the first two studies deal with preschool teachers' (satisfaction with) job conditions, study 3 considers the effect of increased burnout symptoms on empathy, and study 4 examines the relationship to one domain and aspect of process quality, namely the frequency of language and literacy related educational activities. In the following chapters, each of the four studies is summarized; full manuscripts are available in Appendices A-D.

7. Study 1 – the role of job conditions

As the role of different job conditions related to increased burnout symptoms in preschool teachers has not yet been conclusively clarified, study 1 explored the relationship between personal, structural, and social conditions at the ECEC workplace – both between and within preschool centers – and the levels of emotional exhaustion, generally considered a core dimension of burnout. The study was based on a large sample of 1,394 preschool teachers (93.3% women; M_{age} = 39.69, SD_{age} = 11.87, age range: 18–75) from 204 preschool centers across Germany.

Due to the nested data structure, hierarchical linear modeling was applied (Raudenbush & Bryk, 2002). A null model for emotional exhaustion revealed an intraclass correlation coefficient (ICC) of .058 for the outcome variable. This means, center differences explained 5.8% of the overall variance in levels of emotional exhaustion, which indicates a small effect (LeBreton & Senter, 2008). In a first model, personal job conditions (educational level, in-service training hours, working hours, ECEC working experience, group position) were entered to predict exhaustion levels. Of those, working experience in ECEC settings was positively related to emotional exhaustion (β = .09). In a second model, structural conditions of the group (number and age of children, proportion of migrant children) and of the center (teacher-child ratio, number of preschool teachers and children, proportion of

migrant children, contractually agreed planning time, available in-service training days, time for leadership tasks, frequency of team meetings) were added. Again, working experience in ECEC settings was a statistically significant coefficient (β = .08); only one of the structural group conditions, namely children's age (β = .08), but none of the structural center characteristics predicted exhaustion levels. In a third model, all predictors, including social conditions (team climate, relation to parents) on the preschool teacher level and, aggregated, on the center level, were entered simultaneously into the model. This model revealed that on both levels the perceived team climate and the relation to parents was strongly associated with preschool teachers' emotional exhaustion, with $\beta_{teacher\text{-}level}$ = -.32 and $\beta_{center\text{-}level}$ = -.34 for team climate and with $\beta_{teacher\text{-}level}$ = -.19 and $\beta_{center\text{-}level}$ = -.74 for relation to parents. The better the perceived team climate and the less conflictual and strenuous the relation to parents, the lower the emotional exhaustion in preschool teachers and their centers. In this last model, the effect of working experience in ECEC settings remained stable (β = .11); from the structural variables, only the proportion of migrant children in a group (β = .09) became significant in a positive direction. The final model accounted for 17% of the variance on the preschool teacher level and for 80% of the variance on the center level.

Taken together, study 1 was the first to investigate the role of the institution and of different job conditions in ECEC settings, based on a large national sample. Findings revealed that exhaustion levels differed between individuals, but also to a small degree between centers – more than was found for secondary schools (Klusmann et al., 2008a). Further, the study provides strong empirical evidence for the connection between emotional exhaustion and social experiences at the workplace, as both team climate and relation to parents were strongly associated with emotional exhaustion. In contrast, structural and personal job conditions were hardly related to exhaustion levels. The only robust (positive) association was found between ECEC working experience and exhaustion, which is in line

with other findings in the ECEC sector (Manlove, 1993; Viernickel et al., 2013), but not with most of the findings obtained from the general working population (Brewer & Shapard, 2004; Maslach et al., 2001) (for further discussion, see chapter 11.1.3). Practically, these findings question regulations and public debates tackling merely structural conditions to relieve the workload of preschool teachers and call for further research on the underlying mechanisms and functioning intervention strategies.

8. Study 2 – the link to aspects of job satisfaction

Reduced job satisfaction is indicative of a person's subjectively perceived mismatch between his or her own ideals and the reality of work (Locke, 1969; Roedenbeck, 2008). Thus, investigating different aspects of job satisfaction is another fruitful way to explore the relationship between (the perception of) job conditions and burnout symptoms, which has hardly been done so far. Therefore, the second study aimed to shed light on associations between social, cognitive-intellectual, and instrumental-material aspects of job satisfaction (including satisfaction with team collaboration, cooperation with parents, opportunities for promotion and further training, center equipment, educational work, working hours and wages) and all three burnout dimensions (emotional exhaustion, depersonalization, and reduced personal accomplishment). The sample for this study consisted of 346 preschool teachers and/or center managers (88% women; M_{age} = 43.13, SD_{age} =11.07, range: 19 to 66 years) from 305 preschool centers in Berlin.

A regression analysis revealed a negative relationship between reported emotional exhaustion of preschool teachers and satisfaction with team collaboration (β = -.16) and cooperation with parents (β = -.18). Furthermore, exhaustion levels were also negatively predicted by satisfaction with opportunities for promotions (β = -.19), working hours (β = -.13), and wages (β = -.20). In addition, younger preschool teachers reported to be more exhausted than older ones (β = -.13), but gender was not a significant predictor. The model

explained 31% of the overall variance on emotional exhaustion. Further analyses also demonstrated a negative relationship between reported depersonalization and satisfaction with team collaboration (β = -.23) and cooperation with parents (β = -.14). Both preschool teachers' age (β = -.20) and gender also played a role (β = .11), such that younger and male individuals reported higher values of depersonalization. The model explained 23% of the overall variance in depersonalization. The last regression model revealed a negative relationship between reduced personal accomplishment and satisfaction with team collaboration (β = -.23) and cooperation with parents (β = -.22); gender and age were no significant predictors. The last model explained 23% of the overall variance in reduced personal accomplishment.

These findings are in line with and validate the results of study 1, although a different approach was chosen. They underlined the importance of good team collaboration and cooperation with parents, even for all three burnout dimensions. Emotional exhaustion was the only outcome that was also predicted by satisfaction with single structural features (including opportunities for promotions, working hours, and wages). These features were not included in the first study, but comply with the recently published recommendations by Fröhlich-Gildhoff and Weimann-Sandig (2020) to improve the position of preschool teachers. Interestingly and in line with research from other occupational contexts (Brewer & Shapard, 2004), study 2 showed negative relations between age and both emotional exhaustion and depersonalization symptoms.

9. Study 3 – the effect on empathy

Empathy is one of the key social competencies required of preschool teachers (Fröhlich-Gildhoff et al., 2014) because it contributes to high global process quality children's own socio-emotional learning. Whereas (non-experimental) research has established empathy as a precursor of burnout symptoms (Wilkinson et al., 2017), it can also

be assumed that burnout symptoms impair empathy, for instance, through the strong self-focus of individuals with burnout symptoms (Hobfoll et al., 2018). Up to now, no study has ever used a randomized controlled experiment to investigate the causal link between burnout symptoms and empathy. The third study addresses this lack of research by developing and applying a novel experimental design. Based on the assumption that burnout symptoms vary situationally, an autobiographical memory task (similar to Todd et al., 2015) was developed to induce burnout symptoms (including emotional exhaustion, depersonalization, and reduced personal accomplishment) in an experimental group. Subsequently, cognitive and affective empathy skills between experimental and control groups were compared. It was hypothesized that the group with increased levels of burnout symptoms would also show less empathy. The study was approved by the ethics committee of the Free University Berlin; preregistration, data, and additional project information are available at https://osf.io/s7m4e/.

The sample for this study was recruited via Amazon.com's Mturk in the U.S. and consisted of 355 participants (44.5% women; M_{age} = 36.37) with diverse occupational backgrounds. Participants' cognitive empathy was measured with the *Reading the Mind in the Eyes Test* (RMET; Baron-Cohen et al., 2001) and 14 work-related items from the *Situational Test of Emotional Understanding* (STEU; MacCann & Roberts, 2008); the measurement of affective empathy consisted of a self-developed test for affective empathy based on the STEU.

Statistical analyses revealed the following findings: An analysis of variance revealed that burnout symptoms differed between the three groups, $F(2, 352) = 5.40$, $p < .01$, $R^2 = .03$, and planned contrasts showed that the experimental group ($M_{Exp} = 3.80$, $SD_{Exp} = 1.25$) reported more burnout symptoms than each of the two control groups ($M_{C1} = 3.37$, $SD_{C1} = 1.18$; $M_{C2} = 3.41$, $SD_{C1} = 1.09$), with $t(352) = 3.3$, $p < .001$ and Bonferroni-adjusted alpha levels of .025 per test (.05/2). The two control groups did not differ from each other ($t(352) =$

-.25, p = .81), and thus were combined for further analyses. Given that the experimental group indeed reported higher burnout symptoms than the control groups, this validated the novel intervention method used in this study (see Appendix C for separate analyses of variance of burnout dimensions).

One-tailed independent t-tests demonstrated that the experimental group scored lower on one of the cognitive empathy measures compared to the combined control group, namely in RMET scores (t(310) = -2.20, p = .01). Specifically, the experimental group (M_{Exp} = 24.45, SD_{Exp} = 6.92) obtained 1.5 (SD = .68, 95%-CI [-2.84, -.16])) fewer correct answers in the RMET than the merged control group (M_C = 25.95, SD_C = 5.70). The two groups neither differed in the other cognitive empathy measure (t(353) = -.98, p = .16) nor in affective empathy scores (t(352) = 1.37, p = .09).

To investigate whether burnout symptoms fully explained the relationship between groups and RMET scores, RMET scores were entered as the dependent variable, group affiliation as the independent variable, and mean scores of burnout levels as the covariate into an additional analysis of variance. As anticipated, findings demonstrated that once burnout levels were included into the analysis (F(1, 352) = 9.95, p = .002, η_p^2 = .03), the main effect of group affiliation no longer reached significance (F(1, 352) = 2.86, p = .09, η_p^2 = .01).

This study makes important contributions to the research field: First, it is the first of its kind to induce burnout symptoms experimentally and in an ethical way. The autobiographical method used in this study can now also be applied to investigate a broader range of consequences of burnout symptoms without solely relying on longitudinal methods. Second, the study revealed effects of increased burnout symptoms on cognitive empathy, contributing to the research gap on socio-emotional consequences of burnout symptoms and questioning the assumption that empathy (only) reduces the risk of experiencing burnout

symptoms (Wilkinson et al., 2017). Finally, the study suggests detrimental effects of burnout symptoms on social relationships that require one to empathize and understand the other person, which is especially important in the preschool context. Thus, validating the method and results with preschool teachers should follow.

10. Study 4 – the relation to professional practices

In ECEC settings, the quality of care is often captured by measuring educational processes taking place in the classroom (Kluczniok & Roßbach, 2014). However, only very few studies consider preschool teachers' burnout symptoms (e.g., emotional exhaustion) when exploring determinants of quality of care, such as the implementation of educational activities. Therefore, study 4 examined the association between emotional exhaustion in 1,389 preschool teachers from 204 preschools across Germany and the frequency of educational activities promoting language and early literacy embedded into daily routines, as often applied in situation-oriented pedagogies. The domain of language and early literacy is a pivotal learning field in German and other OECD countries' preschools (Organisation for Economic Co-operation and Development, 2017).

In a first model including only exhaustion levels as a predictor variable, multilevel regression analysis revealed that emotional exhaustion was negatively related ($\beta = -.15$) to the frequency of activities; the model explained 2% of the overall variance. In a second model including exhaustion levels and all background variables (professional background, group and center characteristics), multilevel regression analysis demonstrated that emotional exhaustion remained to be a stable predictor ($\beta = -.16$), even when all other variables were held constant. Of all background variables, only in-service training contributed to the statistical prediction of frequency of activities with a positive, but small effect ($\beta = .05$). The second model explained 5% of the overall variance on the level of the teacher, but was not able to significantly explain variance at the level of the center.

The findings of the fourth study are in line with research on other occupational groups or educational professionals showing that burnout symptoms impair job performance (e.g., Klusmann et al., 2016; Maslach et al., 2001; Parker & Kulik, 1995) and provided empirical support for the so far neglected (negative) relationship between preschool teachers' exhaustion symptoms and conducted learning activities in the preschool classroom. The results argue for greater consideration of work-related burnout symptoms in preschool teachers when investigating and modeling determinants of preschool quality. Further, they encourage interventions targeting burnout symptoms in preschool teachers to avert detrimental effects for the quality of care.

GENERAL DISCUSSION

Whereas the last part summarized each of the four studies included in the present dissertation, this section will generalize the main findings and integrate them into the existing research literature and theoretical background presented in chapters 1-6. Furthermore, it will address general limitations, directions for future research, and implications for policy and practice.

11. Major contributions of the present dissertation

In light of the already high vulnerability of preschool teachers to develop job-related burnout symptoms and the current ECEC developments that are accompanied by extended task profiles and new demands for preschool teachers, the present dissertation is dedicated to an up-to-date, but understudied topic in the field of early childhood education and care. In exploring burnout symptoms in preschool teachers and their relation to job conditions as well as quality of care, the project provides empirical evidence to reflect on the role of burnout symptoms in existing theories and it provides reference points for (future) empirical investigations in the field. The following subsections discuss the dissertation's contributions in more detail.

11.1 Origins of burnout symptoms and the role of different job conditions

Burnout symptoms are considered a response to chronic stress on the job (Maslach et al., 2001) resulting from the interplay between personal and workplace factors that can either serve as demands or resources (Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde, 2012; Maslach, 2017; Schaufeli, 2017). The theoretical background of this dissertation underlined the significance of strenuous and profession-specific job conditions for the emergence of burnout symptoms in theoretical models (for example, the JD-R model; Demerouti et al., 2001) and empirical investigations (e.g., Blossfeld et al., 2014; Klusmann et al., 2008a; Viernickel et al., 2013) as well as the lack of respective research for the ECEC

context. It further discussed the role of different aspects of job satisfaction – understood as the subjective evaluation of the work context in relation to one's own expectations (see Locke, 1969; Roedenbeck, 2008) – in relation to burnout symptoms and revealed research gaps for the investigation of different aspects of job satisfaction and all three burnout dimensions, especially in the ECEC context. Studies 1 and 2 addressed these existing research gaps for the ECEC sector and focused on examining the role of the preschool and of (the satisfaction with) different ECEC job conditions.

11.1.1 Social experiences and tasks at the workplace

The findings of studies 1 and 2 made a strong point toward the high importance of the social atmosphere and social interactions with colleagues and parents in the workplace for preschool teachers' burnout symptoms, even beyond personal and structural characteristics. Whereas the general effect of social factors on workers' well-being and related constructs is in line with previous research from different occupational groups (e.g., Levecque et al., 2014; Viitala et al., 2015; Viswesvaran et al., 1999), the strong association found in this dissertation is noteworthy and of high theoretical and practical relevance: future studies exploring and practical interventions tackling burnout symptoms in preschool teachers should consider the relation to colleagues and parents as thriving factors and not just focus on structural regulations, as has often been done in the past. However, the role of colleagues and parents in the ECEC context differs from each other, making theory building more complex.

Team colleagues are working partners with the common goal to provide good quality care for children attending their preschool. If there is a lost connection between team members and unresolved conflicts arise (see community misfit in the Areas of Worklife model; Maslach & Leiter, 1997), the team can constitute an additional stress factor and driver of burnout symptoms. However, a functioning and supportive team climate and

collaboration can also be a powerful job resource (cfl. the JD-R model; Demerouti & Bakker, 2011) and source of social support (see Viswesvaran et al., 1999) to buffer against existing demands. Previous research has also shown that good team collaboration directly affects process quality in preschools (Barenthien et al., 2019; e.g., Resa et al., 2018; Wertfein et al., 2013), which has also been integrated in some structure-process models that disentangle structural and organizational/management quality dimensions, including team quality (Becker-Stoll & Wertfein, 2013). This dissertation provides empirical evidence for the importance of aspects of the team quality for the occupational well-being of preschool teachers, including their burnout symptoms and job satisfaction.

Parents play a different role in the preschool context. Because parents meet with preschool teachers during daily pick-up and drop-off situations, specific parent meetings, or additional offers of the preschool for families, they are also elementary social interaction partners of preschool teachers and thus shape the social atmosphere at work. However, parents and preschool teachers do not have an equally entitled relationship. In the end, parents are service recipients and the contact and cooperation with parents constitutes an inherent work task for preschool teachers (Jugend- & Kultusministerkonferenz, 2004). However, in practice, some preschool teachers do not describe or perceive parent work as their task (Textor, 2018), making the relationship even more difficult and potentially contributing to preschool teachers' dissatisfaction with parent cooperation. Research has shown that parents oftentimes come with differing views on education and care issues (Cloos & Karner, 2010) and that conflicts, high demands on the side of the parents, and a tendency of some parents to delegate too much of their children's upbringing and education to preschool teachers constitute additional demands for preschool teachers (Jungbauer & Ehlen, 2015). On the other hand, parent interaction can of course also be a valuable resource for the

everyday work of preschools teachers if the contact with parents is perceived as pleasant as well as supportive and characterized by appreciation.

In current structure-process models (see also Figure 3), networking with parents has been acknowledged as a relatively new, but highly important determinant of high-quality care that is influenced by preschool teachers' beliefs and structural characteristics (Kluczniok & Roßbach, 2014), in this dissertation mainly referred to as personal and environmental job conditions. The present dissertation now suggests to also consider a reverse direction of action, namely that the nature of parent interactions (also) affects preschool teachers, including their mental states and occupational well-being.

11.1.2 The role of the center and structural characteristics

As the first study in the German ECEC context, study 1 estimated the between-center variability in preschool teachers' exhaustion levels. Multilevel analysis revealed a small effect, meaning that exhaustion did not only differ between individuals, but – to a lower extent – also between preschool centers. This finding provides evidence of a shared element of preschool teachers' exhaustion within the same center. It corresponds with findings obtained in a small Swiss sample of preschool teachers (Blöchliger & Bauer, 2017), but is different to what was found for the German school context where no effect of a shared element in the collegium was revealed (see Klusmann et al., 2008a). The work conditions associated with burnout symptoms may differ more between preschool centers than between schools or more similar professionals are clustered within preschools than within schools (e.g., due to the different selection procedures). Generally, the value added by this finding is that the contextual influence of the preschool center should be considered in future burnout models and investigations, and that interventions targeting exhaustion in preschool teachers should also focus on entire work units, namely preschools, and not just on individual teachers (see also chapter 13).

Considering structural characteristics on the level of the preschool or the more immediate working environment of preschool teachers, namely the group, study 1 did not reveal any robust connection to preschool teachers' exhaustion. This is remarkable, as these findings question the often-highlighted role of structural conditions on the genesis of work-related stress symptoms (e.g., Blöchliger & Bauer, 2017; Blossfeld et al., 2014; Viernickel et al., 2013) that are also tackled with political regulation strategies. Similarly, study 2 did not show any associations between satisfaction with promotion of further training or center equipment and burnout symptoms. Satisfaction with opportunities for promotions, working hours, and wages, which also refer to structural aspects, were related, but only to the emotional exhaustion component of burnout. As the exhaustion component is often conceptualized as precursor of depersonalization and reduced personal accomplishment (Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde, 2012; Maslach et al., 2001), it is possible that these factors may only play a role in earlier stages of burnout. The results coincide with remarks from preschool teachers and managers in a North Rhine-Westphalian study by Viernickel et al. (2013) who rated the chances of career advancement as poor and requested a higher influence on their weekly working time as well as higher wages reflecting their working experience and qualifications. Spieß and Westermaier (2016) also noted a strong dissatisfaction of preschool teachers with their salary, but also a pronounced satisfaction with the work itself. If individuals perceive that their own expertise is not valued or rewarded either through promotion opportunities or financial incentives, and if one's own scope of action is restricted (e.g., through insufficient influence on working hours), it is likely that one's own work commitment and motivation dwindles and burnout symptoms increase (see also Areas of Worklife model; Maslach et al., 2001). In general, however, it is noticeable that social experiences in the workplace were shown to be much stronger and more consistently related to burnout symptoms than structural conditions.

11.1.3 Reflecting on working experience and age

From the personal or demographic variables under investigation, both studies 1 and 2 included either working experiences or age, which are naturally highly confounded (Maslach & Leiter, 2017). However, they found opposing associations. Considering that burnout generally develops gradually in response to sustained job stress (cfl. Burisch, 2014), it is reasonable to assume that more experienced and older workers that have been involved in the job for longer also tend to suffer more from burnout symptoms. This has also been taken up by some phase models of professional biographies, which, however, have not yet been empirically tested (cfl. Blossfeld et al., 2014). However, empirical investigations show a somewhat different picture (Maslach & Leiter, 2017). For example, a meta-analysis conducted by Brewer and Shapard (2004) generally points toward negative associations, such that younger and less experienced workers display higher exhaustion symptoms, which is in line with what study 2 found for the exhaustion and depersonalization components of burnout. This relationship suggests that burnout symptoms may be more likely to occur at an earlier stage of a worker's career, when coping mechanisms or resources are not yet sufficiently trained or available. However, it is also possible that the findings are ascribable to the fact that more severely affected older participants with more working experience have already dropped-out of the workforce and therefore also of the study population (see also Maslach & Leiter, 2017). With respect to the educational sector in particular, reverse relationships between age/working experience and burnout symptoms have been demonstrated (Blöchliger & Bauer, 2017; Klusmann et al., 2008a; Viernickel et al., 2013). These are in line with the results of study 1, showing that preschool teachers with more working experience were also affected by increased exhaustion symptoms.

Ultimately, neither the interpretation of the general findings of a negative relationship between the constructs has been conclusively clarified (see Maslach & Leiter, 2017), nor can

the different results of studies 1 and 2 be completely explained. Further research is necessary to examine potential influencing factors (e.g., sample-specific attributes) on the role of working experience or age. Only then can interventions be effectively adjusted to specific risk groups, concerning age or working experience. Whereas the first two studies addressed the origins of burnout symptoms, the others addressed the consequences for the quality of care in preschools.

11.2 Consequences for the quality of care

ECEC settings have to provide high-quality care in order to make sure that children can benefit from preschool attendance (Anders, 2013; Burchinal et al., 2010; Melhuish et al., 2015; Roßbach et al., 2008; Sammons et al., 2008; Sylva et al., 2011). Preschool teachers and their professional performance play a particularly important role for the quality of care (Organisation for Economic Co-operation and Development, 2020a). The theoretical background of this dissertation specifically highlighted two aspects of quality of care: (1) competencies required by preschool teachers, such as knowledge, social skills, and motivation (Anders, 2012; Fröhlich-Gildhoff et al., 2014), and (2) the role of the quality and quantity of general and domain-specific educational processes in the classroom (see structure-process models; Kluczniok & Roßbach, 2014; Pianta et al., 2005; Roux & Tietze, 2007). The empirical part of the dissertation focused on these aspects by investigating (1) the effect of burnout symptoms on cognitive and affective empathy and (2) the relation of exhaustion levels to the frequency of educational activities in the classroom.

11.2.1 Challenging theoretical assumptions about the relation of burnout and empathy

Up to now, there has been a lack of research on socio-emotional consequences of burnout symptoms. Empathy in particular has only been treated as a protective factor against burnout symptoms in non-experimental research (Wilkinson et al., 2017). Although

theoretically equally justifiable (see chapter 5.2.1), the inverse causal direction between empathy and burnout symptoms has never been tested experimentally. This is also due to the fact that it is ethically unacceptable to deliberately induce burnout symptoms in a group of workers in order to compare them with a control group. Study 3 addressed this research gap by developing and validating a novel experimental design to situationally increase burnout symptoms in one group and subsequently compare empathy skills to a control group. The findings provided empirical evidence that burnout symptoms indeed decreased cognitive empathy. Therefore, the study did not only equip the research community with a new, ethically sound experimental method for investigating the effects of (artificially and situationally induced) burnout symptoms without relying solely on longitudinal research and without putting participants at risk by manipulating actual working environments. It also challenged the aforementioned theoretical assumption of the direction of effects between burnout and socio-emotional competencies by demonstrating negative effects of burnout symptoms on cognitive empathy (see Appendix C for more specific discussions concerning the findings for the different empathy measures). Further, the study provided another compelling reason to combat against burnout symptoms, namely to prevent negative effects for empathy, which has been shown to be an important element of high job performance across professions (Gerdes & Segal, 2011; e.g., Hojat et al., 2011; Sadri et al., 2011), but also for preschool teachers (Fröhlich-Gildhoff et al., 2014; Nentwig-Gesemann et al., 2011).

11.2.2 The influence on preschool teachers' professional practices

Despite the fact that preschool teachers are at special risk for developing burnout symptoms (Jungbauer & Ehlen, 2015; Koch, P. et al., 2015; Maslach & Pines, 1977), which has been shown to impair job performance in other professions (Maslach & Leiter, 2017; Swider & Zimmerman, 2010; Wright & Bonett, 1997), common models of preschool quality and preschool teacher competences have not included preschool teachers' mental state or

occupational well-being, such as burnout symptoms, as a component influencing their professional behavior and practices. At least few empirical research has started to demonstrate that high-quality care is also dependent on preschool teachers' depression or burnout symptoms (e.g., Gerber et al., 2007; Hamre & Pianta, 2004; Jennings, 2015). No study to date has explicitly examined the relationship between burnout symptoms, such as emotional exhaustion, and the frequency of educational activities in the classroom. Study 4 addressed this research gap. The focus was on domain-specific activities, namely on activities promoting language and early literacy embedded into daily routines. Since language education embedded into daily routines has received special attention and support by federal programs in Germany (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2016a, 2016b), investigating the influence of preschool teachers' exhaustion symptoms on the implementation of these activities is of particular relevance.

The findings of the study are in line with research examining related aspects of preschool quality (e.g., Gerber et al., 2007; Hamre & Pianta, 2004; Jennings, 2015) and show that exhaustion symptoms of preschool teachers are indeed associated with fewer conducted activities in the group beyond important structural characteristics. This association may be explained by negative cognitive, emotional, and motivational effects of burnout symptoms on core competencies of preschool teachers, as outlined in chapter 5.2. For example, exhausted preschool teachers may retrieve less knowledge, pay less attention to their environment and to children, and be less motivated to implement educational activities in the classroom. This negative relationship between exhaustion symptoms and the frequency of educational activities may even be increased within situation-oriented pedagogical approaches, as these call for special attention, spontaneity, and flexibility on the part of the preschool teacher. Future studies, however, still need to validate these derivations.

Taken together, the findings of studies 3 and 4 revealed negative relations between burnout symptoms and aspects of high-quality care that have not been addressed so far. As a consequence, theories and models of preschool quality as well as future empirical investigations should consider preschool teachers' burnout symptoms more strongly when determining and analyzing quality determinants. The heuristic research model of this dissertation, presented in chapter 6, can serve as a starting point.

12. Limitations and directions for future research

Every research project comes with several limitations that partially restrict the explanatory power of the findings, but also create incentives for future studies. Whereas study-specific limitations are thoroughly discussed as part of the discussion section of each study manuscript separately (see Appendices A-D), this chapter discusses the main limitations of the dissertational project. It further includes new ideas and directions for future research.

12.1 Limitations regarding the validity of causal inferences

The majority of studies in the present dissertation (studies 1, 2, and 4) applies cross-sectional designs, meaning predictors and outcomes were collected concurrently. Therefore, findings obtained are correlative, not causal in nature, and the direction of associations cannot be finally interpreted from the data. To validate the results and to examine the direction of the effects, future studies should apply experimental or longitudinal designs; well implemented, they may allow researchers to make conclusions about causal directions. However, the three studies differ in the way the design affects the interpretation of the findings of each study.

Based on the theoretical background (see chapter 4 and e.g., Maslach et al., 2001), studies 1 and 2 focused on the influence of (the satisfaction with) different job conditions of preschool teachers (mainly captured in the structural quality dimension of structure-process

models) in relation to exhaustion/burnout symptoms. Nevertheless, a reverse relationship is possible for at least some of the conditions under investigation. For example, as increased burnout symptoms also include more distanced and cynical attitudes toward (people at) work (Maslach et al., 2001), it is conceivable that the perception of colleagues and parents is negatively biased for preschool teachers with increased burnout levels. A qualitative study by Peck et al. (2015) supports this idea by finding that preschool teachers showing more pronounced empathy described their relation to families as more positively. To validate the causal direction assumed in studies 1 and 2, future studies could apply an intervention in one group – for example, a team development intervention trying to improve the team climate – and compare the effect on burnout symptoms to a control group. In contrast, intentionally increasing burnout symptoms in one group and comparing the effect on the perceived social experiences with colleagues or parents to another is ethically not acceptable. However, the experimental procedure developed and applied in study 3 provides an opportunity to at least investigate the effect of short-term artificially increased burnout symptoms on the perception of social interaction partners in the preschool context. Further, the analysis of several timepoints of measurements and the influence of third variables (e.g., applying cross-lagged panel designs; Reinders, 2006) could help to identify causal structures and validate the findings of studies 1 and 2. Overall, a reciprocal influence of particular job conditions and burnout symptoms is of course also possible and indicated in the heuristic research model of this dissertation (see Figure 5). The situation of study 4 is somewhat different. It is very unlikely and theoretically not justified to assume the inverse relationship between the main variables of interest, namely that less educational activities would lead to increased exhaustion symptoms.

12.2 Limitations regarding the validity of measurements

Many variables of interest included in the studies of this dissertational project were measured via self-reports. Therefore, some researchers may assume common-method bias, meaning relationships between constructs are enhanced by the shared method variance (cfl. Conway & Lance, 2010). However, Conway and Lance (2010) question the general skepticism regarding the use of self-report measures. They argue that for some constructs self-reports are simply the best data collection method, that information on the construct validity of measurements supports the justification of measures, that self-report measures should not have a strong overlap with each other, and that authors should strive to avoid distortions through self-reporting before and during data collection. What does this mean for the validity of measuring instruments used in this dissertation?

All studies included in this dissertation applied the Maslach Burnout Inventory (Maslach & Jackson, 1981) to measure one or all burnout dimensions. The instrument deliberately quantifies the subjectively perceived experience of burnout symptoms, not any objective indications. However, more objective methods to determine the presence of burnout symptoms would be desirable, but do not exist yet (cfl. chapter 3). Nevertheless, the MBI is not just the most widely applied burnout questionnaire in the field (Burisch, 2014), but has also been thoroughly investigated regarding its psychometric properties, including its construct validity (Maslach et al., 1996; Maslach et al., 2018). Additionally, in all four studies, there was no strong overlap with other self-reported constructs (e.g., job satisfaction, perceived team climate), and burnout symptoms were not assessed directly after or before other self-reported constructs, counteracting reciprocal influences (cfl. Podsakoff et al., 2003). For these reasons, the use and the resulting conclusions seem justified. However, the absence of more objective measures of burnout symptoms may make comparisons across people more difficult, as each person sets their own standards for a baseline level. Therefore,

future research could try to develop and apply more objective measurements (e.g., biological markers), as is also being done in the more general research on stress (e.g., heart rate variability, altered blood lipids, or cortisol levels; Siegrist & Li, 2017). In addition, organizational outcomes of burnout (e.g., days of illness) could be included to validate research findings.

Next to burnout symptoms measured in all four studies, each study also included some unique variables assessed via self-reports. Whereas some constructs required self-reports (e.g., aspects of job satisfaction, *perceived* team climate/relation to parents – individually rated and aggregated for each preschool) and the validity of other selected information is not particularly endangered by self-statements (e.g., structural characteristics, personal qualifications and responsibilities), other constructs would have benefited from more objective or valid measurement methods. For instance, to avoid being dependent on participants' willingness and ability to reflect on and share their own feelings for assessing their affective empathy in study 3, the design could have benefitted from including brain imaging techniques (see for example Banissy et al., 2012) or the dyadic interaction paradigm (Blanke & Riediger, 2019). However, both methods cannot be applied in an online study. Furthermore, the design would have benefitted from measurements that specifically test empathy toward children, not just toward adults. However, so far, there are no validated measuring instruments available that focus on children.

Moreover, the results of study 4 would have been more valid if the frequency of educational activities had also been observed, not just been reported by the respondents. Considering the construct validity of applied self-report measures besides burnout symptoms, information unfortunately remains scarce for some of the investigated concepts. For example, as cooperation with families is a relatively new (research) field in the ECEC sector and measurements are not widely applied or still in development, the psychometric

information of the applied measure for the perceived relation to parents in study 1 is not yet particularly comprehensive. Future studies could benefit from including more data of parents (e.g., socio-economic background, self-reports on perceived relationship to preschool teachers) and more established measurements.

12.3 Limitations regarding generalizability

Transferring results gained through empirical studies to other groups or contexts requires a certain degree of generalizability, which is often limited due to sample characteristics or applied measures. Therefore, this subsection reflects upon the generalizability of findings to (all) German preschool teachers and across countries with different ECEC systems and pedagogical approaches, as well as across learning domains.

Even though studies 1 and 4 stand out by drawing on a large sample of German preschool teachers from across the country, the sample was also somehow selective: all participating preschools and their teachers were part of the federal program Sprach-Kitas. Even though about 10% of all German preschools take part in the program, it was applied in rather large preschools with a high proportion of migrant, refugee, or disadvantaged children. Furthermore, their willingness to participate in the program revealed the preschools' openness for quality development focusing on language education integrated into daily routines, inclusive pedagogy, and collaboration with parents. Thus, these factors may distinguish the preschools of this sample from other German preschools that were not part of the program. However, we controlled for many of these differences (e.g., center size, proportion of migrant children) by including them into our analysis. Further, the increased variance in these variables facilitates the detection of effects that might emanate from them. Nevertheless, future studies would benefit from a more representative sample to validate the found associations.

Study 2, in turn, consisted of a sample from only one federal state, namely Berlin. The transfer of results to other federal states is therefore all the more difficult because contexts between federal states can differ greatly (Schreyer & Krause, 2016). On the one hand, this justifies considering the situation in single federal states. But on the other hand, a generalization to all German preschools is restricted. Berlin, for example, is characterized by a particularly high staff shortage (Ländermonitor Frühkindliche Bildungssysteme, 2019), which may lead to increased dissatisfaction with certain aspects of work, for example the team collaboration. when the tight staffing situation hardly allows for any qualitative interactions with colleagues. Further, the study sample consisted of preschool teachers and managers. Although preschool managers are often also involved with the immediate work with children (Autorengruppe Fachkräftebarometer, 2019), there may of course be differences in certain aspects of job satisfaction that have not been considered in study 2. However, and importantly, the results of both the Berlin (study 2) and Germany-wide samples (study 1) revealed comparable results as both pointed toward the strong connection to social experiences with colleagues and parents.

Concerning the generalizability of this dissertation's findings for the ECEC system of other countries, similar limitations apply. ECEC job conditions differ between countries (Organisation for Economic Co-operation and Development, 2017) and therefore likely also their effects on preschool teachers' burnout symptoms. Further, a study by Schaufeli (2018) investigated burnout levels across professions and found country differences based on the general value of work, governance practices and structures, and inhabitants' general dealing with uncertainty, pointing toward macro-level influences (see also Bronfenbrenner & Morris, 1998). Therefore, future studies should use samples from different countries to investigate the generalizability of findings across countries.

As chapter 2 suggested, Germany currently experiences a shift toward greater qualitative and quantitative expansion and professionalization. As such, the included studies also have the potential to inform other countries that experience similar developments. However, Germany's strong socio-pedagogical tradition in ECEC services with often child-centered and situation-oriented pedagogical approaches may not be comparable to countries initiating more teacher-directed pedagogies. This concerns study 4 in particular, as it focused on activities embedded into daily routines that might require somewhat different preschool teacher competencies than planned or predefined activities implemented in teacher-directed classrooms with fixed curricula. Therefore, future research could also analyze the consequences of burnout symptoms in preschool teachers within other pedagogical frameworks.

Another limitation regarding the generalizability of results applies to study 3. This study used an experimental design and specifically examined the causal direction between burnout symptoms and empathy. As it is usually the case for basic psychological experiments, the design was tested with a heterogenous sample of participants. The sample was recruited online via Amazon.com's MTurk. Research indicates that MTurk personnel is more appropriate for experimental purposes than students, who are otherwise commonly used as participants for experiments (Casler et al., 2013). Thus, in this way, the findings obtained are more generalizable to other professional groups than if only preschool teachers would have been selected. Nevertheless, the present dissertation specifically focuses on preschool teachers' burnout symptoms. Therefore, the experimental design and the findings should be validated with a sample of (German) preschool teachers to ensure the findings can be transferred.

Finally, study 4 focused on the relation between burnout symptoms and the frequency of educational activities promoting language and early literacy, which is a key area of early

education in OECD countries (Organisation for Economic Co-operation and Development, 2017), including Germany (Viernickel & Schwarz, 2009). However, it remains unclear whether these findings also extend to other domain-specific learning fields, such as math or science. Anders and Rossbach (2015), for example, found that preschool teachers' momentary emotional attitude toward math was associated with their sensitivity toward mathematical content in play-based situations. It is possible that preschool teachers' emotional exhaustion also impairs their sensitivity toward math learning opportunities in daily routines. Further, future research should also investigate whether exhaustion also affects the quality of learning opportunities beyond the negative influence on the quantity.

12.4 Other areas for future research

In addition to further validating the findings obtained in this dissertation, future studies could also address many of the other, but related open questions (see also a review by Cumming, 2017). This section exemplarily picks out the following ideas for future research and elaborates on them in more detail: the exploration of personal dispositions, the investigation of job engagement as a positive antithesis to burnout, and the examination of effects on child outcomes. All of these research ideas can also be explored within the framework of this dissertation's heuristic research model (see Figure 5).

Concerning the origins of burnout symptoms, this dissertation focused on the role of different ECEC job conditions. However, as indicated by Xanthopoulou et al. (2007) in the framework of the Job Demands-Resources model, personal resources (e.g., optimism, self-efficacy) also play a role for the occurrence of burnout symptoms by mediating the relation between job resources and burnout. Furthermore, a meta-analysis conducted by Alarcon et al. (2009) revealed associations between burnout symptoms and many more personal dispositions, including core self-evaluations (e.g., self-esteem, self-efficacy) and personality traits (e.g., emotional stability, extraversion) (see also Kim et al., 2019; Swider &

Zimmerman, 2010; Zellars et al., 2004). In line with the fact that the presented statistical models of this dissertation (see studies 1 and 2) still revealed some degree of unexplained variance, especially at the level of the individual preschool teacher, future research could include more personal dispositions of preschool teachers to better understand the emergence of burnout symptoms in preschool teachers. In this context, it would be particularly interesting to pay attention to the role of self-regulation. Self-regulation is often included in teacher models from higher school forms (e.g., Baumert & Kunter, 2013; Helmke, 2012; Klusmann et al., 2008b). As such, it depicts an important competence that enables teachers to effectively manage job demands (Anders, 2012) and to apply constructive problem-solving strategies in their professional life (Albisser et al., 2009). Whereas the present dissertation demonstrated negative effects of burnout symptoms on empathy, which is an important preschool teacher competence, and also assumed negative effects on other competences, such as motivation and attention, high self-regulation may attenuate burnout symptoms by supporting the individual to better cope with existing demands of their work. Empirical indications for this assumption come from a study showing associations between secondary school teachers' self-regulatory styles and their occupational well-being, including emotional exhaustion and job satisfaction (e.g., Klusmann et al., 2008b).

This dissertation explicitly focuses on the phenomenon of burnout and thus on a negative correlative of work. However, work is not only troublesome, stressful, and a cause of drudgery and excessive demands resulting in negative outcomes for the individual and organization. Work can also be a source of great joy and a possibility to live one's passion and competences. This is true for preschool teachers as well. For example, in a study by Viernickel et al. (2013), preschool teachers reported that their occupation and immediate work often fills them with joy. In line with the perspective of positive psychology, which focuses on factors contributing to positive experiences and individual flourishing (Seligman

& Csikszentmihalyi, 2000), future research should take a more holistic view on work and also include positive aspects of the professional life of preschool teachers. This can include sources of high motivation and work engagement as well as its consequences for high job performance, high work commitment, enjoyable flow experiences at work, and individual growth, as is also conceptualized in the Job Demands-Resources model (Hakanen et al., 2006; Schaufeli, 2017). Similarly, the Broaden-and-Build theory (Fredrickson, 2004) assumes that positive emotions (e.g., interest, satisfaction, joy, and love) extend individuals' mindsets and broaden their action repertoires. This results in more available resources, which in turn support the effective management of future challenges. In this sense, "building engagement is the best approach to preventing burnout" (Maslach, 2017, p. 149).

Finally, the dissertation investigated the consequences of burnout symptoms on important social competencies and on preschool teachers' practices. A further research step would be to also collect data on child outcomes to find out whether the effects of exhausted staff members also extend to the children they care for. For example, it could be investigated whether enhanced burnout symptoms in preschool teachers are associated with lower socio-emotional competencies of children and whether this is mediated by preschool teachers' empathy skills. It would also be of interest to investigate the influence of exhausted professionals on children's language, mathematic, or scientific achievement. Indications come from the school context by demonstrating relations between teachers' exhaustion levels and students' math achievements (Klusmann et al., 2016) or students' more general academic achievements (Arens & Morin, 2016), but have to be validated for the preschool context as well.

13. Implications for educational policy and practice

With its focus on the role of job conditions and the quality of care, the dissertational project aims at contributing knowledge on the origins and consequences of burnout

symptoms in preschool teachers. Although the presented studies addressed only partial aspects and findings still need to be validated and expanded in future research, important implications for educational policy and practice can be derived from the findings obtained. They apply to (1) starting points for interventions at the workplace (studies 1 and 2) and (2) reasons to prevent or alleviate burnout symptoms in preschool teachers (studies 3 and 4).

13.1 Starting points for interventions at different levels

The majority of existing burnout interventions are aimed at strengthening an individual's coping skills to better deal with work-related stressors (Blossfeld et al., 2014). As such, they focus on changing the individual instead of changing organizations or conditions (Blossfeld et al., 2014) and come from a rather person-centered perspective on the emergence of burnout symptoms (Leiter & Maslach, 2014). As indicated in chapter 3.2, this is controversial in the research community, because existing burnout models and empirical investigations have also pointed toward the role and interplay with job conditions (e.g., Blöchliger & Bauer, 2016; Leiter & Maslach, 2004; Schaufeli, 2017; Viernickel et al., 2013). Furthermore, focusing only on the individual can easily result in blaming the individuum (Maslach, 2017), instead of improving the work situation, which may also benefit others. This dissertation has pointed toward the strong influence of social experiences at the workplace (including team collaboration/climate and cooperation/relations with parents) for the emergence of burnout symptoms in preschool teachers, far beyond structural conditions under investigation. Only study 2 revealed some associations between one burnout dimension, namely emotional exhaustion, and dissatisfaction with opportunities for promotions, working hours, and wages. Furthermore, study 1 supported the need for interventions targeting entire preschools and not just individuals at risk by showing that exhaustion significantly differed between preschool centers. Several implications of these findings for stakeholders of different levels come to mind.

The political debate often focuses on improving structural conditions, such as the teacher-child ratio or the educational level of preschool teachers. However, according to the present dissertation, educational policies should rather focus on improving the quality of social interactions in the field. Therefore, policies could implement parent and team collaboration more strongly into educational curricula and endow providers or preschools with greater financial means to enable in-service trainings, team development measures, and supervisions tackling these issues. The need for stronger implementing collaboration with parents in educational curricula and in-service trainings is also supported by research showing that parent work is often not addressed thoroughly in educational training for preschool teachers in Germany (Friederich, 2011), although contact to parents is ultimately in the responsibility of preschool teachers (see Friederich, 2011) and depicts an important quality of care dimension (Kluczniok & Roßbach, 2014). As a consequence, beginning preschool teachers often feel insecure in topics outside of the work with children (see Dippelhofer-Stiem, 1999) and many preschool teachers do not even consider parent work as one of their core responsibilities (Textor, 2018), which may also exacerbate problems with parents. Furthermore, parent and team collaboration may also be interconnected: Sharing information and experiences concerning parents or collaboratively developing strategies for dealing with challenging families may also increase the satisfaction and quality of parent contact. Support for this assumption comes from research showing positive relations between team quality and process quality, which also emphasizes the general role of good team collaboration for high-quality care (Barenthien et al., 2019; Resa et al., 2018; Wertfein et al., 2013). For example, Barenthien et al. (2019) were able to show that exchanging mathematics-related content within the team increased the math-related process quality. However, in order to perceive team colleagues as a powerful resource for the challenges of everyday work (Blossfeld et al., 2014; see also Viernickel et al., 2013; Viswesvaran et al.,

1999), the training of successful communication strategies, the constructive handling of conflicts, and the cohesion and appreciation within the team is pivotal, although this may require time, practice, and guidance from external professionals.

Because both team quality and parent collaboration are relatively new areas of research in the ECEC field, particularly in relation to burnout symptoms, policymakers should also provide more research funding for projects that aim at better understanding underlying mechanisms and determinants. Financial support could also be given to projects that scientifically investigate the effectiveness of implemented interventions in the workplace. Following Fröhlich-Gildhoff and Weimann-Sandig (2020), educational policy could also improve the position and occupational well-being of preschool teachers by upgrading opportunities for promotions to enable future job perspectives, by enforcing more pleasant working hours to reduce conflicts with private life, and by increasing their salaries or other forms of appreciation (see Maslach et al., 2001), as was indicated by the results of study 2.

Other stakeholders in the field, but at a lower level, are providers and managers of preschools. Similar to policymakers, providers can also promote and provide financial means for in-service trainings and professional supervision in their affiliated preschool institutions that address team collaboration and parent work. In addition, they can support a culture of appreciation of preschool teachers and possibly even try to implement an internal promotion system to counteract dissatisfactions in these areas (see also Viernickel et al., 2013). Furthermore, providers can specifically support trainings for center managers (see also Blossfeld et al., 2014). Preschool managers are located at the interface between provider and preschool and between organizational development tasks and the immediate everyday work of preschools. As such, they can play crucial roles in the prevention and alleviation of burnout symptoms, as was also shown in the school context (Klusmann et al., 2008a;

Ksienzyk & Schaarschmidt, 2004). Managers can set important impulses for a better and more pleasant team culture, actively support staff in dealing with difficult situations, or initiate and establish team trainings, supervision, or collegial consulting (Hitzenberger & Schuett, 2016; Klaudy et al., 2016; Viernickel et al., 2013).

While this section addressed the question of what implications can be derived for tackling burnout symptoms in preschool teachers, the upcoming section elaborates on reasons why to intervene at all.

13.2 About the significance of burnout symptoms

Concerning the consequences of burnout symptoms, the present dissertation focused on the role of burnout for aspects of high-quality care. Study 3 examined the causal effect of burnout symptoms on empathy and found negative effects for cognitive empathy. Empathy in turn is an important social competency required of high-performing preschool teachers (Fröhlich-Gildhoff et al., 2014). It is reasonable to assume that a decline in empathy through increased burnout symptoms is accompanied by reduced global process quality because the teacher is less able to react sensitively to children, to scaffold perspective-taking, and to positively contribute to the emotional climate in the classroom. In addition, study 4 focused on preschool teachers' practices and found that higher exhaustion symptoms come along with fewer educational activities promoting language and early literacy – one of the most pivotal learning domains in preschool (Organisation for Economic Co-operation and Development, 2017) –, embedded into daily routines. This indicates domain-specific impairments of process quality, particularly in situation-oriented pedagogical approaches, due to increased burnout symptoms.

In line with research on burnout consequences from other professional groups and with the very few studies that exist for preschool teachers (see chapter 5), the findings of studies 3 and 4 thus suggest that burnout symptoms have negative consequences for

preschool teachers' professional performance, including their competencies and practices, and therefore also for the quality of care in preschools. Since the quality of care is key to positive and long-lasting child outcomes (Anders, 2013; Burchinal et al., 2010; Melhuish et al., 2015; Roßbach et al., 2008; Sammons et al., 2008; Sylva et al., 2011), policy guidelines and responsible stakeholders in the field should treat burnout symptoms in preschool teachers as a serious threat, also during their current effort to expand and professionalize the ECEC system including its staff, and they should take actions to avoid possible adverse effects for children. However and in line with Cumming (2017), the promotion and ensuring of preschool teachers' mental state is not just necessary for the sake of better quality care, but it is also a matter of respect and appreciation toward preschool teachers themselves.

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Appendix A – Manuscript for Study 1

STUDY 1

Emotional exhaustion in German preschool teachers: the role of personal, structural, and social conditions at the workplace

Trauernicht, M., Anders, Y., Oppermann, E., & Klusmann, U. (unpublished). Emotional exhaustion in German preschool teachers: the role of personal, structural, and social conditions at the workplace.

Abstract

Research has demonstrated that preschool teachers are particularly prone to develop work-related stress symptoms, such as burnout. However, which workplace conditions are particularly related to burnout symptoms in preschool teachers remain widely unknown. Hence, this study aims at disentangling personal characteristics (e.g., educational degree, working experience) as well as structural (e.g., age of children, teacher-child-ratio) and social conditions (team climate and relation to parents) of the work environment of preschool teachers in regard to emotional exhaustion—generally perceived as core dimension of job burnout. We draw on data collected from a nation-wide sample of 1,394 preschool teachers nested in 204 preschools. Multilevel analysis demonstrated that center differences explained only 5.8% of the overall variance in levels of emotional exhaustion. Emotional exhaustion was strongly associated with social experiences at the workplace, but hardly with any structural or personal job conditions. This has important practical implications for interventions, which should focus on social aspects, such as team cohesion and dealing with challenging parents.

Keywords: emotional exhaustion; burnout; work stress; preschool teachers; team climate; relation to parents

Introduction

For many decades, researchers have been interested in a phenomenon called burnout that is characterized by a "persistent, negative, work-related state of mind" (Schaufeli & Enzmann, 1998, p. 36). Emotional exhaustion—feeling overstrained and drained of emotional resources—is widely recognized as the core component of job burnout (Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008; Kristensen, Borritz, Villadsen, & Christensen, 2005; Lee & Ashforth, 1996; Maslach & Jackson, 1981). Studies of the past 40 years have shown that childcare professionals are especially prone to experience burnout symptoms at some point during their careers (e.g., Blöchliger & Bauer, 2017; Decker, Bailey, & Westergaard, 2002; Goelman & Guo, 1998; Koch, Stranzinger, Nienhaus, & Kozak, 2015; Løvgren, 2016; Manlove, 1993; Maslach & Pines, 1977; Pines & Maslach, 1980; Viernickel, Voss, Mauz, Gerstenberg, & Schumann, 2013).

Staff with burnout symptoms has higher turnover rates and absenteeism from work, experiences more health problems and less well-being, and shows detached relationships to recipients as well as decreased quality of care (Blöchliger & Bauer, 2017; Borritz et al., 2006; Burisch, 2006; Manlove, 1993; Salvagioni et al., 2017; Sandilos et al., 2015; Swider & Zimmerman, 2010). All of these aspects are highly relevant for the work force in early childhood education and care (ECEC) settings that is already struggling with low staffing levels and increasing demands (OECD, 2017; Schreyer & Krause, 2016). As children from disadvantaged backgrounds particularly from high-quality care in ECEC settings (Cunha et al., 2006; OECD, 2017; Wößmann, 2008) – which includes consistent care (Choi, Horm, Jeon, & Ryu, 2019; Howes & Hamilton, 1993; Ruprecht, Eliker, & Choi, 2015), good mental health of caregivers (Cumming, 2017; Jeon et al., 2014; Kwon et al., 2019; Sandilos et al., 2015), and good relationships with caregivers (Commodari, 2013; Pianta & Stuhlman, 2004) –, that is at stake with exhausted preschool teachers, this group of children might also suffer

the most from negative effects of preschool teachers with burnout symptoms. Therefore, it is even more important to understand the specific underlying factors associated with burnout symptoms in preschool teachers to combat against them.

There is substantive research demonstrating the general influence of the workplace on the development of burnout symptoms across professions (e.g., Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Halbesleben & Buckley, 2004; Maslach, Schaufeli, & Leiter, 2001). However, to our knowledge, there are only some studies investigating workplace factors of ECEC settings in particular (see e.g., Barford & Whelton, 2010; Decker et al., 2002; Goelman & Guo, 1998; Løvgren, 2016); hardly any studies consider the nested data structure resulting from several preschool teachers belonging to the same preschool center (for an exception, see Blöchliger & Bauer, 2017). Therefore, the present study draws on a large German dataset and examines personal, structural, and social job conditions and their association with preschool teachers' symptoms of emotional exhaustion, both within and between preschool centers. The investigation will provide indications for adjustments at the workplace of preschool teachers to prevent adverse effects for teachers and children and to ensure high quality of center care.

The role of job demands and resources

To investigate the impact of and to structure relevant working conditions on employees' health and well-being, studies often use existing job stress models (Bakker & Demerouti, 2007; Jonge, Bosma, Peter, & Siegrist, 2000). A very influential model of this kind, which allows the study of many and profession specific factors, is the job demands-resources (JD-R) model (Demerouti et al., 2001). It predicts job strain, such as burnout, by two categories: demands and resources (Bakker & Demerouti, 2007). Job demands are of physical, social, or organizational nature and involve efforts and costs for the individual worker (Demerouti et al., 2001). In contrast, job resources refer to physical, psychological,

social, or organizational work facets that are functional in achieving goals, diminish job demands or costs, or encourage personal growth and learning (Demerouti et al., 2001; Demerouti & Bakker, 2011). The more demands and the less resources an individual worker has available, the more job strain is experienced. However, the allocation of a particular job aspect to one of the two categories is often difficult (Schaufeli & Taris, 2014; van Veldhoven et al., 2020); whereas one individual may perceive a condition as demand (e.g., number of working hours), another may consider it as a resource. Another way of structuring job conditions is to distinguish between value-neutral personal and environmental job conditions (e.g., Maslach et al., 2001; Rothland & Klusmann, 2016). The following sections elaborate on this differentiation in detail and summarize specific personal and environmental conditions relevant in ECEC settings with a focus on those that have been associated with high-quality care and/or with the emergence of burnout symptoms.

Personal job conditions

Personal job conditions refer to individual requirements or circumstances related to the job. They describe professional competencies and personal workloads that often depend on individual (career) decisions. For example, research indicates that better educated and trained preschool teachers experience less burnout symptoms (Manlove, 1993). Goelman and Guo (1998) argue that higher education may lead to more realistic expectations of the job and roles, which in turn may influence preschool teachers' perception of their work. Interestingly, there seem to be only very small or no associations between preschool teachers' formal qualification and classroom quality or child outcomes (Early et al., 2006; Early et al., 2007). However, studies investigating in-service trainings show positive associations with quality (Fukkink & Lont, 2007; Slot, 2018; Slot, Lerkkanen, & Leseman, 2015) and report preschool teachers perceive the support of in-service trainings in a center as a resource (Viernickel et al., 2013).

Another construct of this category is teachers' working experience in ECEC settings. However, research results have revealed mixed effects so far. It can serve as a resource because workers are feeling more confident in dealing with different requirements, but it is also associated with lower working capacity (Viernickel et al., 2013). Other studies indicated that more experienced professionals show better process quality (Pianta et al., 2005; Tietze et al., 2012) and fewer burnout levels (Manlove, 1993). Slot et al. (2015) showed that more work experience increased pedagogical quality and decreased negative effects of a high number of migrant children in preschool classrooms.

Individual workload, which is generally considered as a main driver of burnout, is often measured by the number of working hours of an individual worker (Maslach et al., 2001). Furthermore, the respective roles and accompanying tasks of pre-school teachers also differ in terms of workload. Thus, lead teachers usually bear a higher degree of responsibility compared to assistant teachers. Thereby, lead teachers may experience higher demands, but they have also got higher resources (Blöchliger & Bauer, 2016), such as more autonomy and control.

Environmental job conditions

In contrast to personal job conditions that mainly relate to the individual worker, environmental job conditions depend on organizational and work contexts and are shared with co-workers. They can be of structural or social nature. Structural conditions are comprised of quantitative characteristics of the work setting that are objectively determinable, which means that they demand for little or no subjective concordance between people (Phelan, Bromet, Schwartz, Dew, & Curtis, 1993). The regulation and control of structural conditions are incumbent upon legislations, policies, and funding strategies (Slot, 2018) from decision-makers at management or policy levels. In contrast, social conditions of the work environment refer to the quality of interactions between people involved in the job, and as

such to relationships, the perceived climate, or emotional support between people. They are often elusive, multifaceted, and more dependent on individuals and as such less controllable by decision-makers at higher levels. Interventions focusing on changing or improving social conditions are often time-consuming and complex and require personal guidance and intensive (team) trainings (cfl. Glisson, Dukes, & Green, 2006).

Structural job conditions in preschools

The structural work environment in preschools is particularly determined by personnel conditions, characteristics of children, and existing organizational structures. The most prominent structural condition concerns staffing issues, such as the teacher-child ratio (Blöchliger & Bauer, 2017; Maslach & Pines, 1977; Viernickel et al., 2013). A low number of caregivers in relation to a high number of children increases the workload because a preschool teacher has to care for more children (Maslach & Pines, 1977) and preschool teachers are less able to perform their jobs well (Viernickel et al., 2013). In addition to the sheer ratio, the total number of available staff members in a center influences the workload. If there are only few teachers working in a center, adequate staffing and compensation is at stake if preschool teachers are absent at times, for example due to illness (Viernickel et al., 2013). A high number of available teachers can somewhat counteract this problem.

Regarding children's characteristics, a high total number of children and a high proportion of children with particular needs (e.g., migrant children with possible language problems and cultural challenges) may lead to a more complex and diverse work environment and increase the workload. In accordance, research on preschool quality demonstrates that more migrant children (Kuger & Kluczniok, 2008; Slot et al., 2015), higher teacher-child ratios, and younger children in a group decrease process quality (Kuger & Kluczniok, 2008).

Organizational structures shaping the work environment of preschools are for example: defined planning time, frequency of team meetings, and time for leadership tasks.

Research indicates that the amount of time teachers have for planning, preparing, and follow-up work disencumber preschool teachers (Sosinsky & Gilliam, 2011) and decrease teachers' workload (Blöchliger & Bauer, 2016) by avoiding working overtime or working at home (Viernickel et al., 2013). Planning time also raises the quality of an ECEC setting (Tietze et al., 1998; Tietze et al., 2012). Further, frequent staff meetings create the opportunity to socialize and support each other (Maslach & Pines, 1977; Viernickel et al., 2013). As such, they can help to prevent a lost sense of connection, one of the drivers of burnout symptoms (Maslach et al., 2001). The importance of good leadership in ECEC settings has recently been reinforced in the research literature (cfl. Strehmel, Heikka, & Hujala, 2019). One structural aspect with the potential to increase good leadership is fixed time for leadership tasks of center managers. Another structural condition that is connected to workers' burnout experiences is the (perceived appropriateness of their) professional wage, which represents a form of reward or appreciation for the work people do (Maslach, Schaufeli, & Leiter, 2001). Preschool teachers tend to earn less than teaching professions at higher education levels, but their professional salaries also vary widely between countries (OECD, 2017).

Social job conditions in preschools

That the social environment of the workplace clearly impacts workers' well-being and performance has already been shown in many studies across professions (González-Romá, Fortes-Ferreira, & Peiró, 2009; Levecque, Roose, Vanroelen, & van Rossem, 2014; Skaalvik & Skaalvik, 2009; van Droogenbroeck, Spruyt, & Vanroelen, 2014; Viitala, Tanskanen, & Säntti, 2015; Viswesvaran, Sanchez, & Fisher, 1999). In preschools, two groups of people shape the social environment of preschool teachers in particular: colleagues and parents. Thereby, both groups take on very different roles in the everyday working life and shape the social experience in different ways. Colleagues are part of the same team and as such working partners at eye level. The burnout literature suggests that a lost connection to the

work community, non-shared values with the working group, and conflicts with colleagues increase or even release burnout symptoms (Maslach et al., 2001; Viernickel et al., 2013). It has also been shown that a good team climate and professional exchange between team members are associated with better quality of care for children (Resa, Groeneveld, Turani, & Anders, 2018; Wertfein, Müller, & Danay, 2013).

In contrast to colleagues, parents are educational partners and service recipients, coming with certain expectations and claims regarding the education and care of their children. Cooperation and networking with parents constitute an increasing emphasis in ECEC settings (Hachfeld, Anders, Kuger, & Smidt, 2016) and depict an important part of preschool teachers' work tasks (Kluczniok & Roßbach, 2014), much more than in primary and secondary school settings. Investigations of relation to parents with emotional exhaustion of teachers in preschool settings are still pending, but research from secondary school contexts found positive associations between pressure from students' parents and burnout (Stoeber & Rennert, 2008) and negative associations between good relations to parents and burnout (Skaalvik & Skaalvik, 2009, 2010).

The role of the center

Job conditions cannot just differ within, but also between preschool centers, for example due to the composition of children, parents, and staff or specific regulations. In line with this, there is growing recognition in the research literature for a shared element of burnout symptoms within the institution (Blöchliger & Bauer, 2017; Friedman, 1991; Halbesleben & Leon, 2014), even though burnout was originally viewed as an individual phenomenon (e.g., Halbesleben & Buckley, 2004; Maslach et al., 2001). One line of reasoning argues that there are some institutions with more exhausting working conditions than others (Klusmann et al., 2008). Another argument comes from research about emotional contagion (Hatfield, Cacioppo, & Rapson, 1994); from this perspective, burnout symptoms

spread within a given workplace if colleagues are frequently talking about work-related problems and individuals are particularly susceptible to others' emotions (Bakker & Schaufeli, 2000). So far, empirical educational studies have revealed mixed results: Klusmann et al. (2008) found only very little explained variance of emotional exhaustion between German secondary schools and a much greater influence of individual factors. In contrast, Blöchliger and Bauer (2017) found a medium to large effect of explained variance between Swiss ECEC centers with regard to burnout symptoms of their staff. Clarification of the extent to which exhaustion levels differ between centers is still pending in many national contexts, including the German.

Study context: early childhood education and care in Germany

To facilitate comparison with other national ECEC systems and to better classify the results of this study, it is important to understand the national context of the given sample. Germany's ECEC system is highly decentralized. Each of the 16 federal states translates general national regulations into its own laws and conditions leading to high heterogeneity between federal states with regard to ECEC provision, quality, and funding (Schreyer & Krause, 2016). The ECEC system is assigned to the child and youth welfare system of the country. This means that preschools are embedded in other child and youth welfare services and they follow a socio-pedagogical tradition. This is also reflected in the strong emphasis on the holistic preparation of children for life and life-long learning (Jugend- & Kultusministerkonferenz, 2004). Traditionally, many preschools admit to a situation-oriented approach (see Oertel, 1984), where the daily pedagogical routine is driven by situations and topics relevant for the children (Neuhaus, Macha, & Pesch, 2018); moreover, free and unguided play is highly valued and children of different ages are often part of the same group (Anders, 2015). As opposed to formal schooling, there is no fixed curriculum with distinct subjects in German preschools that determine the daily schedule (Jugend- &

Kultusministerkonferenz, 2004); however, the federal education plans emphasize the role of ECEC in the support of different learning domains, particularly of language and literacy (Viernickel & Schwarz, 2009). Thereby, preschool teachers are supposed to value and support bi- and multilingualism in preschool; children with language difficulties receive a targeted support program in German (Viernickel & Schwarz, 2009).

However, throughout Germany there has been a strong reorganization of its ECEC system in the past decades (Tietze et al., 2012) resulting in new challenges and opportunities for preschool teachers. On the one hand, the ECEC system is confronted with rising participation rates through the expansion of legal entitlement to a place in a childcare setting from age one to school entry (OECD, 2017; Schreyer & Krause, 2016; Tietze et al., 2012). Whereas participation rates for three to five year olds have increased only slightly (from 87.3% in 2006 to 93.7% in 2017), participation rates for children aged two or younger have almost tripled, from 13.6% in 2006 to 33.1% in 2017 (Autorengruppe Bildungsberichterstattung, 2018). Of course, this increase also resulted in a higher demand for preschool teachers; even though the number of employed preschool teachers increased (Autorengruppe Bildungsberichterstattung, 2018), they do not yet meet the existing demands (Schreyer & Krause, 2016) and will probably not do so in the coming years (Autorengruppe Bildungsberichterstattung, 2018).

On the other hand, there is a progressive professionalization and related substantive change of childcare services (Kluczniok & Roßbach, 2014; OECD, 2015, 2017) leading to new tasks for preschool teachers, such as quality development and documentation obligations, education and care for more children aged two and below, and the implementation of educational programs. About 70.3% of all professionals working in the German ECEC system hold a vocational training degree (Autorengruppe Bildungsberichterstattung, 2018); this educational track is very general in content and enables

successful graduates to work in broad working fields, including preschools, but after-school programs, and residential childcare (Jannsen, 2010). Therefore, preschool teachers are often not trained and prepared for the specific tasks in their daily work with preschool children. All of these changes are accompanied by a growing interest in ECEC-related research (Anders & Roßbach, 2013), which had long been neglected as compared to ECEC research in the Anglo-Saxon world (Linberg, Baeumer, & Rossbach, 2013). Further, the traditional child centeredness in German ECEC centers is now gradually enriched by a stronger orientation towards educational curricula, customary in many other OECD countries.

The present research

Based on previous research, the present study aims at understanding associations between personal conditions as well as structural and social environmental conditions at the workplace with preschool teachers' symptoms of emotional exhaustion. We first analyze to what extent symptoms of emotional exhaustion differ between preschool centers. Second, we investigate how personal job conditions (e.g., qualification, ECEC work experience) are related to symptoms of emotional exhaustion. Third, we examine the additional association of environmental job conditions of centers (e.g., planning time, teacher-child-ratio) and groups (e.g., number of children in group, proportion of migrant children in group) with emotional exhaustion of preschool teachers. Last, we investigate the additional role of social working conditions (team climate, relation to parents) in relation to preschool teachers' emotional exhaustion.

Method

Participants and procedure

Data were provided by the evaluation study of the German federal program *Sprach-Kitas: Weil Sprache der Schlüssel zur Welt ist* [Language day care centers: because language is the key to the world]. The project is funded by the German Federal Ministry for Family

Affairs, Senior Citizens, Women and Youth and under the lead of the Free University of Berlin and the University of Bamberg. The program was implemented in 10.5% of all German preschools with a focus on larger preschools with high proportions of children from migrant, refugee, or disadvantaged families, which increases this sample's variance in these variables. Sprach-Kitas aims at enhancing preschool quality with a focus on language education integrated into daily routines, inclusive pedagogy, and collaboration with parents. The data used for this study stemmed from three different sources: from preschool teacher reports collected in spring 2018, from reports of their center managers collected in fall 2017, and from baseline data on structural aspects of each preschool collected in fall 2018. Even though the data collection took place in the context of an evaluation study, the present study does not answer evaluative questions.

Our sample consisted of N = 1,394 preschool teachers (93.3% women; age range: 18–75; M = 39.69, SD = 11.87) from 204 preschool centers (on average, 6.83 preschool teachers per center) of nine federal states of Germany. Beforehand, we excluded data from preschool teachers that answered no (n = 50) or less than 50% of all items (n = 3) representing the outcome variable (emotional exhaustion). The average preschool teacher worked for 33.42 hours per week (SD = 7.61), had 12.95 years of working experience in ECEC settings (range: 0–49 years, SD = 11.55), and graduated from a vocational program (86.8%). The average preschool center in our sample cared for 94.07 children (SD = 44.85), whereby 39.21% of enrolled children had a migration background, i.e. having at least one parent with another first language than German, with a teacher-child ratio (in full-time equivalents) of 1 to 6.26 (SD = 1.79). Table 1 and 2 provide overviews of all descriptive data.

Measures

In line with our research questions and theoretical assumptions, we measured emotional exhaustion of preschool teachers as our outcome variable and personal as well as

structural and social environmental job conditions, both on the level of the teacher and center, as our predictor variables. Figure 1 depicts an overview of our measures.

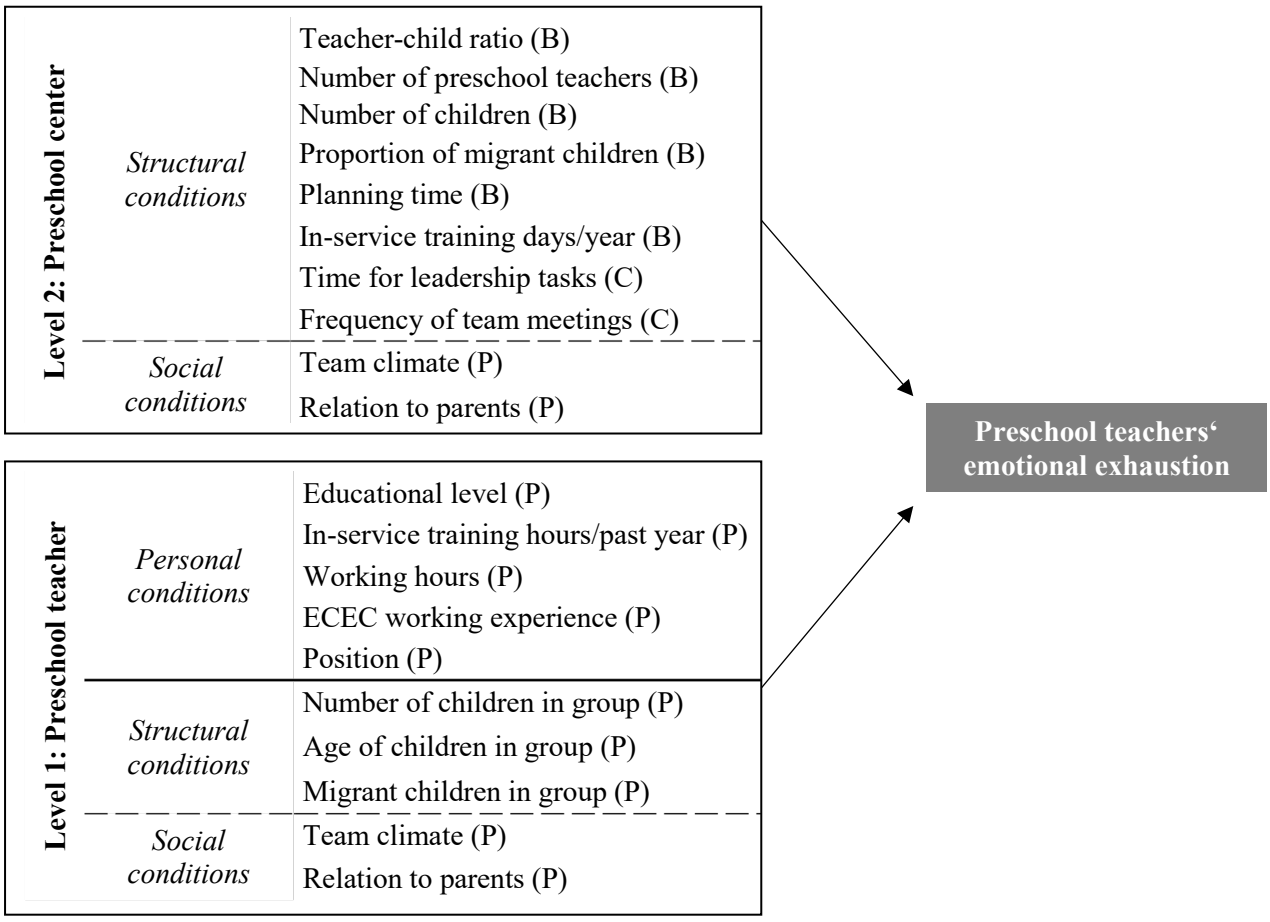

Figure 1. Overview of variables examined in the present study. Depicted are personal, structural, and social job conditions on the level of the preschool center (level 2) as well as of the individual teacher (level 1). Uppercase letters indicate data sources: B = Baseline data, C = Center manager reports, P = Preschool teacher reports.

Outcome measure

Emotional exhaustion was measured with the respective subscale of the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981). We used an established German translation (Büssing & Perrar, 1992) and slightly adapted two items for better reading fluency. Preschool teachers indicated their agreement with nine items (e.g., "I feel

emotionally drained from my work."[3]) on a 7-point response scale ranging from 1 = *hardly ever* to 4 = *moderately* to 7 = *very strongly*. Internal consistency in our sample was excellent (Cronbach's α = .93); for comparison, Büssing and Perrar (1992) report an internal consistency of .89 (Cronbach's α). For more information on the psychometric properties, see Maslach, Jackson, and Leiter (2018) for the original English version or Büssing and Perrar (1992) for the applied German version of the questionnaire.

Preschool teacher-level predictors

Personal conditions

We asked preschool teachers to indicate all professional degrees they hold and used their highest degree as their current educational level. Further, they specified if they had a leading or an assisting position in their predominant group or if they filled in any other role, which we treated as missing value. Preschool teachers also provided information on how many hours of training they had received in the past twelve months, how many years they had already worked in ECEC contexts, and how many hours per week they worked according to their employment contract. As the description of participants revealed, we also asked respondents to indicate their gender and age. But because our sample consisted primarily of women and because working experience was highly correlated with age, we did not include gender and age as covariates into our analyses.

Structural group conditions of the work environment

Preschool teachers provided information on group characteristics, depicting their closest work environment, including number and age of children in their group as well as

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number of children with migration background. Unfortunately, we did not have data on the teacher-child ratio at the group level.

Social conditions of the work environment

To assess how individual teachers perceived the team climate in their center, we used a selection of items inspired by Brodbeck, Anderson, and West's (2000) Team Climate Inventory (English version: Anderson & West, 1996). The items comprised several aspects of the social climate between colleagues, such as shared vision, working style, team cohesion, and communication. Preschool teachers rated their agreement to 12 items (e.g., “I personally agree with my team’s objectives” or “I feel accepted and understood by my team colleagues”) on a 5-point Likert scale. Response categories ranged from 1 = *does not apply at all* to 5 = *absolutely true*. Individual scores in this study consisted of averaged responses across items if participants answered at least 50% of the items. The internal consistency in our sample was excellent (Cronbach’s α = .92). Similarly, high internal consistencies of the subscales as well as further information on the existing validity of the original and complete inventory are reported by Brodbeck, Anderson, and West (2000).

To measure teachers’ perception of the relation to parents, we used Kurucz, Lehrl, and Anders' (2020) scale called Perceived Cooperation Quality With Parents With and Without Immigrant Background. The measure consists of fourteen items; seven items refer to parents with migration background and seven refer to parents without migration background. The scale uses a semantic differential with a 7-point bipolar response scale between two antonyms. For each item, respondents specify how they generally perceive the relation to parents, for example ranging from *strenuous* to *trouble-free*. The internal consistency of the total scale in our sample was excellent (Cronbach’s α = .91). Since we were interested in preschool teachers’ general perception of the relation to parents regardless of their

background, individual scores consisted of averaged responses across all 14 items if at least 50% of all items had been answered.

Preschool center-level predictors

Structural conditions of the work environment

We asked center managers to indicate how many hours per week they worked according to their employment contract and how many hours of them they were free to work on leadership tasks. The proportion of time for leadership tasks compared to total working time was used as predictor variable. We also asked them about the frequency of team meetings. They responded on a 6-point response scale ranging from *several times a week*, *once a week*, *several times a month*, *once a month*, *rarer* to *never*. From the baseline data, we used information about the total number of children (without children in after-school care) and the total number of preschool teachers in the center (without the additional specialist for language education funded by the federal program) as well as about the number of migrant children, available training days per year for full-time staff, and contractually agreed planning time for full-time staff. Further, we calculated full-time equivalent child-teacher ratios from provided number of available places and number and hours of staff members, as is commonly calculated (destatis, 2019).

Social conditions of the work environment

We assessed perceived team climate as well as relation to parents on the center-level by aggregating individual ratings of each scale (described above) per center. We calculated the intraclass correlation coefficients ICC1 and ICC2 that are commonly used as effect size and reliability indices for aggregated level-2 variables (see Lüdtke, Robitzsch, Trautwein, & Kunter, 2009; Lüdtke, Trautwein, Kunter, & Baumert, 2006). The ICC1 provides information about the extent to which individual ratings are affected by the center environment. For perceived team climate, the ICC1 value was .24 (24% of the variance lies at the center level)

and for relation to parents, it was .15 (15% of the variance lies at the center level). Since ICC1 values of .01 indicate a small effect, ICC1 values of .10 a medium effect, and ICC1 values of .25 a large effect (LeBreton & Senter, 2008), both ICC1 values can be considered as medium effects. Based on the ICC1 and the number of units, it is possible to calculate the ICC2 (Bliese, 2000). Values above .70 are interpreted as strong agreement, values above .50 are considered as moderate agreement (LeBreton & Senter, 2008). In our sample, the ICC2 for perceived team climate was .68 and for relation to parents .53, indicating a moderate agreement for both measures.

Statistical analyses

The dataset for this study was compiled by selecting all of our variables of interest from the general preschool teacher survey and by adding the additional variables for each respondent from the survey of center managers as well as baseline data of the preschool (see *Figure 1* for a detailed description of the survey sources of all used variables). Preliminary and correlational analyses were conducted with IBM SPSS Statistics 25 (IBM Corp. Released, 2017). According to our research questions and structure of variables, multilevel analysis was obligatory. Therefore and in order to shed light on the influence of working conditions at the individual and center level on emotional exhaustion of preschool teachers, we applied hierarchical linear modeling (Raudenbush & Bryk, 2002). In this way, we produced correct estimates of standard errors of beta coefficients and we could disentangle within- and between-center variance. We specified teacher variables at the first level and center variables at the second level; all models presented are random intercept models with fixed slopes. On the level of the teacher, we centered all personal and structural variables at the grand mean of the sample, but all social variables at the group mean to account for interindividual differences, as Lüdtke et al. (2009) suggest. Multi-level analyses were performed with MPlus 8 (Muthén & Muthén, 1998 - 2017). We report standardized

regression coefficients to increase interpretability and we specify proportions of variance explained by predictors at each of the two levels. For hierarchical linear modeling, we used full information maximum likelihood (FIML) to account for missing values, which performs better than multiple imputation procedures in the context of multilevel analyses (Larsen, 2011).

Results

To what extent do symptoms of emotional exhaustion differ between preschool centers?

On average, preschool teachers rated their emotional exhaustion below the midpoint of the scale (M = 2.38, SD = 1.15, range: 1–7). Before disentangling center differences from individual differences in emotional exhaustion, we pre-analyzed if there were enough meaningful differences between centers in the center-level variables. For the structural conditions, the standard deviation is a good indicator of variability between clusters (Klusmann et al., 2008). All of these variables showed substantive standard deviations, as can be seen in Table 2. Further, ICC1 and ICC2 values of the aggregated ratings on social conditions (team climate, relation to parents) suggested meaningful variations between centers as well as a moderate agreement between raters of these variables. Now, to answer our first research question, we specified a null model for emotional exhaustion. The analysis revealed an ICC1 of .058, meaning that 5.8% of the overall variance in preschool teachers' emotional exhaustion is located between centers. This indicates a small effect (LeBreton & Senter, 2008).

Table 1

Means, standard deviations, and correlations among preschool teacher-level variables.

	M (*SD*)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Emotional exhaustion[a]	2.38 (1.15)	1.00										
Personal conditions												
(2) Educational level[b]	1.89 (.68)	.01	1.00									
(3) In-service training hours[c]	8.74 (21.53)	-.03	.06*	1.00								
(4) ECEC working experience[d]	12.95 (11.55)	.09**	-.05	.04	1.00							
(5) Working hours/week	33.42 (7.61)	.02	.05	.01	-.10	1.00						
(6) Position[e]	0.59 (.49)	.05	.34**	.02	.10**	.24**	1.00					
Structural group conditions												
(7) Number of children	19.57 (8.05)	.05	-.04	-.01	.03	.04	-.07	1.00				
(8) Age of children	3.35 (1.28)	.11**	.00	.04	.13**	.01	.03	.40**	1.00			
(9) Migrant children (%)	45.85 (30.13)	.08**	-.02	.04	-.03	.05	-.02	.11**	.30**	1.00		
Social conditions												
(10) Team climate[f]	4.06 (.65)	-.37**	-.01	.08**	.02	.04	.04	.03	-.05	.03	1.00	
(11) Relation to parents[g]	4.94 (.85)	-.34**	.03	.05	.02	.06	.02	-.01	-.05	.00	.30**	1.00

Note. N ranges from 554 to 1,377; ** $p < .01$; * $p < .05$; [a] range: 1–7; [b] 0 = any level, 1 = any pedagogical/social vocational training, 2 = vocational training as preschool teacher, 3 = bachelor degree, 4 = master degree; [c] in the past year; [d] in years; [e] 0 = assistant role, 1 = leading role; [f] range: 1–5; [g] range: 1–7.

Table 2

Means, standard deviations, and correlations among preschool center-level variables.

	M (*SD*)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Emotional exhaustion[a]	2.40 (.61)	1.00										
Structural conditions												
(2) Teacher-child ratio	6.26 (1.79)	-.04	1.00									
(3) Number of teachers	16.38 (8.51)	.06	-.36**	1.00								
(4) Number of children	94.07 (44.85)	.04	-.10	.87**	1.00							
(5) Migrant children (%)	39.21 (25.17)	.07	-.05	-.09	-.25**	1.00						
(6) Planning time/week[b]	2.60 (3.16)	.02	-.21**	.11	-.19*	.19**	1.00					
(7) In-service training days/year	4.67 (1.83)	.01	-.16	.47**	.13	.21*	.30**	1.00				
(8) Time for leadership tasks (%)	72.35 (34.51)	.09	-.23**	.40**	.35**	.06	-.03	.11	1.00			
(9) Frequency of team meetings[c]	2.45 (.87)	.02	.01	-.01	.07	-.15	-.28	-.05	.07	1.00		
Social conditions												
(10) Team climate[d]	4.10 (.42)	-.35**	.03	.12	-.12	.08	.07	.13	-.10	-.12	1.00	
(11) Relations to parents[e]	4.99 (.54)	-.52**	.04	-.04	-.15*	-.03	.06	.15	-.12	-.12	.46**	1.00

Note. N ranges from 65 to 204 centers; ** $p < .01$; * $p < .05$; [a] range: 1–7 (mean per center); [b] in hours; [c] 1 = several times a week, 2 = once a week, 3 = several times a month, 4 = once a month, 5 = less often, 6 = never; [d] range: 1–5 (mean per center); [e] range: 1–7 (mean per center).

How are personal conditions related to symptoms of emotional exhaustion?

To answer our second research question, we entered all personal job conditions of preschool teachers into a first model (see table 3, model 1). The standardized coefficients help to understand and compare unique effects of single variables. We only found a statistically significant coefficient for working experience in ECEC settings (β = .09). This means, when all other personal variables were held constant, an increase of one standard deviation in years of preschool teachers' ECEC working experience was associated with an increase of .09 in preschool teachers' emotional exhaustion. All predictor variables together explained 1% of the variance of the teacher-level, but the model was not statistically significant.

How are structural conditions related to symptoms of emotional exhaustion?

To respond to our third research question, in addition to personal conditions on the level of the preschool teacher, we also entered structural job conditions both on the individual- and center-level into the model (see table 3, model 2). Of the preschool teacher-level variables, again working experience in ECEC settings was a statistically significant coefficient (β = .08). Further, we found an effect of one of the structural group conditions, namely children's age (β = .08), meaning when all other personal and structural variables were held constant, an increase of one standard deviation in the age of children a teacher cares for was associated with an increase of .08 in preschool teachers' reported emotional exhaustion. None of the center variables was associated with teacher exhaustion. All predictor variables together statistically significantly explained 3% of the variance of the teacher-level. The explained variance of the center-level was 7%, but the model was not significant.

Table 3

Preschool teachers' emotional exhaustion: Results from multilevel modeling.

	Model 1		*Model 2*		*Model 3*	
	β	SE (β)	β	SE (β)	β	SE (β)
Center level						
Structural conditions						
Teacher-child ratio			-.07	.15	-.04	.11
Number of teachers			-.05	.30	.16	.17
Number of children			-.04	.24	-.28	.14
Migrant children			-.07	.19	-.12	.12
Planning time			-.11	.16	-.08	.10
In-service training days			.04	.20	.10	.11
Time for leadership tasks			.16	.17	.07	.10
Frequency of team meetings			.13	.14	.01	.09
Social conditions						
Team climate					-.34**	.11
Relation to parents					-.74**	.09
Teacher level						
Personal conditions						
Educational level	.01	.03	.01	.03	.00	.03
In-service training hours	-.04	.03	-.05	.03	-.01	.03
ECEC working experience	.09**	.03	.08**	.03	.11**	.03
Working hours/week	.02	.05	.01	.04	.04	.04
Position	.04	.03	.03	.03	.06	.03
Structural group conditions						
Number of children			.03	.04	.06	.03
Age of children			.08*	.04	.04	.03
Migrant children			.09	.05	.09*	.04
Social conditions						
Team climate					-.32**	.03
Relation to parents					-.19**	.03
Explained variance						
Teacher level	.01	.01	.03*	.01	.17**	.02
Center level			.07	.09	.80**	.11

Note. Model 1 = model only with personal characteristics as predictor; Model 2 = model with personal characteristics and structural conditions as predictor; Model 3 = full model; ** $p < .01$; * $p < .05$; grand-mean centering of personal and structural variables, group-mean centering of social variables.

What additional role do social conditions play in relation to emotional exhaustion?

Our last research question concerned the additional role of social job conditions. To shed light on this issue, we specified a full model and entered all variables, including the social conditions, on both preschool teacher- and center-level simultaneously into the model (see table 3, model 3). The results show that on both levels perceived team climate as well as relation to parents was associated with preschool teachers' emotional exhaustion. In more detail, when all other variables were held constant, an increase of one standard deviation in the (positive) perception of the team climate in his or her center was associated with a decrease of .32 (β = -.32) in the preschool teacher's emotional exhaustion. Similarly, an increase of one standard deviation in preschool teachers' perception of the relation to parents was associated with a decrease of .19 (β = -.19) in his or her reported emotional exhaustion. On the level of the center, results showed in the same direction: An increase of one standard deviation in preschool teachers' perception about how well the team climate functions was associated with a decrease of .34 (β = -.34) in the reported emotional exhaustion within this center. Further, an increase of one standard deviation in preschool teachers' perception about the relation to parents within their center was associated with a decrease of .74 (β = -.74) in the reported emotional exhaustion within this center.

In this last model, the effect of working experience in ECEC settings remained stable (β = .11). However, the age of children in a group was no longer a significant structural variable on the level of the teacher, but the proportion of migrant children in a group (β = .09). The more migrant children in the group, the more the individual teacher felt exhausted. None of the structural center characteristics became significant. In general, this model accounted for 17% of the variance on the preschool teacher-level and for 80% of the variance on the center-level.

Discussion

To add to the scarce scientific literature on burnout or exhaustion symptoms of preschool teachers and to suggest possible intervention approaches for policy and practice, this study aimed at understanding how ECEC working conditions are related to preschool teachers' emotional exhaustion in Germany. Thereby, we focused on four research questions: we wanted to know the extent to which preschool centers differ in symptoms of emotional exhaustion, the relationship between personal job conditions and exhaustion levels, and the additional role that structural and social conditions of the work environment play.

Between-center variability in preschool teachers' emotional exhaustion

The current study is one of the first to distinguish between the center- and teacher-level when analyzing the degree of emotional exhaustion in preschool teachers, clarifying the role of belonging to a certain ECEC center. Our findings demonstrated that levels of emotional exhaustion indeed differed between preschool centers, but most of the variability was ascribed to individual factors. These findings support the claim that there is some shared element of burnout symptoms within institutions (see Blöchliger & Bauer, 2017; Friedman, 1991; Halbesleben & Leon, 2014), for example due to shared working conditions or emotional contagion (see Hatfield, Cacioppo, & Rapson, 1994; Klusmann et al., 2008), that also applies to German preschool centers. Thereby, our findings revealed a higher influence of the preschool center than has been found for the German school context (Klusmann et al., 2008). However, it is important to keep in mind that primary and secondary teachers in Germany are generally assigned to schools through a central administrative office. This results in a rather randomized composition of the faculty. In contrast, German preschools are free to choose whom they employ; they might select employees with distinct characteristics (e.g., attitudes or skills) or only have a specific applicant clientele to choose from (e.g., socio-demographic background). This self-selection process has the potential to cluster more

similar preschool teachers within the same center and thus artificially increasing the center effect. Nevertheless, Blöchliger and Bauer (2017) found even more between-center differences in a Swiss sample. Therefore, it is still reasonable to assume that there is at least some shared part ascribable to the center, which also justifies intervention at this level.

Personal and environmental job conditions and their relation to preschool teachers' emotional exhaustion

Next, we examined a wide range of personal and environmental job conditions of preschool teachers to enrich the scarce literature on this topic. The current study demonstrated that most of the personal job conditions under investigation, such as education, training, working hours, and position, that often depend on individual decisions did not play a role in the statistical prediction of emotional exhaustion. Only preschool teachers' ECEC working experience was positively associated with exhaustion symptoms. The little research on the effect of ECEC working experience on burnout symptoms that has been done so far used much smaller samples and revealed mixed findings (Blöchliger & Bauer, 2017; Manlove, 1993; Viernickel et al., 2013). Therefore, our study makes an important contribution to clarifying the role of working experience. It suggests that the long-term exposure to the ECEC working environment is one reason why preschool teachers deplete over time, which is why the working environment deserves attention.

When investigating the role of the work environment, we first focused on structural conditions of centers and groups. Interestingly, we found that none of the structural conditions on the center-level was related to emotional exhaustion of preschool teachers. On the level of the individual teacher's group environment, the results were not consistent. We found a small effect of children's increasing age on emotional exhaustion; however, it disappeared when we entered the social conditions into the model. Instead, a small negative effect of the increasing proportion of migrant children was revealed. We can only speculate

about underlying mechanisms. Perhaps the results would have been a bit clearer if we had data on the teacher-child-ratio in the group. Since children's age was positively correlated with the number of children in the group (see *Table* 1) and age is usually also associated with fewer preschool teachers per child in the group, and the proportion of migrant children was positively correlated with both the number and age of children (see *Table* 1), the age and migration effect on preschool teachers' degree of exhaustion could have disappeared if we had controlled the teacher-child-ratio in the group. Overall, however, also the structural environmental conditions in ECEC centers and groups could explain only a very small amount of the variability in preschool teachers' exhaustion levels.

In a final step, we examined additional associations between exhaustion symptoms and social conditions of the preschool work environment, including the perceived team climate with colleagues and the relation to parents. Both groups of people represent important social counterparts in the everyday work life of preschool teachers with diverging roles, colleagues as working partners at eye level, parents as educational partners and customers. On the level of the center, social conditions were able to explain a very large part of the overall variability between centers, in particular the perceived relation to parents. But also for the preschool teacher-level, a better perceived team climate as well as more pleasant relations to parents were associated with less exhaustion symptoms of teachers. Therefore, our findings are in line with research literature that uncovers the general strong influence of social aspects of the workplace on worker's well-being (e.g., González-Romá et al., 2009; Levecque et al., 2014; Viswesvaran et al., 1999) and now also emphasizes the great influence of social conditions on burnout experiences in the ECEC sector.

Limitations and future research

As in every research project, there are several limitations to the present study resulting in new ideas for future research. First, the data was cross-sectional in nature. This

means we measured job conditions and preschool teachers' emotional exhaustion concurrently and we did not observe the effect of one on the other. Therefore, we cannot make a conclusive statement about the causal relationship between job conditions and exhaustion levels and a reversed relationship is also possible. For example, more exhausted preschool teachers might also experience parent interactions as more negative than less exhausted colleagues. Second, the full model still revealed a large amount of unexplained variance between individual preschool teachers, namely 83%. This means that there are still many factors that explain differences between individuals and their symptoms of emotional exhaustion that were not captured by our research. However, the amount of explained variance at the individual level corresponds to findings of related research (e.g., Blöchliger & Bauer, 2017; Klusmann et al., 2008). Further, it has been shown that many of the differences between individuals' burnout symptoms are due to personality traits, especially due to varying levels of neuroticism (e.g., Langelaan, Bakker, van Doornen, & Schaufeli, 2006; Manlove, 1993). As the role of personality traits was not the focus of this investigation, we did not include respective variables into the data collection or analyses. Third, the data concerning the structural job conditions on the center-level, that was drawn from the center manager survey and baseline data of the program, was collected a few months before or after the data collection of the remaining data drawn from the preschool teacher survey, as presented in the methods section. Thus, there is a possibility that conditions may have changed in the meantime. However, structural characteristics are rather stable and the periods between the time points of data collection were short. Concerning the sources and also content of data, future studies could enrich the data by including information of parents (e.g., socio-economic background, self-reports on perceived relationship to preschool teachers) to deeper understand associations of exhaustion symptoms with the relation to parents. Interesting and insightful would also be the inclusion

of the individual perception of the adequacy of preschool teachers' group and center structural conditions and more objective data about exhaustion levels (e.g., physical symptoms, days of absence) to examine whether the relationships found also apply to this kind of data.

Finally, our sample is not completely representative of the average German preschool because the program Sprach-Kitas focused on larger preschools and high proportions of children form disadvantaged families and centers had to be willing to participate in such a program in the first place, thereby demonstrating their openness for quality development. However, our sample is much larger than those of studies with related contents (e.g., Blöchliger & Bauer, 2017; Viernickel et al., 2013) and we accounted for many differences to an average German preschool by including these data into the analyses (e.g., center size, proportion of migrant children). Further, through the increased variance in these variables the identification of potential effects in these variables was facilitated. Of course, our sample is also not completely equivalent to those of other countries' ECEC systems. However, the results of this study have emerged from the background of a major national ECEC shift towards professionalization and quantitative as well as qualitative expansion and as such, they can also inform other countries that are undergoing similar changes.

Implications for policy and practice

From the results of this study, important intervention approaches for policy and practice can be derived to decrease exhaustion levels of preschool teachers. First of all, our finding that the center a preschool teacher works in influences how exhausted the individual feels justifies interventions in particularly affected preschools and not just with affected individuals or individuals at risk. Thereby, the focus of improvements of preschools' working conditions is oftentimes only on structural aspects, such as increasing the teacher-child-ratio. And of course, it is well known that there are several structural aspects that have

a positive effect on the quality in preschool centers (Slot, 2018), which therefore should not be completely neglected. However, our study demonstrated very clearly that concerning preschool teachers' exhaustion levels those working conditions that mattered the most were of social nature. Social experiences with colleagues and parents really made the difference, especially on the level of the center. Therefore, policies and objectives of support should also target these issues, even though they might require longer-term involvement and more indirect intervention methods.

To improve the team climate within an ECEC center, the center manager plays an important role and sets crucial impulses (see also Klaudy, Köhling, Micheel, & Stöbe-Blossey, 2016). The manager can initiate discussions in team meetings or hire an external coach to address vulnerabilities in the team. It would also be helpful if more public funds were available to promote this kind of work. Of course, developing shared visions, a supportive working style in the group, better team cohesion, and good communication with each other needs time and patience. But because this study demonstrated consistent connections to preschool teachers' exhaustion levels and others also demonstrated the value of good team collaboration for the quality of work in ECEC centers (Resa et al., 2018; Wertfein, Müller, & Danay, 2013) as well as connections between the well-being of preschool teachers and higher quality-care (e.g., Gerber et al., 2007; Hamre & Pianta, 2004; Jennings, 2015), it is worth the effort. Colleagues should be perceived as powerful support in the daily challenges and not as additional stressors (see also Viswesvaran et al., 1999).

The other group of people preschool teachers are in close contact with are parents. Cooperation with families is an important task of preschool teachers and also a quality criterion in the ECEC sector (Kluczniok & Roßbach, 2014). However, the relationship is complicated because parents are educational partners and service recipients. If parents display high demands or delegate their own tasks in the upbringing of the child to the

preschool teacher, the contact of teachers with parents gets burdensome (Jungbauer & Ehlen, 2013). In Germany, the topic of parental cooperation is often only mentioned on the fringes of the vocational training for preschool teachers (Friederich, 2011), so preschool teachers can quickly feel overwhelmed. Since this study demonstrated that preschool teachers are more exhausted when they experience the relationship with parents as uncomfortable, stressful, and conflictual, they should be better trained and supported for being in contact with parents both in their training and also during their professional life. Case discussions in team meetings and individual support by the center manager are also helpful mechanisms to deal with challenging encounters and to unburden as well as empower staff members.

Conclusions

This research project aimed at closing a research gap by gaining a deeper understanding about which conditions at the workplace matter the most for preschool teachers' emotional exhaustion. Considering the existing literature and our outlined findings, we conclude that German ECEC teachers' symptoms of exhaustion differ between centers, but to a much lesser degree than between individuals. Further, we found that professionals with more ECEC working experience reported higher levels of emotional exhaustion, indicating that prolonged exposure to the ECEC work environment is associated with increasing fatigue and the risk of burnout. From all the job conditions under investigation, we found that social working conditions were most relevant: if preschool teachers perceived the team climate and relations to parents as challenging and strenuous, they also tended to feel more exhausted in their jobs.

These results do not just contribute an important piece of work to the research literature on emotional exhaustion of preschool teachers. They also have the potential to fuel the public and political debate around the best strategies to enhance, improve, and professionalize the ECEC system in a way that it fosters teachers' well-being and

engagement and, thereby, ensures good quality care for our children. According to our analyses, interventions and preventions tackling exhaustion in preschools should aim at enhancing social climates and at fostering good collaboration between teachers and parents as well as colleagues. In contrast, focusing merely on new regulations, policies, and funding strategies that tackle structural conditions does not seem to be as effective as often debated in the public realm.

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Appendix B – Manuscript for Study 2

STUDY 2

Burnout in der Kita und der Zusammenhang zu Aspekten der Arbeitszufriedenheit

[Burnout in daycare centers and the association with aspects of job satisfaction]

Trauernicht, M., Michels, N., & Anders, Y. (under review). Burnout in der Kita und der Zusammenhang zu Aspekten der Arbeitszufriedenheit.

Zusammenfassung

Das Handlungspotenzial frühpädagogischer Fachkräfte nimmt eine bedeutende Rolle für die Qualität frühkindlicher Betreuung ein. Daher ist es alarmierend, dass gerade diese Berufsgruppe besonders betroffen von arbeitsbezogenen Burnout-Symptomen ist. Die Zufriedenheit mit verschiedenen Arbeitsaspekten ermöglicht Hinweise auf potenzielle Ursachen für Burnout-Symptome und damit verbundene Interventionsmöglichkeiten. Die vorliegende Studie untersucht daher die Zusammenhänge zwischen sozialen, kognitiv-intellektuellen und instrumentell-materiellen Aspekten von Arbeitszufriedenheit, verstanden als subjektiv-emotionale Passung zwischen eigenen Vorstellungen und der Arbeitsumgebung, und den Burnout-Dimensionen emotionale Erschöpfung, Depersonalisation und verringerte Leistungsfähigkeit. Datengrundlage bildet eine Online-Befragung von 346 frühpädagogischen Fachkräften aus Berliner Kitas. Die Analysen zeigten, dass eine geringere Zufriedenheit mit der Zusammenarbeit im Team sowie mit den Eltern mit höheren Werten auf allen drei Burnout-Dimensionen einhergingen. Daneben weisen die Analysen auf entgegengesetzte Zusammenhänge zwischen emotionaler Erschöpfung und der Zufriedenheit mit den Aufstiegschancen, den Arbeitszeiten und dem Arbeitslohn hin. Die Ergebnisse werden in Bezug auf Implikationen und Interventionsmöglichkeiten für die Praxis diskutiert.

Stichwörter: Burnout-Symptome; frühpädagogische Fachkräfte; Arbeitszufriedenheit; Zusammenarbeit im Team; Elternzusammenarbeit

Abstract

The capability of early childhood professionals plays an important role in the quality of early childhood care. It is therefore alarming that this professional group is particularly affected by work-related burnout symptoms. Satisfaction with various job aspects provides indications of potential causes for burnout symptoms and associated intervention options. Therefore, the present study examines the relations between social, cognitive-intellectual, and instrumental-material aspects of job satisfaction, understood as subjective emotional fit between one's ideas and the actual work environment, and the burnout dimensions emotional exhaustion, depersonalization, and reduced personal accomplishment. The data stems from an online questionnaire filled out by 346 early childhood professionals from Berlin daycare centers. Analyses showed that lower satisfaction with collaboration with the team and with parents were associated with higher values on all three burnout dimensions. Further, we found negative relations between emotional exhaustion and satisfaction with career opportunities, working hours, and wages. The results are discussed in terms of implications and intervention options for practice.

Keywords: burnout symptoms; early childhood professionals; job satisfaction; team collaboration; collaboration with parents

Burnout in der Kita und der Zusammenhang zu Aspekten der Arbeitszufriedenheit

Viele frühpädagogische Fachkräfte nehmen ihre Arbeit als belastend und erschöpfend wahr und entwickeln Burnout-Symptome (z. B. Jungbauer & Ehlen, 2015; Viernickel, Voss, Mauz, Gerstenberg & Schumann, 2013). Das ist insofern alarmierend, da die psychische Konstitution von Fachkräften direkte Auswirkungen auf die Qualität der Interaktionen zwischen Fachkraft und den zu betreuenden Kindern haben kann (Hamre & Pianta, 2004). Die Qualität der frühkindlichen Bildung und Betreuung, insbesondere die Interaktionsqualität, beeinflusst wiederum, ob die Entwicklung von Kindern kurz- und langfristig positiv beeinflusst werden kann (Anders, 2013), einem wichtigen Mechanismus um Bildungsungleichheit in der Gesellschaft entgegenzusteuern. Außerdem wirkt sich eine hohe Fachkräfte-Fluktuation (Linkert, Bäuerlein, Stumpf & Schneider, 2013) sowie zu wenige anwesende Fachkräfte (Slot, 2018) negativ auf die Qualität der pädagogischen Arbeit aus; beide Phänomene zählen auch zu den Folgen von ausgebranntem Personal (Swider & Zimmerman, 2010). Aus diesem Grund sollte das berufliche Wohlbefinden von frühpädagogischen Fachkräften mehr im Zentrum der Forschung und der öffentlichen Debatte stehen: zum Wohl der Fachkräfte, zur Attraktivität des Arbeitsbereichs und nicht zuletzt zum Wohl der zu betreuenden Kinder. Eng mit Burnout-Erfahrungen verbunden ist die Arbeitszufriedenheit von Personen (Tsigilis, Koustelios & Togia, 2004). Sie gibt einen Hinweis darauf, in welchen Bereichen Personen eine Diskrepanz zwischen eigenen Wünschen oder Werten und der wahrgenommenen Arbeitswirklichkeit sehen (Locke, 1969). Die vorliegende Studie untersucht daher, wie die Zufriedenheit mit verschiedenen Aspekten der Arbeit von frühpädagogischen Fachkräften mit Burnout-Symptomen zusammenhängen. Die Ergebnisse können wichtige Hinweise für Reformen und Interventionen geben, um negativen Folgen für Fachkräfte und Kinder vorzubeugen.

Burnout

Die wissenschaftliche Auseinandersetzung mit dem Thema Burnout begann in den 70er Jahren des letzten Jahrhunderts (Freudenberger, 1974; Maslach, 1976) und gewann seitdem immer mehr an Bedeutung. Schon sehr früh wurde deutlich, dass frühpädagogische Fachkräfte besonders betroffenen von Burnout-Symptomen sind (z. B. Manlove, 1993; Maslach & Pines, 1977). Burnout findet seinen Ausdruck in drei Dimensionen: emotionaler Erschöpfung, Depersonalisation und verringerter Leistungsfähigkeit (Maslach, Schaufeli & Leiter, 2001). Die Dimension der emotionalen Erschöpfung gilt als zentral und wurde bisher am meisten untersucht (Maslach, Schaufeli, & Leiter, 2001). Sie beschreibt einen inneren Zustand der Überforderung und Leere in Bezug auf eigene emotionale und physische Ressourcen (Maslach, Schaufeli, & Leiter, 2001). Die zweite, interpersonale Komponente von Burnout, Depersonalisation, findet ihren Ausdruck in negativen oder sogar dehumanisierenden Einstellungen und inneren Abgrenzung gegenüber (den Menschen bei) der Arbeit (Maslach, Schaufeli, & Leiter, 2001). Die dritte Dimension von Burnout umfasst eine subjektiv wahrgenommene verringerte Arbeitsleistungsfähigkeit; demnach empfinden ausgebrannte Beschäftigte, dass sie weniger leisten, weniger können und ineffektiver sind (Maslach, Schaufeli, & Leiter, 2001). Engagement bei der Arbeit wird als Gegenpol von Burnout verstanden (Maslach, Schaufeli, & Leiter, 2001).

Ursachen von Burnout

Burnout entsteht aufgrund von chronischem Stress an der Arbeit (Maslach, Schaufeli, & Leiter, 2001). Ein prominenter Ansatz aus der Organisationspsychologie, der auch von der Burnout-Forschung aufgegriffen wurde, betrachtet die Passung zwischen Person und Arbeitsumgebung (*Person-Environment Fit*: Maslach, Schaufeli, & Leiter, 2001; Tong, Wang & Peng, 2015). Demnach kann es zu Burnout-Symptomen kommen, wenn individuelle und umgebungsbezogene Faktoren bei der Arbeit in stetiger Unstimmigkeit

zueinanderstehen. Dazu gehören beispielsweise eine geringe finanzielle Belohnung bei als komplex empfundenen Arbeitsaufwand oder Konflikte im Kollegium bzw. mit Leistungsempfangenden (Maslach, Schaufeli, & Leiter, 2001), in frühkindlichen Bildungsinstitutionen Kinder beziehungsweise deren Familien. Hinweise über Unstimmigkeiten zwischen Person und Arbeitsumgebung können über die Arbeitszufriedenheit erhalten werden (Furnham & Schaeffer, 1984).

Arbeitszufriedenheit

Arbeitszufriedenheit bezeichnet einen angenehmen emotionalen Zustand, der sich aus der positiven Einschätzung der Arbeitssituation in Bezug auf eigene arbeitsbezogene Werte, Wünsche und Ziele ergibt (Locke, 1969; Roedenbeck, 2008). Sie entspricht somit dem subjektiven Pendant zum *Person-Environment Fit* und eignet sich besonders bei der Ursachensuche von Burnout. Weil die Arbeitszufriedenheit nicht in allen Bereichen gleichermaßen hoch ist (Roedenbeck, 2008) und um der Komplexität arbeitsbezogener Situationen gerecht zu werden, liegt es nahe, Arbeitszufriedenheit in verschiedene Domänen zu unterteilen (siehe Penn, Romano & Foat, 1988). Roedenbeck (2008) identifizierte in einer Meta-Analyse vier Facetten der beruflichen Situation von Personen, die er mit der erlebten Arbeitszufriedenheit in Verbindung bringt: (1) eine soziale, unter die jegliche zwischenmenschliche Aspekte fallen, (2) eine kognitiv-intellektuelle, die die Sinnhaftigkeit der eigenen Arbeit beurteilt sowie die Bewertung der Anforderungen und Entwicklungschancen umfasst, (3) eine instrumentell-materielle, welche die Zufriedenheit mit der Bezahlung, Arbeitszeiten, Arbeitsplatzgestaltung, aber auch mit der Arbeit an sich bewertet, und (4) eine affektiv-emotionale. Letztere umfasst die inneren Zustände einer Person und, im Gegensatz zu den ersten drei Facetten, weniger äußere Umstände und Arbeitssituationen; Beispiele sind das Belastungsempfindungen, aber auch Stolz auf und

Spaß an der Arbeit. Da diese Facette stark an die Merkmale von Burnout beziehungsweise Engagement erinnert, wird sie in dieser Studie nicht weiter berücksichtigt.

Arbeitszufriedenheit und Burnout

Dass das Erleben von Burnout-Symptomen mit einer niedrigeren Arbeitszufriedenheit einhergeht, gilt als unumstritten (z. B. Lee & Ashforth, 1996; Tsigilis, Koustelios & Togia, 2004). Insgesamt gibt es allerdings nur wenige Studien, die Zusammenhänge zwischen Aspekten von Arbeitszufriedenheit und allen drei Dimensionen von Burnout untersucht haben (Ausnahmen sind z. B. Penn et al., 1988; Pikó & Mihálka, 2017). Keine uns bekannte Studie betrachtete bisher die Zufriedenheit bezüglich ausgewählter Arbeitsaspekte von frühpädagogischen Fachkräften. Daher untersucht die vorliegende Studie den Zusammenhang zwischen Aspekten der sozialen, kognitiv-intellektuellen und instrumentell-materiellen Facette von Arbeitszufriedenheit und den Burnout-Dimensionen emotionale Erschöpfung, Depersonalisation sowie verringerte Leistungsfähigkeit in einer Stichprobe frühpädagogischer Fachkräfte in Berlin.

Methode

Ablauf und Stichprobe

Für die zwischen Mai und Juni 2019 online durchgeführte Querschnittsuntersuchung wurden alle frühpädagogischen Einrichtungen in Berlin angeschrieben, die zu diesem Zeitpunkt mit gültiger E-Mail-Adresse in der Berliner Kita-Datenbank gelistet waren (N = 2 292). Sie wurden gebeten, selbst an der Befragung teilzunehmen sowie den Link an das Kollegium weiterzuleiten. Die Rücklaufquote betrug 17 %. Die für die Analysen dieser Studie bedeutsamen Variablen umfassten ein Inventar zur Messung von Burnout-Symptomen, Items zur Zufriedenheit mit verschiedenen Arbeitsaspekten sowie das Alter und Geschlecht der Befragten; alle Instrumente werden weiter unten ausführlich vorgestellt.

Von ursprünglich 478 teilnehmenden Personen wurden Fälle ohne jegliche Daten (n = 20), ohne Daten auf dem Burnout-Fragebogen beziehungsweise zumindest auf einer Subskala dessen (n = 103) sowie jene, bei denen es sich nicht um frühpädagogische Fachkräfte, sondern z. B. um Mitarbeitende der Verwaltung handelte (n = 9), ausgeschlossen. Die endgültige Stichprobe umfasste daher 346 frühpädagogische Fachkräfte (88 % Frauen; M_{Alter} = 43.13, SD_{Alter} =11.07, Range: 19-66 Jahre) aus 305 Einrichtungen. Von den teilnehmenden Fachkräften waren 43 % Leitungskräfte. Insgesamt gaben 21 % an, wegen Burnout bereits schon einmal krankgeschrieben worden zu sein. Der höchste Bildungsabschluss der Mehrzahl der Befragten war eine Ausbildung zur Erzieherin/zum Erzieher (71 %); 23 % hatten einen akademischen Abschluss.

Erhebungsinstrumente und Analyseverfahren

Burnout-Symptome

Burnout-Symptome wurden mithilfe des weit verbreiteten *Maslach Burnout Inventars* (Maslach & Jackson, 1981) in der deutschen Übersetzung von Büssing und Perrar (1992)[4] mit den Skalen *emotionale Erschöpfung*, *Depersonalisation* und *verringerte Leistungsfähigkeit* erfasst. Jedes der 22 Items besteht aus einer Aussage (z. B. „Ich fühle mich durch meine Arbeit ausgebrannt“[5]) mit Zustimmungsmöglichkeiten von 0 = *überhaupt nicht* über 3 = *mäßig* bis 6 = *sehr stark*. Die interne Konsistenz in unserer Stichprobe war gut bis akzeptabel (Cronbach’s α = .60-.89) und damit vergleichbar mit den Ergebnissen von Büssing und Perrar (1992). Der individuelle Wert auf einer Skala wurde aus den gemittelten

[4] Es wurden kleine Änderungen zur besseren Verständlichkeit vorgenommen; z. B. wurde der Begriff *Patienten* mit *Menschen* ersetzt.

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Item-Werten gebildet, wenn mindestens die Hälfte aller Items dieser Skala beantwortet wurden.

Aspekte von Arbeitszufriedenheit

Alle Items zur Abfrage der Aspekte von Arbeitszufriedenheit wurden an die Formulierung der Single-Item-Skala zur Erfassung der Allgemeinen Lebenszufriedenheit von Beierlein, Kovaleva, László, Kemper und Rammstedt (2014) angepasst, nämlich „Wie zufrieden sind Sie mit […]“. Für die soziale Facette wurde die Arbeitszufriedenheit für die *Zusammenarbeit im Team* und die *Zusammenarbeit mit den Eltern* erfasst. Für die kognitiv-intellektuelle Facette wurde die Zufriedenheit mit *Aufstiegschancen* und *Fortbildungsmöglichkeiten* erhoben. Aspekte der instrumentell-materiellen Facette schlossen die Zufriedenheit mit der *Ausstattung in der Einrichtung*, der *pädagogischen Arbeit in der Einrichtung*, den *Arbeitszeiten* und dem *Arbeitslohn* ein. Möglich wäre hier auch die Zuordnung der Zufriedenheit mit der *Zusammenarbeit mit den Eltern* gewesen, da sie inhärente Arbeitsaufgabe von frühpädagogischen Fachkräften ist (Jugend- und Kultusministerkonferenz, 2004). Alle Antwortkategorien reichten von 0 = *überhaupt nicht zufrieden* bis 6 = *völlig zufrieden*.

Kontrollvariablen

Da sowohl das Alter als auch das Geschlecht einen auf Burnout-Erfahrungen haben (Brewer & Shapard, 2004; Purvanova & Muros, 2010), wurden beide Variablen als Kontrollvariablen in die Analysen einbezogen.

Statistische Analysen

Die Datenaufbereitung sowie vorläufige und korrelative Analysen wurden mit IBM SPSS Statistics 25 vorgenommen. Um den Zusammenhang zwischen den Aspekten der Arbeitszufriedenheit und Burnout-Symptomen frühpädagogischer Fachkräfte zu untersuchen, wurden drei multiple Regressionsanalysen mit Mplus8 durchgeführt. Die

Burnout-Dimensionen dienten jeweils als abhängige Variablen, die Aspekte der Arbeitszufriedenheit gingen als Prädiktoren in die Analysen ein und Alter sowie Geschlecht wurden als Kontrollvariablen behandelt. Um Personen mit fehlenden Werten zu berücksichtigen, wurde auf *full information maximum likelihood*-Schätzer mit robusten Standardfehlern zurückgegriffen; Standardfehler wurden mit der Option TYPE = COMPLEX an die verschachtelte Datenstruktur angepasst.

Ergebnisse

Die Ergebnisse der Analysen zeigten, dass die erlebte emotionale Erschöpfung der untersuchten frühpädagogischen Fachkräfte signifikant mit einer geringeren Zufriedenheit mit der Zusammenarbeit im Team (β = -.16), mit der Zusammenarbeit mit den Eltern (β = -.18), mit den Aufstiegschancen (β = -.19), mit den Arbeitszeiten (β = -.13) und mit dem Arbeitslohn (β = -.20) einherging. Von den Kontrollvariablen spielte nur das Alter der Befragten eine Rolle (β = -.13); demnach gaben jüngere Fachkräfte an erschöpfter zu sein als ältere. Das Modell erklärte insgesamt 31 % der Varianz an emotionaler Schöpfung auf (siehe Tabelle 1).

Depersonalisationserfahrungen wurden mit einer geringeren Zufriedenheit mit der Zusammenarbeit im Team (β = -.23) sowie mit der Zusammenarbeit mit den Eltern (β = -.14) in Verbindung gebracht, allerdings mit keinem anderen Aspekt der Arbeitszufriedenheit. Hier spielte neben dem Alter (β = -.20) auch das Geschlecht (β = .11) eine Rolle. Demnach gaben jüngere Fachkräfte und Männer höhere Depersonalisations-Symptome an. Das Modell klärte 23 % der Varianz auf (siehe Tabelle 1).

Die Dimension der verringerten Leistungsfähigkeit konnte ebenfalls mit einer geringeren Zufriedenheit mit der Zusammenarbeit im Team (β = -.23) und mit den Eltern (β = -.22) assoziiert werden. Weder das Alter noch das Geschlecht der Befragten zeigte einen Einfluss. Insgesamt konnten 23 % der Varianz aufgeklärt werden (siehe Tabelle 1).

Deskriptive Werte und Korrelationen zwischen Burnout-Dimensionen, Aspekten der Arbeitszufriedenheit und Kontrollvariablen sind im elektronischen Supplement (Tabelle A) zu finden.

Tabelle 1

Regressionsmodelle für verschiedene Aspekte von Arbeitszufriedenheit auf Burnout-Dimensionen.

	Emotionale Erschöpfung	Depersona-lisation	Verringerte Leistungs-fähigkeit
	β (*SE*)	β (*SE*)	β (*SE*)
Soziale Facette			
Zusammenarbeit im Team	-.17** (.06)	-.23** (.06)	-.23** (.07)
Zusammenarbeit mit den Eltern[a]	-.18** (.05)	-.14** (.05)	-.22** (.05)
Kognitiv-intellektuelle Facette			
Aufstiegschancen	-.19** (.06)	-.08 (.07)	-.08 (.07)
Fortbildungsmöglichkeiten	.06 (.06)	-.04 (.06)	-.08 (.06)
Instrumentell-materielle Facette			
Ausstattung der Einrichtung	.04 (.05)	.08 (.06)	.11 (.06)
Pädagogische Arbeit der Einrichtung	-.07 (.07)	-.07 (.07)	-.07 (.07)
Arbeitszeiten	-.13* (.05)	-.04 (.06)	-.07 (.06)
Arbeitslohn	-.20** (.06)	-.07 (.06)	.05 (.07)
Kontrollvariablen			
Alter	-.13** (.05)	-.20** (.05)	-.05 (.05)
Geschlecht[b]	-.02 (.05)	.11* (.05)	.04 (.04)
Modellgüte			
R^2	.31**	.23**	.23**

Anmerkungen. [a]Als elementare Arbeitsaufgabe frühpädagogischer Fachkräfte kann dieser Aspekt auch als instrumentell-materielle Facette betrachtet werden; [b]Kodierung: 0 = weiblich, 1 = männlich; $N = 346$. * $p < .05$, ** $p < .01$.

Diskussion

Um Hinweise für arbeitsplatzbezogene Interventionen zur Vorbeugung von Burnout-Symptomen zu generieren, untersuchte diese Studie Zusammenhänge zwischen verschiedenen Aspekten der Arbeitszufriedenheit frühpädagogischer Fachkräfte und den drei gängigen Burnout-Dimensionen. Die Ergebnisse dieser Studie weisen insgesamt auf die große Bedeutung der Zusammenarbeit mit dem Team und mit den Eltern hin: Wenn die eigenen Erwartungen an die Zusammenarbeit nicht mit der empfundenen Arbeitsrealität zusammenhing, gaben die untersuchten frühpädagogischen Fachkräfte höhere Burnout-Symptome auf allen drei Dimensionen an. Depersonalisationserfahrungen und eine wahrgenommene verringerte Leistungsfähigkeit standen sogar ausschließlich mit diesen beiden Aspekten in Beziehung. Emotionale Erschöpfung, Kernsymptom von Burnout, konnte außerdem mit weniger Zufriedenheit mit Aufstiegschancen sowie mit der Arbeitszeit und dem Arbeitslohn in Verbindung gebracht werden.

Über die Rolle des Teams

Dass das soziale Arbeitsumfeld einen Einfluss auf das Wohlbefinden und die Leistung von Arbeitskräften hat, deckt sich mit den Ergebnissen aus Untersuchungen mit anderen Berufsgruppen (z. B. Skaalvik & Skaalvik, 2009; Viswesvaran, Sanchez & Fisher, 1999). Im Kita-Kontext ist es dabei wichtig zwischen der Rolle des Teams und der Eltern am Arbeitsplatz zu differenzieren. Ein Team ist ein formaler Zusammenschluss von Personen zur Lösung einer Aufgabe (Gellert & Nowak, 2005). In Kitas besteht diese gemeinsame Aufgabe in der optimalen Erziehung, Bildung und Betreuung der Kinder. Die Forschung der vergangenen Jahre hat deutlich gezeigt, dass die Qualität des Teamklimas und der professionelle Austausch zwischen den Teammitgliedern – und damit auch die Zusammenarbeit im Team – einen direkten Einfluss auf die Qualität der Betreuung haben (Resa, Groeneveld, Turani & Anders, 2018; Wertfein, Müller & Danay, 2013). In dieser

Studie konnte nun die Unzufriedenheit mit der Teamzusammenarbeit mit höheren Burnout-Werten in Verbindung gebracht werden. In Anlehnung an Maslach, Schaufeli und Leiter (2001) könnte dieser Mechanismus an einem geringen Teamzusammenhalt, nicht-geteilten Werten oder auch an Konflikten mit dem Kollegium liegen. Andersherum kann eine gute Zusammenarbeit im Team und damit gegenseitige soziale Unterstützung auch eine kraftvolle Ressource sein, um schwierige oder anstrengende Zeiten gut zu überstehen (Viswesvaran, Sanchez & Fisher, 1999). Für die Qualität der Arbeit, aber insbesondere auch das Wohlbefinden der Fachkräfte, sollte eine positive Teamzusammenarbeit in der Praxis besonders gestärkt werden. Damit das Team als Ressource wahrgenommen werden kann, bedarf es einer wertschätzenden Haltung und Kommunikation untereinander; diese kann durch die Einrichtungsleitung gefördert (Hitzenberger & Schuett, 2017) oder durch Supervision, Coaching sowie Entwicklungsmaßnahmen verbessert werden (Fialka, 2015).

Zusammenarbeit mit Eltern

Im Gegensatz zu Teamkolleginnen und -kollegen nehmen Eltern die Rolle von Kundinnen bzw. Kunden ein, die bestimmte Ansprüche bezüglich der Betreuung ihrer Kinder haben. Außerdem gelten sie als Bildungspartnerinnen und -partner, wobei beide Seiten die Verantwortung für die gesunde Entwicklung der Kinder in den jeweiligen Kontexten innehaben (Fröhlich-Gildhoff, 2013). Die Zusammenarbeit mit Familien stellt nicht nur ein wichtiges Kriterium qualitativer Betreuung dar (Kluczniok & Roßbach, 2014), sondern ist auch elementare Aufgabe von frühpädagogischen Fachkräften und als solche im gemeinsamen Rahmen der Länder für die frühe Bildung in Kindertageseinrichtungen fest verankert (Jugend- und Kultusministerkonferenz, 2004). Dennoch verstehen viele frühpädagogische Fachkräfte diese Arbeitsaufgabe nicht als Kern ihrer Tätigkeit (Textor, 2018).

Eltern und Fachkräfte haben ein asymmetrisches und damit nicht gleichberechtigtes Verhältnis und sie vertreten häufig unterschiedliche Sichtweisen (Cloos & Karner, 2010). Somit kann der Kontakt zu und die Zusammenarbeit mit Eltern Fachkräfte auch herausfordern und eine (zusätzliche) Belastung darstellen, wie auch die Ergebnisse dieser Studie zeigen. Jungbauer und Ehlen (2015) fanden, dass das diesbezügliche Belastungsrisiko hauptsächlich auf Konflikte, hohe Ansprüche der Eltern sowie einer Neigung Aufgaben der Erziehung und Bildung ihrer Kinder an die Fachkräfte zu delegieren zurückzuführen ist.

Die Ausgestaltung dieser Zusammenarbeit liegt auf Seiten der frühpädagogischen Fachkräfte (Friederich, 2011), weshalb sie in diesem Bereich gestärkt werden sollten. Elternzusammenarbeit wird allerdings in fachschulischen und universitären Ausbildungen oft nur am Rande thematisiert (Friederich, 2011) und frühpädagogische Fachkräfte fühlen sich kurz nach ihrer Ausbildung häufig unsicher in Themenbereichen, die außerhalb der unmittelbaren pädagogischen Arbeit am Kind liegen, darunter auch die Zusammenarbeit mit den Eltern (Dippelhofer-Stiem, 1999). Daher sollte dieses Thema sowohl in der Ausbildung als auch während der Berufsausübung stärker durch Fort- und Weiterbildungen thematisiert und geschult werden, um frühpädagogische Fachkräfte darin zu unterstützen, Elternzusammenarbeit für alle Beteiligten gelingend zu gestalten und somit möglicherweise auch die Entstehung von Burnout-Symptomen zu mindern.

Zufriedenheit mit Arbeitsstrukturen

Die untersuchten Aspekte der anderen Facetten von Arbeitszufriedenheit spielten nur zum Teil eine Rolle und auch ausschließlich für die erlebte emotionale Erschöpfung von Fachkräften. Während kein Zusammenhang zwischen der Zufriedenheit mit Fortbildungsmöglichkeiten festgestellt wurde, schienen es gerade die fehlenden Möglichkeiten für höhere Positionen und damit Zukunftsperspektiven zu sein, die frühpädagogische Fachkräfte erschöpfen und die daher verstärkt in die Karrierewege

integriert werden sollten. Die in dieser Studie festgestellte Unzufriedenheit mit dem Arbeitslohn im Zusammenhang von Erschöpfung unterstützt die Forderung nach mehr Lohn für frühpädagogische Fachkräfte (Fröhlich-Gildhoff & Weimann-Sandig, 2020). In der Burnout-Forschung wird der Arbeitslohn als Ausdruck von Wertschätzung gesehen, die bei Wegfall Burnout-Symptome fördert (Maslach, Schaufeli, & Leiter, 2001). Die Unzufriedenheit mit den Arbeitszeiten im Zusammenhang zu mehr Erschöpfung könnte darauf hindeuten, dass viele Fachkräfte aufgrund der langen Öffnungszeiten mittlerweile sehr früh anfangen, sehr lang oder in Schichtsystemen arbeiten müssen, was als Kollision mit dem Privatleben (z. B. Familienaktivitäten) erlebt werden und zur Planungsunsicherheit im Alltag beitragen könnte. Planbarere Arbeitszeitmodelle könnten hier Abhilfe schaffen.

Limitationen

Wie in wissenschaftlichen Untersuchungen üblich, weist auch die vorliegende Studie Limitationen auf. So besteht die Stichprobe nur aus Berliner Fachkräften und die Übertragung der Ergebnisse auf andere Bundesländer ist nur bedingt möglich, da sich Kontexte von Kindertagesstätten durch das in Deutschland herrschende dezentralisierte Bildungssystem zum Teil erheblich unterscheiden (Schreyer & Krause, 2016). Gleichzeitig ist deswegen aber auch eine länderspezifische Analyse hilfreich und notwendig. Des Weiteren wurden die Aspekte von Arbeitszufriedenheit mit nur einem Item erfasst, was einen erhöhten Messfehler zur Folge haben kann und die Interpretation einschränkt. Dass ältere Fachkräfte weniger von Burnout-Symptomen betroffen waren als jüngere, ist zwar im Einklang mit einer Meta-Analyse von Brewer und Shapard (2004) und könnte ein Hinweis darauf sein, dass Burnout-Symptome eher in einem früheren Karriere-Stadium auftreten. Allerdings kann der Befund in dieser Studie nicht abschließend interpretiert werden, da es auch möglich ist, dass von Burnout betroffene ältere Fachkräfte ihre Arbeitsstelle bereits verlassen haben und daher nicht mehr Teil der Stichprobe waren (siehe auch Maslach &

Leiter, 2017). Außerdem handelt es sich um eine querschnittliche Studie, die als solche natürlich keine kausalen Schlüsse zulässt; daher ist auch eine wechselseitige oder sogar entgegengesetzte Wirkrichtung zwischen den Konstrukten nicht auszuschließen.

Fazit

Auf Grundlage dieser Studie ist es gerade die subjektiv wahrgenommene Diskrepanz zwischen eigenen Erwartungen an die Zusammenarbeit im Team und mit Eltern und der wahrgenommenen Realität – also die Unzufriedenheit mit der Zusammenarbeit mit den Menschen bei der Arbeit –, die dazu führt, dass sich frühpädagogische Fachkräfte ausgelaugt fühlen, innerlich von den Menschen bei der Arbeit distanzieren und das Gefühl haben, zu wenig zu leisten. Daneben konnte die Zufriedenheit mit Aufstiegschancen, Lohn und Arbeitszeit mit der erlebten emotionalen Erschöpfung in Verbindung gebracht werden, weswegen wir uns den jüngst erschienenen Handlungsempfehlungen von Fröhlich-Gildhoff und Weimann-Sandig (2020) anschließen, die Stellung von frühpädagogischen Fachkräften zu verbessern, die ihren Ausdruck in Bezahlung, Ausbildungsqualität, angenehmeren Arbeitszeiten, Wertschätzung und Aufstiegsmöglichkeiten finden kann.

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Elektronisches Supplement

Tabelle A

Deskriptive Werte und Korrelationen zwischen Burnout-Dimensionen, Aspekten der Arbeitszufriedenheit und Kontrollvariablen.

	M (*SD*)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Burnout-Dimensionen[a]														
(1) Emotionale Erschöpfung	2.65 (1.17)	1												
(2) Depersonalisation	1.38 (.97)	.50**	1											
(3) Verringerte Leistungsfähigkeit	1.99 (.75)	.53**	.41**	1										
Aspekte der Arbeitszufriedenheit[a]														
Soziale Facette														
(4) Zusammenarbeit im Team	3.96 (1.35)	-.36**	-.36**	-.38**	1									
(5) Zusammenarbeit mit den Eltern	4.05 (1.18)	-.32**	-.26**	-.33**	.34**	1								
Kognitiv-intellektuelle Facette														
(6) Aufstiegschancen	3.71 (1.89)	-.39**	-.24**	-.21**	.27*	.13*	1							
(7) Fortbildungsmöglichkeiten	4.48 (1.55)	-.26**	-.22**	-.21**	.25**	.18**	.59**	1						
Instrumentell-materielle Facette														
(8) Ausstattung der Einrichtung	3.73 (1.43)	-.21**	-.10	-.08	.27**	.26**	.28**	.31**	1					
(9) Pädagogische Arbeit d. Einrichtung	4.06 (1.20)	-.32**	-.28**	-.29**	.60**	.31**	.31**	.31**	.43**	1				
(10) Arbeitszeiten	4.27 (1.50)	-.35**	-.21**	-.25**	.34**	.32**	.35**	.31**	.20**	.31**	1			
(11) Arbeitslohn	2.99 (1.66)	-.32**	-.13*	-.04	.06	.09	.52**	.42**	.35**	.16**	.23**	1		
Kontrollvariablen														
(12) Alter	43.13 (11.07)	-.11	-.22**	-.09	.05	.01	.02	.06	-.09	.01	-.04	-.11	1	
(13) Geschlecht[b]	.1 (.30)	-.001	.12*	.04	.03	-.03	-.03	-.02	.01	-.01	.03	-.02	-.08	1

Anmerkungen. N = 306-346; [a]Range: 0–6; [b]Kodierung: 0 = weiblich, 1 = männlich.
* $p < .05$, ** $p < .01$

Appendix C – Manuscript for Study 3

STUDY 3

Burnout undermines empathising: Do induced burnout symptoms impair cognitive and affective empathy?

Trauernicht, M., Oppermann, E., Klusmann, U., & Anders, Y. (2020). Burnout undermines empathising: do induced burnout symptoms impair cognitive and affective empathy?, *Cognition and Emotion*, https://doi.org/10.1080/02699931.2020.1806041

Abstract

Empathy is crucial for the quality of social interactions and thus highly relevant in human service professions. At the same time, people belonging to this occupational group are especially vulnerable to developing burnout symptoms. With this study, we aimed to investigate the causal link between burnout symptoms and empathy by using a novel experimental design. Our participants (N = 355; 44.5% women; M_{age} = 36.37) filled out an online questionnaire; in an autobiographical memory task, the experimental group retrieved previous burnout experiences, whereas one control group retrieved a neutral memory and another control group received no intervention. After measuring current burnout symptoms as a manipulation check, we measured the cognitive and affective empathy of all participants. Findings indicate that the experimental group reported significantly higher burnout symptoms compared to control groups, validating our intervention method. Furthermore, we found that the experimental group scored lower on one of the cognitive empathy measures, suggesting negative effects on the relational skills of burned-out individuals. Results are discussed with regard to ecological validity and implications.

Keywords: empathy; emotion recognition; emotional understanding; burnout; autobiographical memory task

Burnout undermines empathising: Do induced burnout symptoms impair cognitive and affective empathy?

Empathy—the ability to share someone else's internal state (Dziobek et al., 2008)—is deeply rooted within human nature (Decety & Jackson, 2004). Many researchers distinguish between cognitive and affective components of empathy (e.g., Blanke & Riediger, 2019; Dziobek et al., 2008). Whereas the cognitive component refers to deducing and comprehending mental states of others, the affective component comprises empathic concern and sharing of others' emotions (Dziobek et al., 2008). Even though empathy is often understood as a trait, research has shown that there is also a state component of empathy, indicating a certain variability within people across events (van der Graaff et al., 2016).

Empathy is an important prerequisite for effective (pro)social interactions because it enables us to understand and (emotionally) respond to others' intentions, internal states, and behaviour (Baron-Cohen & Wheelwright, 2004). Research also indicates that it is an important asset in the workplace; for example, more empathic managers show better work performance (Sadri, Weber, & Gentry, 2011), diabetes patients treated by more empathic physicians show better medical outcomes (Hojat et al., 2011), and empathic social workers work more effectively (Gerdes & Segal, 2011).

Another phenomenon related to the workplace in various professions has received growing recognition in the past decades: burnout syndrome (Schaufeli, Leiter, & Maslach, 2009). Burnout is defined as a "work-related state of mind […] characterized by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work" (Schaufeli & Enzmann, 1998, p. 36). The origins of burnout are multifarious and they are often viewed as emerging and reasonably stable responses to

chronic stress on the job (Maslach, Schaufeli, & Leiter, 2001). However, recent research also shows that symptoms fluctuate over shorter periods of time (Schmidt, Klusmann, Lüdtke, Möller, & Kunter, 2017), indicating a situational variability to burnout.

Concerning the aftermath of job burnout, research has focused primarily on consequences for employers—such as absenteeism and turnover intentions (e.g., Swider & Zimmerman, 2010)—or for employees' health and wellbeing (e.g., Salvagioni et al., 2017). Up to now, there has been little research on the socio-emotional consequences of burnout. This is surprising, since Maslach and Leiter (1999) assumed twenty years ago that burnout negatively influences social interactions, which are critical success factors in the human service sector. Whereas empathy requires the ability to focus on the other (Eisenberg & Miller, 1987), burned-out individuals have to deal with the loss of their own resources (Buchwald & Hobfoll, 2004), resulting in a stronger focus on themselves. This also corresponds with the finding that burned-out individuals tend to treat recipients as "impersonal objects" (Maslach et al., 2001, p. 403) and suggests that burned-out individuals are less empathic.

There is some non-experimental research investigating empathy as precursor to burnout that establishes negative relations, meaning that more empathic people showed fewer burnout symptoms (see Wilkinson, Whittington, Perry, & Eames, 2017 for a review). However, to our knowledge, there is no randomized controlled experiment shedding light on the causal direction of burnout symptoms and empathy. The present study fills this research gap by using a novel experimental design. To induce burnout symptoms situationally in the experimental group, participants retrieve a former burnout experience in an autobiographical memory task (similar to Todd, Forstmann, Burgmer, Brooks, & Galinsky, 2015). We hypothesised that the group with increased levels of burnout symptoms would show decreased cognitive and affective empathy. The ethics

committee of the Free University Berlin approved the study. Furthermore, we preregistered the experiment, including the dependent and independent variables, as well as the analysis plans. See https://osf.io/s7m4e/ for preregistration and data.

Materials and method

Participants and design

We recruited participants located in the United States from Amazon.com's Mechanical Turk (MTurk). Research has indicated that MTurk personnel are more diverse than the student samples commonly used for experimental purposes (Casler, Bickel, & Hackett, 2013). We advertised our study as a questionnaire containing writing and check-box tasks. An a priori power analysis showed that 390 participants are required for an experiment of three groups ($f = 0.2$, $\alpha = .05$, power = .95)[6]. We recruited 370 participants for our study.

Participants received $2.50 for completing the study. They were randomly assigned to either the experimental group ($n_{Exp} = 170$) or one of two control groups ($n_{C1} = 93$; $n_{C2} = 107$); equal distribution between the experimental group and control groups in total was targeted. We excluded data from one participant of the experimental group who did not fill out the manipulation check and from 14 participants who did not adequately respond to the intervention tasks ($n_{Exp} = 8$, $n_{C1} = 6$)[7], resulting in a final sample of 355 (44.5% women, 0.3% not specified; $M_{age} = 36.37$, $SD_{age} = 9.91$). Most of

[6] We chose a small effect size and a conservative power level due to the artificial nature and novelty of the experimental design.

[7] Participants were excluded if they did not respond to the question presented during the intervention, but wrote about something else ($n = 7$), or if they wrote essays with a particularly positive connotation in the experimental group ($n = 4$) or with a clear negative connotation in the control group 1 ($n = 2$). Further, we excluded one participant who provided two completely different essays in the manipulation task and in the refreshment task (completed between the two cognitive empathy tests), suggesting two different persons filling out the same questionnaire.

our participants reported holding a high school diploma/GED (29.5%) or a Bachelor's degree (49.9%) as their highest educational level. The most prominent practiced professions in our sample according to the International Standard Classification of Occupations (ISCO) were technicians or associate professionals (23.0%), managers (21.4%), services or sales workers (20.8%), and clerical support workers (10.5%); only 4.3% participants reported being jobless.

Procedure and materials

After participants gave their consent and disclosed their Amazon worker ID, we subjected participants to one of three conditions: to a burnout or to a neutral intervention condition, both involving the writing of a short essay (see below), or to no intervention. Subsequently, all participants completed a burnout questionnaire. In a next step, they worked on two tasks measuring cognitive empathy and on one task measuring affective empathy. In between the two cognitive empathy tests, we redisplayed the essays they had written during the intervention phase to both participants of the burnout condition (experimental group) and participants of the neutral condition (first control group); participants were given the option of expanding their essays to ensure the effect of the intervention. In the last part of the questionnaire, we collected additional information regarding the intervention task and demographic data of all participants. Tasks and questions were administered online using EFS Survey. We present all materials below in more detail.

Intervention: manipulation of burnout symptoms

As part of an autobiographical memory task, we asked participants in the experimental condition to write about a former work situation where they experienced burnout symptoms. In accordance with the definition of burnout formulated by Schaufeli and Enzmann (1998), participants received the following instruction:

> Please describe a time in your life when you felt exhausted and unmotivated in your job and when you had the feeling that you were not accomplishing enough and that you were distancing yourself internally from your work.
> Begin by describing the precise situation and the reasons behind your experience. Then, particularly describe your negative emotions and thoughts at that time. Please describe the experienced episode in whole sentences and in as much detail as possible.

Participants in control group 1 received a neutral intervention; they had to retrieve memories without strong emotional content by writing about the floor plan of their first dwelling. Control group 2 received no intervention.

Manipulation check

In order to examine the effectiveness of our experimental intervention and to measure participants' levels of burnout symptoms in relation to their work, participants filled out the widely applied *Maslach Burnout Inventory – Human Services Survey* (MBI; Maslach & Jackson, 1981). We used all items of the three subscales: (1) emotional exhaustion, (2) depersonalisation, and (3) (reduced) personal accomplishment. The instruction was, "Please indicate to what extent the statements apply to you personally in relation to your work (main job)" (sample item: "I feel emotionally drained from my work"[8]). Participants rated their agreement with 22 statements on a 7-point response scale (1 = *never*, 4 = *moderately*, 7 = *very strongly*). We used an additional response category (8 = *does not apply to the context of my work*), treating these responses as missing data. Individual scores consisted of mean values across items. Internal consistency in our sample was excellent ($\alpha = .94$).

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Empathy measurements

In order to measure participants' empathic capacities, we applied different methods capturing cognitive and affective components. A thorough explanation of the task, including one practice item, preceded each test.

Cognitive empathy

In measuring cognitive empathy, we applied two different instruments. First, we used the revised version of the *Reading the Mind in the Eyes Test* (RMET; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001). The RMET consists of 36 items and measures the ability to recognise mental states in others based on facial expressions in the eye region. Participants select one out of four terms to best describe the perceived mental state (see figure 1 for a sample item). The correct answer is based on consensus from an ample population (Baron-Cohen et al., 2001). We presented items in random order; participants' scores consisted of the sum of correct responses. Internal consistency in our sample was good ($\alpha = .85$).

Figure 1. A sample picture of the revised *Reading the Mind in the Eyes Test* (Baron-Cohen et al., 2001). Descriptor choices were *irritated*, *bored*, *playful* (correct), and *comforting*.

Second, we used 14 work-related items from the *Situational Test of Emotional Understanding* (STEU; MacCann & Roberts, 2008). Each item consists of a short story in a workplace context and ends with a question about the emotional state of the

protagonist (e.g., "A supervisor who is unpleasant to work for leaves Alfonso's work. Alfonso is most likely to feel?"). Participants select one out of five answers (e.g., from *hope*, *regret*, *relief* (correct), *sadness*, or *joy*). Correct choices are composed of about the same number of positive and negative emotional states. Items were constructed and scored according to Roseman's (2001) appraisal theory (MacCann & Roberts, 2008). Participants' scores consisted of the sum of correct responses. Internal consistency in our sample was questionable, but close to acceptable ($\alpha = .69$)[9]; however, it was similar to the internal consistency of all items in a study presented by the developers of the instrument (MacCann & Roberts, 2008).

Affective empathy

Similar to Dziobek et al. (2008), we measured affective empathy (AE) by presenting each of the STEU stories again, but this time with the correct answer (e.g., "A supervisor who is unpleasant to work for leaves Alfonso's work. Alfonso is feeling RELIEF."). We asked participants to indicate how strongly they can feel with each protagonist on a 7-point response scale (1 = not at all, 4 = moderately, 7 = very strongly). Individuals' scores consisted of mean values. Internal consistency in our sample was good ($\alpha = .89$)[10].

[9] One item of the STEU had to be deleted due to incorrect orthography and, therefore, possible misunderstanding.

[10] Congruently to the STEU, one item had to be deleted due to incorrect orthography and, therefore, possible misunderstanding. Another item contained two incongruent names; however, we did not remove the item because the content was not affected and descriptive values did not differ from the other items.

Demographics

All participants answered questions about their age, gender, and educational degree because related research literature demonstrates associations to empathy (Rueckert & Naybar, 2008; Ze, Thoma, & Suchan, 2014). We also included questions about participants' professions following the International Standard Classification of Occupations (ISCO) and years of work experience, because we expected some professional groups to be more empathic or, with time, more trained towards empathy than others. However, multivariate analysis of variance showed that groups did not differ with respect to any demographic variable ($F(10, 680) = 0.40$, $p = .95$). Therefore, we did not include demographic data in subsequent analyses.

Results

Manipulation check

On average, participants achieved an MBI score of 3.58 ($SD = 1.20$) on a scale ranging from one to seven. To examine the effectiveness of our manipulation of burnout symptoms, we conducted an analysis of variance with contrasts. Mean scores participants received in the MBI served as dependent variable; group affiliation was treated as independent variable. We found a difference in reported burnout symptoms between the three groups, with $F(2, 352) = 5.40$, $p < .01$, $R^2 = .03$. As intended, planned contrasts revealed that the experimental group ($M_{Exp} = 3.80$, $SD_{Exp} = 1.25$) reported more burnout symptoms than the two control groups ($M_{C1} = 3.37$, $SD_{C1} = 1.18$; $M_{C2} = 3.41$, $SD_{C1} = 1.09$), with $t(352) = 3.3$, $p < .001$ and Bonferroni-adjusted alpha levels of .025 per test (.05/2). The control groups did not differ from each other ($t(352) = -.25$, $p = .81$). Figure 2 illustrates the results.

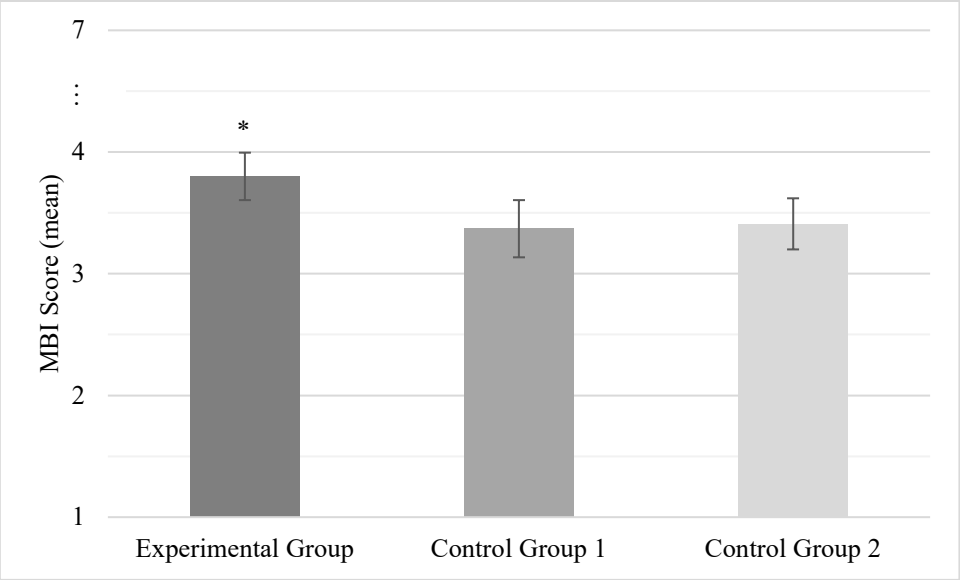

Figure 2. Results from the manipulation check: mean scores of reported burnout symptoms (MBI) for the experimental and both control groups. Error bars depict 95% confidence intervals. The mean score of the experimental group was significantly different to the mean scores of control groups ($p < .01$). The control groups did not differ.

In addition to our preregistered analysis plans, we also conducted a multivariate analysis of variance, using the three subscales of the MBI as dependent variables and group affiliation as independent variable, in order to investigate the effect of the intervention on each subscale separately. The analyses revealed that there was a difference in reported burnout symptoms between the three groups, with $F(6, 700) = 2.79$, $p = .01$, Wilk's $\Lambda = .95$, partial $\eta^2 = .02$. Tests of between-subject effects revealed that groups differed with regard to reported symptoms of emotional exhaustion ($F(2, 352) = 3.13$, $p = .045$, partial $\eta^2 = .02$) and reduced personal accomplishment ($F(2, 352) = 7.39$, $p < .01$, partial $\eta^2 = .04$), but not depersonalisation ($F(2, 352) = 1.94$, $p = .15$). Contrast analyses revealed that the experimental group reported more symptoms of emotional exhaustion and reduced personal accomplishment than the two control groups ($p = .01$/$p < .001$); the control groups did not differ from each other on any of the subscales ($p = .80$/$p = .15$).

The effect of reported burnout symptoms on empathy

On average, participants made 25.27 (*SD* = 6.32) out of 36 correct choices in the RMET and 7.88 (*SD* = 2.82) out of 13 correct choices in the STEU, and they achieved 5.40 (*SD* = 0.92) on a scale ranging from one to seven in the measurement of affective empathy. To test our central hypothesis that the experimental group with induced burnout symptoms displayed decreased cognitive and affective empathic abilities, we conducted one-tailed independent t-tests[11]. Since the manipulation check was positive and control groups did not significantly differ in burnout scores, and multivariate analyses of variance also showed that control groups did not differ in all three empathy test scores ($F(2, 191) = .51$, $p = .60$), we merged participants of control group 1 and 2 into one group.

We conducted tests using Bonferroni-adjusted alpha levels of .0167 per test (.05/3). In line with our hypothesis, there was a statistically significant difference between groups in RMET scores ($t(310) = -2.20$, $p = .01$). On average, the experimental group ($M_{Exp} = 24.45$, $SD_{Exp} = 6.92$) gave -1.5 (*SD* = .68, 95%-CI [-2.84, -.16])) fewer correct answers in the RMET than the merged control group ($M_C = 25.95$, $SD_C = 5.70$). However, the groups differed neither in STEU scores ($M_{Exp} = 7.71$, $SD_{Exp} = 2.95$; $M_C = 8.01$, $SD_C = 2.70$; $t(353) = -.98$, $p = .16$) nor in AE scores ($M_{Exp} = 5.48$, $SD_{Exp} = .80$; $M_C = 5.34$, $SD_C = 1.01$; $t(352) = 1.37$, $p = .09$). We conducted additional analyses to investigate whether the emotional valence of the STEU or AE items played a significant role in the different groups' ratings, calculating separate two-tailed t-tests for positive

[11] In our preregistration, we stated we would conduct multivariate analysis of variance with all three empathy measures as dependent variables. However, because affective empathy scores did not correlate with the two cognitive empathy measures, we conducted independent t-tests instead.

and negative emotional states. However, the groups still did not differ in their STEU scores (for positive emotions: $t(353) = -1.29$, $p = .20$; for negative emotions: $t(353) = -.45$, $p = .65$) or their AE scores (for positive emotions: $t(353) = 0.51$, $p = .61$; for negative emotions: $t(352) = 1.89$, $p = .06$).

To find out if burnout symptoms fully explained the relationship between conditions and cognitive empathy measured with the RMET, we conducted an additional analysis of variance that we did not preregister: Participants' RMET scores served as dependent variable, group affiliation was treated as independent variable, and mean scores of burnout levels were entered as covariate. We found that, once reported levels of burnout symptoms were included into the analysis ($F(1, 352) = 9.95$, $p = .002$, $\eta_p^2 = .03$), the main effect of group affiliation was no longer significant ($F(1, 352) = 2.86$, $p = .09$, $\eta_p^2 = .01$).

Discussion

With this study, we aim to understand the causal link between burnout symptoms and both cognitive and affective empathy. For this purpose, we developed and validated a novel intervention to induce burnout symptoms in an experimental setting. Our analyses showed that participants in the experimental group did indeed report increased burnout symptoms compared to control groups. However, these differences were only statistically significant for the subscales emotional exhaustion and reduced personal accomplishment. This might be because the intervention task was based on a burnout definition by Schaufeli and Enzmann (1999) that includes the process of internally distancing oneself from one's work, but does not explicitly mention the aspect of distancing from clients or recipients. However, this element is largely paraphrased in the MBI items of the depersonalisation subscale. Changing the instructions accordingly might result in different findings; future studies need to

validate this explanation.

Several arguments support our claim we did not merely aggravate negative sentiments in our participants: Our intervention task was directly tailored towards burnout symptoms, and we used an established, validated, and specific burnout measure to test its effectiveness. Furthermore, other research indicates that negative mood and burnout symptoms are distinguishable constructs with only some overlap (Zellars, Hochwarter, Perrewé, Hoffman, & Ford, 2004). However, to support this claim, subsequent studies could additionally measure and control for participants' mood after the intervention task to rule out the possibility that this specific experimental condition was mainly targeting participants' mood.

With regard to our main research question regarding the effects of reported burnout symptoms on cognitive and affective empathy, our study showed mixed results. Participants in the experimental condition did, as expected, score lower on the first cognitive empathy test, but not on the second. We did not find group differences for our measure of affective empathy.

That we found detrimental effects on cognitive empathy is in line with previous findings showing that burnout symptoms are negatively related to cognitive performance in general (Deligkaris, Panagopoulou, Montgomery, & Masoura, 2014; Feuerhahn, Stamov-Roßnagel, Wolfram, Bellingrath, & Kudielka, 2013); general cognitive abilities are important contributors to cognitive empathy (Shamay-Tsoory, Tomer, Goldsher, Berger, & Aharon-Peretz, 2004). Additionally, this finding corresponds to research investigating empathy as precursor of burnout which establishes stronger associations between cognitive components of empathy and burnout levels compared to affective components (Lamothe, Boujut, Zenasni, & Sultan, 2014). Possible explanations are that cognitive empathy might require more resources than

affective empathy, whereby the exhausted worker experiences a lack of energy and resources. Further, Maslach et al. (2001) note that burned-out workers distance themselves from work and clients as a way of coping with work overload; perhaps they pursue this goal by actively decreasing their empathy. However, cognitive empathy might be easier to control than affective empathy, leading only to a decrease in cognitive empathy. Support for both explanations comes from evolutionary approaches that describe affective empathy as an ancient and automatic process as compared to cognitive empathy, which requires more complex cognitive skills (De Waal, 2008). Future research could additionally measure cognitive skills after the intervention phase that are associated with both burnout symptoms and cognitive empathy (e.g., attention) and investigate whether they mediate the relationship between burnout symptoms and cognitive empathy. However, even if these experiments were to establish mediator effects with cognitive skills, there would still be noteworthy detrimental effects of burnout symptoms on cognitive empathy, as shown in this study.

That we could not detect an effect either for the second cognitive empathy task or for the affective component of empathy might have several reasons. One explanation arises from the fact that our intervention method did not increase depersonalisation scores for the experimental group; however, this is conversely the subscale with the strongest focus on social aspects of the workplace, including empathizing with people. Another reason is that we asked participants in all empathy tasks to actively focus on someone else's internal state, so they had to draw their attention away from their own. This process might have taken longer for the experimental group than for the control group, pointing towards a plausible mechanism as to why burnout symptoms decrease empathic skills. Another explanation is that the effect of the burnout intervention itself did not last for the entire empathy test phase. Participants had to work on 36 items of

the first cognitive measure before they responded to 14 items of the second cognitive measure and filled out 14 questions of the affective empathy measure. The second interaction with the individual intervention task—between the cognitive measures—might have not been enough to reactivate or refresh burnout symptoms to prolong them for the entire test phase. Future studies should randomize tests to exclude this explanation. That we could not detect any effect on the affective component might also be due to a measurement problem: Other than cognitive empathy, measuring affective empathy in online surveys heavily relies on participants' willingness to reflect upon and share their own feelings. Responses in self-reports are often influenced by social desirability and the ecological validity is limited (Dziobek et al., 2008). High mean scores and very low levels of standard deviation for affective empathy in our study support this claim.

An important limitation of the experiment is its restricted ecological validity, because we induced burnout symptoms through retrieved burnout experiences and not in a natural work environment. Of course, the latter approach is not ethically acceptable. It is also noteworthy that we did not address clinically relevant burnout symptoms, as we were interested in milder forms of burnout symptoms in people potentially still in the workplace and interacting with recipients. Furthermore, future studies could use more valid ways of measuring empathy, such as the dyadic interaction paradigm (Blanke & Riediger, 2019). However, these methods are usually applied in laboratories and cannot be administered in online surveys.

In general, this study contributed in two ways to the existing research literature: First, we developed and validated a new experimental method for conducting burnout research, in the form of an autobiographical memory task, which can be applied in future experimental research on burnout symptoms. Second, we were able to

demonstrate small negative effects for the relational skills of individuals with increased burnout symptoms, even in an artificial setting. The direction of the effect calls into question research which investigates empathy only as a precursor of burnout (Wilkinson et al., 2017) and corroborates earlier assumptions about the aftermath of burnout symptoms (Maslach & Leiter, 1999). The study also underlines the importance of burnout interventions for human service workers, in order to sustain their empathy and thus avoid the adverse effects of decreased empathy for clients, students, or patients.

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Appendix D – Manuscript for Study 4

STUDY 4

Emotional exhaustion and the frequency of educational activities in preschool

Trauernicht, M., Oppermann, E., Klusmann, U., & Anders, Y. (unpublished). Emotional exhaustion and the frequency of educational activities in preschool.

Abstract

Research Findings. Previous research has demonstrated that preschool teachers are particularly affected by burnout symptoms, such as emotional exhaustion. However, only few studies exploring preschool quality determinants consider preschool teachers' burnout symptoms as a predictor. Yet we know from other professions that burnout symptoms often lead to reduced job performance and withdrawn attitudes. Therefore, this study examines the link between emotional exhaustion in preschool teachers and the frequency of educational activities promoting language and early literacy (e.g., story reading or storytelling) in the preschool classroom. We draw on data from a large German study and included 1,389 teachers nested in 204 preschools. Multilevel regression analyses revealed that emotional exhaustion was negatively related to the frequency of educational activities beyond important structural characteristics. *Practice or Policy.* Our findings suggest that greater attention needs to be paid to preschool teachers' emotional exhaustion as it impairs quality care. Further, they encourage interventions targeting burnout symptoms in preschool teachers to avert detrimental effects for themselves as well as for the children.

Keywords: preschool teachers; emotional exhaustion; burnout; educational activities; process quality; language and early literacy

Introduction

Research of the past years has demonstrated impressively that attending preschool[12] has positive short- and long-term effects for children (Campbell et al., 2014; Gilliam & Zigler, 2000; Gorey, 2001; OECD, 2016; Roßbach, Kluczniok, & Kuger, 2008; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2011; Vandell & Wolfe, 2000). However, to ensure positive consequences of preschool attendance for children, preschools have to provide high-quality care (Anders, Grosse, Roßbach, Ebert, & Weinert, 2013; Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Roßbach et al., 2008; Sammons et al., 2008; Sylva et al., 2011), including the provision of educational activities that stimulate learning and growth (Anders et al., 2012). Models of preschool quality mainly focus on the influence of structural characteristics (e.g., teacher-child ratio or teachers' educational level) and educational beliefs of preschool teachers on high-quality educational processes (Kluczniok & Roßbach, 2014; Roux & Tietze, 2007; Tietze et al., 2013).

However, research begins to show that quality care is also dependent on the mental condition of preschool teachers (e.g., Gerber, Whitebook, & Weinstein, 2007; Hamre & Pianta, 2004; Jennings, 2015). Unfortunately, preschool teachers belong to an occupational group that is highly susceptible for job-related burnout symptoms, such as emotional exhaustion (Jungbauer & Ehlen, 2015; Koch, Stranzinger, Nienhaus, & Kozak, 2015; Maslach & Pines, 1977). Whereas few studies have already demonstrated that preschool teachers' depressive symptoms impair the overall quality of childcare settings or teachers' sensitivity in teacher-child interactions (e.g., Gerber et al., 2007;

[12] In this article, we use the term preschool for centers of early childhood education and care with non-familial caregivers for children of all ages before entering primary school.

Hamre & Pianta, 2004; Jeon, Buettner, & Snyder, 2014), there is a lack of research investigating the association of work-related burnout symptoms with educational activities conducted in the classroom. To address this gap in the research literature, the present study draws on a large German sample and investigates the influence of preschool teachers' level of emotional exhaustion on the reported frequency of language and early literacy related activities embedded into daily routines.

Quality in early childhood education and care settings

In the past decades, research has made huge attempts to capture quality in early childhood education and care (ECEC) settings. A common distinction is made between structural quality, orientation quality, and process quality (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Roux & Tietze, 2007; Slot, 2018)[13]. Structural quality describes personnel, social, and spatial-material surroundings of a child in a preschool setting (Tietze et al., 2013), such as preschool teachers' professional background, group features, and center characteristics. It is mainly regulated by administration and policies (Kluczniok & Roßbach, 2014). In contrast, orientation quality comprises all aspects of preschool teachers' implicit or explicit attitudes and educational beliefs that are connected to their professional behavior (Kluczniok & Roßbach, 2014). According to the structure-process model (see figure 1; e.g., Kluczniok & Roßbach, 2014; Roux & Tietze, 2007), both dimensions – structural and orientation quality – provide the framework for educational processes taking place in the preschool, defined as process quality (Kluczniok & Roßbach, 2014; Slot, 2018). Process quality comprises all social, emotional, physical, and instructional components of interactions between children and

[13] Some researchers include a fourth dimension – networking with families – and place it next to process quality (cf. Klucznik & Roßbach, 2014).

preschool teachers, their peers, and their environment (Kluczniok & Roßbach, 2014; Pianta et al., 2005). It is the dimension that is most directly connected to positive child outcomes (Kluczniok & Roßbach, 2014; Ulferts & Anders, 2016) and is therefore often in the focus of investigations and discussion.

In the literature, process quality is often divided into more global processes connected to child development, such as the general social climate and appropriate care, and into domain-specific processes promoting specific pre-academic skills, such as language, early literacy, or math skills (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Ulferts & Anders, 2016). Thereby, researchers capture the quality and quantity of interactions and processes (Anders et al., 2012; Burchinal et al., 2008; Hamre & Pianta, 2004; Tietze et al., 2013; Ulferts & Anders, 2016), including the frequency of implemented educational activities (e.g., Barenthien, Oppermann, Steffensky, & Anders, 2019; La Paro et al., 2009).

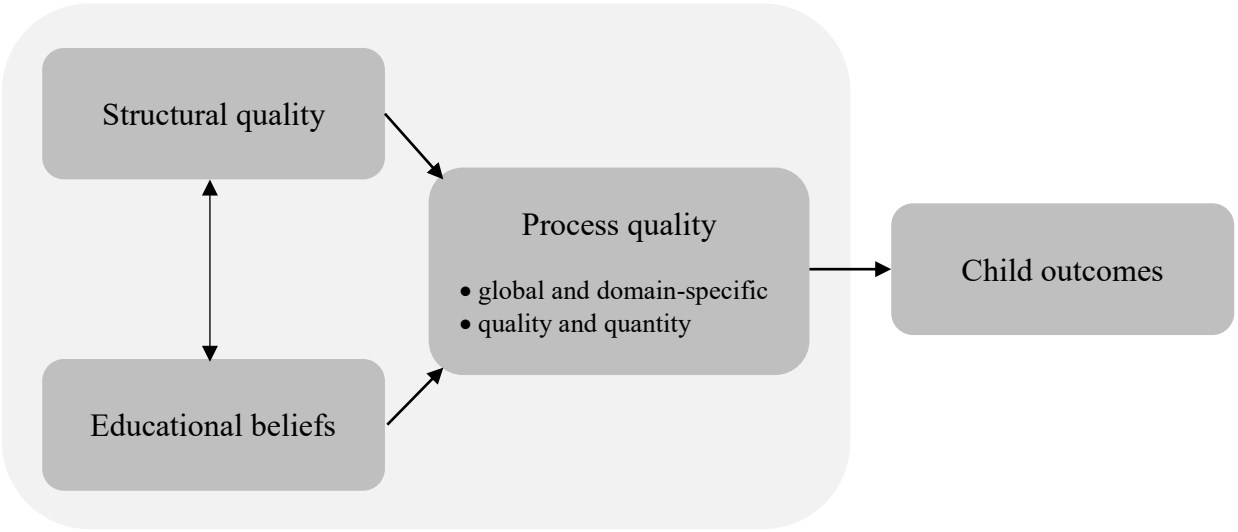

Figure 1. Adjusted structure-process model of ECEC quality (Kluczniok & Roßbach, 2014; Pianta et al., 2005; Roux & Tietze, 2007; Slot, 2018).

Educational activities

Educational activities are learning opportunities for children to develop specific skills or areas of knowledge. They can be of varying length, frequency, and content, and

they are directly connected to preschoolers' learning gains (Connor, Morrison, & Slominski, 2006; Piasta, Logan, Pelatti, Capps, & Petrill, 2015). The domain of language and early literacy plays a particular pivotal role in preschools (Gerdes & Segal, 2011; Viernickel & Schwarz, 2009). Related educational activities in preschools encourage children to deal with written and spoken language(s) from an early age on (e.g., through story reading, storytelling, discussion rounds, singing) and thus help children develop respective skills. Several intervention studies support that language and early literacy activities have a positive effect on children's language and literacy skills (Aram & Biron, 2004; Gettinger & Stoiber, 2008; Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999). Moreover, research has demonstrated that early language and literacy skills are highly predictive of later cognitive performance and academic outcomes, such as reading and writing (Lonigan, Allan, & Lerner, 2011; National Institute of Child Health and Human Development Early Child Care Research Network, 2000; Sammons et al., 2008).

Preschool teachers either prepare educational activities in a more formal way or recognize and utilize situations in the normal preschool routine or play situations as learning opportunities. The latter is particularly prominent in child-centered approaches (Wieduwilt, Lehrl, & Anders, in revision) that emphasize the necessity to follow children's interests and play for educational processes (Weikart, 2000). Many preschool programs around the world take this approach (Weikart, 2000), including Germany (Anders, 2015). Especially language education embedded into daily routines has received increased attention and political support in recent years (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2016), because it was shown that additional and more teacher-directed language programs for a selected group of children showed only little or no impact on child outcomes (e.g., Wolf, Schroeders, & Kriegbaum, 2016).

According to the competence model of Fröhlich-Gildhoff, Nentwig-Gesemann, and Pietsch (2011), the willingness for and realization of an action – for example, the pedagogical use of situations in the daily preschool routine – is influenced by several aspects: On the one side it is dependent on the existing knowledge and skills of the respective teacher. But on the other side, it hinges on the momentary motivation to act and the reflective perception and analysis of a given situation, which is particularly relevant in child-centered approaches. The model indicates that in order to implement high-quality educational activities preschool teachers' engagement and investment of time as well as resources are necessary. But what happens when preschool teachers feel drained and emotionally exhausted?

Emotional exhaustion in preschool teachers

Work-related fatigue symptoms, depersonalized or cynical attitudes, and a subjectively experienced lack of accomplishment characterize the burnout syndrome (Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Enzmann, 1998), which is enjoying increasing popularity in research and society (Burisch, 2014). Thereby, emotional exhaustion is considered the core component of burnout (Kristensen, Borritz, Villadsen, & Christensen, 2005) and describes a perceived overload and depletion of emotional and physical resources (Maslach et al., 2001). Burnout is often conceptualized as response to prolonged stress on the job (Maslach et al., 2001; Rudow, 1999). With its explicit reference to the work context (Bakker et al., 2000), the construct of burnout is particularly appealing for models and investigations of work performance, such as preschool teachers' care behavior. Because burnout symptoms develop over time (Maslach & Leiter, 2017) and frequently remain undiscovered in earlier stages, affected staff often stays in the workforce for quite a long time. However, their work is already impacted and they tend to show reduced job performance and worse client outcomes, as

we know from teaching personnel of higher age groups or from other professions (Klusmann, Richter, & Lüdtke, 2016; Kop, Euwema, & Schaufeli, 1999; Leiter, Harvie, & Frizzell, 1998; Leiter & Maslach, 1998; Maslach et al., 2001; Parker & Kulik, 1995). The more important it is to understand the work-related consequences of burnout symptoms in preschool teachers, both for research and practice, especially since research of the past decades has clearly shown that preschool teachers are particularly vulnerable to developing burnout symptoms (e.g., Blöchliger & Bauer, 2017; Jungbauer & Ehlen, 2015; Løvgren, 2016; Maslach & Pines, 1977; Viernickel, Nentwig-Gesemann, Nicolai, Schwarz, & Zenker, 2013).

Theoretical models from related disciplines within education research, but beyond the preschool context, explicitly include burnout experiences of teachers as (main) predictor of teaching quality and student outcomes. For example, the Prosocial Classroom Model by Jennings and Greenberg (2009) predicts teacher-student relationships, classroom management, and socio-emotional learning by teachers' social-emotional competences as well as well-being, including burnout. In a model from Helmke et al. (2007), teachers' engagement – considered as direct counterpart to burnout (Maslach & Leiter, 1997) – is included as one of five influential teacher characteristics predicting process quality of teaching and quality of teaching materials. Further, even within burnout research, Maslach and Leiter (1999) established a model of teacher burnout predicting teacher behavior as well as student outcomes. But to date there are no established models in the preschool context that depict burnout symptoms of preschool teachers or narrowly related constructs as predictors of high-quality center care.

However, there are two empirical studies we are aware of that investigated burnout symptoms of U.S. preschool teachers in relation to preschool quality: In 1986,

Hildebrand and Seefeldt investigated preschool teachers' burnout in relation to the environmental quality in preschools, including the availability of educational activities, but they did not find any associations. However, the study relied on a rather privileged and selected sample with only 20 preschool teachers and there was little deviation between environmental quality scores and low burnout scores, decreasing the chance to find significant effects even more. A more recent study by Jennings (2015) found significant and negative relations between emotional exhaustion and depersonalization of 35 preschool teachers and their emotional support, meaning sensitive interactions, as well as between emotional exhaustion and their instructional support in the classroom, including the support of children in understanding of and engaging with learning activities.

Because there exists an overlap between burnout and depression (Bakker et al., 2000; Bianchi, Schonfeld, & Laurent, 2015) and burnout symptoms are often regarded as a transition to mental disorders such as depression (Maslach & Leiter, 2017), we also review research on depressive symptoms of preschool teachers and preschool quality indicators. Inspired by the far more advanced research on maternal depression and parental behavior (e.g., Campbell, Cohn, & Meyers, 1995; NICHD Early Child Care Research Network, 1999), Hamre and Pianta (2004) established the connection between higher depression levels in non-familial caregivers and lower interaction quality. They found small, but consistent relations between higher depression levels and less sensitive as well as more withdrawn behavior of caregivers. As a response, Pianta et al. (2005) included the measurement of depressive symptoms in a broader investigation of preschool quality. However, they only found small, but nonsignificant relations to the emotional climate in the classroom. Shortly thereafter, Gerber et al. (2007) identified depression symptoms as risk for less teacher sensitivity, whereby the overall classroom

quality as well as increased training levels in early childhood education moderated the relationship. Other studies followed that were able to connect depressive symptoms with lower child-care quality and even child outcomes (e.g., Jeon et al., 2014; Kwon, Jeon, Jeon, & Castle, 2019; Sandilos et al., 2015).

However, it is important to note that in contrast to burnout, depression is context-independent and refers to all areas of life (Bakker et al., 2000) and it is mainly characterized by a depressed mood and lack of interest or pleasure (American Psychiatric Association, 2013). Results can therefore not be transferred directly. In addition, the studies cited were all conducted in the USA. Since ECEC systems differ between countries, it is quite possible that investigations in other countries come to different findings. Finally, the majority of the reviewed studies focused on associations between preschool teachers' burnout or depressive symptoms on teacher sensitivity or more general ratings of global preschool quality and, thereby, neglecting the effect on educational activities in particular.

The current study

Based on the current state and need of research, this study explores the relationship between symptoms of emotional exhaustion in preschool teachers and the frequency of educational activities in the preschool classroom that are important aspects of preschool quality (cf. Barenthien et al., 2019; La Paro et al., 2009) and predictors of positive child development (Connor et al., 2006; Piasta et al., 2015). We focus on the key developmental domain of language and early literacy and we specifically look at activities embedded into daily routines, as is common in many ECEC pedagogical concepts, including Germany. In accordance with the reviewed theoretical models and previous results suggesting negative consequences of burnout symptoms, such as emotional exhaustion, for preschool teachers' professional behavior and capacities, we

assume that more exhausted teachers show also less educational activities. To estimate the effect of exhaustion beyond important aspects of structural quality, we also include preschool teachers' professional background, group and center characteristics.

The current study draws on information from a large German dataset. The German ECEC system is characterized by a high decentralization resulting in highly heterogeneous preschool contexts. Further, it follows a socio-pedagogical tradition, including child-centered approaches (Anders, 2015) and a focus on children's comprehensive preparation for life, not just on the development of school related outcomes more customary in other OECD countries (OECD, 2016). Preschool teachers often take care of mixed ages groups (e.g., from one to six years), so younger children can learn from older and older learn to be responsible for younger children (Anders, 2015).

Material and Methods

Participants and procedure

Participants for this study stemmed from the evaluation study of the German federal program Sprach-Kitas: Weil Sprache der Schlüssel zur Welt ist [Language day care centers: because language is the key to the world]. However, the current study does not address evaluative questions. The program is under the lead of the Free University of Berlin and the University of Bamberg; funding is provided by the German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth.

We used reports of preschool teachers collected in spring 2018. From all participating preschool teachers (N = 1447), we eliminated those who did not respond to any of the items measuring our main predictor emotional exhaustion (n = 50) and those who responded to less than 50% of the items of our outcome measure, the frequency of educational activities (n = 8). This procedure resulted in a final sample of N = 1389

preschool teachers (93.3% women; age range: 18–75, M_{age} = 39.68, SD_{age} = 11.84) nested in 204 different preschool centers; the average cluster size in our sample was 6.81 teachers per center. Each preschool center provided additional information on structural center characteristics (teacher-child ratio, center concept). Table 1 and 2 provide overviews of all descriptive data.

Measures

Frequency of educational activities

As our outcome measure, we used a scale inspired by a compilation of activities embedded into daily routines to promote language and literacy by Viernickel et al. (2013)[14]. Each item of the scale describes one out of ten activities (e.g., story reading, singing with children, philosophical discussions) and respondents indicate how often this activity took place in the group they primarily work in. Response categories included *daily* (coded as 8), *several times a week*, *once a week*, *several times a month*, *once a month*, *several times a year*, *once a year* and *never* (coded as 1). The complete list of activities is included in the appendix. Participants' scores consisted of item means if they responded to at least 50% of all items. Internal consistency in our sample was acceptable (Cronbach's α = .74).

Emotional exhaustion

We measured our main predictor variable, emotional exhaustion, with the respective subscale of the wide-spread Maslach Burnout Inventory (Maslach & Jackson, 1981). We applied the German translation provided by Büssing and Perrar (1992) and slightly adapted two items for a better reading flow. Preschool teachers specified their

[14] We excluded the activity *sustained shared thinking* because it is not self-explanatory and some preschool teachers may not understand what is meant by this rather academic term.

agreement with nine items (e.g., "I feel emotionally drained from my work"[15]) on a 7-point response scale ranging from 1 = *hardly ever* to 4 = *moderately* to 7 = *very strongly*. Individual scores consisted of means across all items; our sample's internal consistency was excellent (Cronbach's α = .93).

Individual and structural characteristics

To control for important aspects of structural quality that are assumed to influence the quality of educational processes (e.g., Colwell, Gordon, Fujimoto, Kaestner, & Korenman, 2013; Sandilos, Goble, Rimm-Kaufman, & Pianta, 2018; Schipper, Riksen-Walraven, & Geurts, 2006; Tietze et al., 2013), we included a number of additional variables into the analyses: We included information on preschool teachers' professional background (highest educational degree, number of training hours in the past twelve months, years of working experience in ECEC settings) and group characteristics which could affect the realization of certain activities, including number of children, average age of children, and proportion of migrant children[16]. In addition, we included the fulltime-equivalent teacher-child ratio for each center and whether the center followed an open concept, i.e. whether the pedagogical work is done across groups. As this usually increases the reported number of children to be cared for by preschool teachers, the information is necessary for the exact interpretation of these numbers.

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[16] We defined migrant children as having at least one parent with another first language than German.

Analytic approach

We used IBM SPSS Statistics 25 (IBM Corp. Released, 2017) for preliminary and correlational analyses. To respond to our main research question, we applied hierarchical linear modeling (Raudenbush & Bryk, 2002) in Mplus8 (Muthén & Muthén, 1998 - 2017) using the command TYPE = TWOLEVEL. This approach accounted for the multilevel structure of the data, produced correct estimates of standard errors of beta coefficients, and allowed us to disentangle within- and between-center variance. Emotional exhaustion as well as preschool teachers' professional background and group characteristics were specified at the level of the individual teacher, teacher-child ratio as well as concept were specified on the level of the center. We ran random intercept models with fixed slopes and used full information maximum likelihood (FIML) estimation with nonnormality robust standard errors to handle missing data (0.0%–16.6% missing). On the preschool teacher level, we centered all variables at the grand mean of the sample for better interpretability. We report standardized coefficients because they facilitate the interpretation and comparison of the variables' effects.

Results

Descriptives

Preschool teachers indicated that on average language and literacy related educational activities embedded into daily routines took place once a week within their group (M = 6.07, SD = .91; frequencies for each activity are listed in the appendix). To find out if there were meaningful differences between centers regarding the frequency of educational activities, we specified a null model. The analysis revealed an intraclass correlation coefficient (ICC) of .10 meaning that center affiliation explained 10% of the overall variance in reported educational activities. Further, on average, preschool teachers felt slightly emotionally exhausted (M =2.39, SD = 1.15), with an ICC of .06

meaning that 6% of the variance is explained by center affiliation. As table 1 and 2 reveal, we found a significant negative correlation between emotional exhaustion and the frequency of educational activities. From individual preschool teacher characteristics, only training hours and from structural characteristics only age of children correlated positively with frequency of educational activities. Highest correlation between individual and structural variables was between age and number of children ($r = .40$, $p < .01$). On the level of the center, no variables correlated with frequency of activities.

Table 1

Means, standard deviations, and correlations among preschool teacher-level variables.

	M (*SD*)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Educational activities[a]	6.07 (.91)							
(2) Emotional exhaustion[b]	2.39 (1.15)	-.16**						
Professional background								
(3) Educational level[c]	1.89 (.68)	-.05	.01					
(4) In-service training hours[d]	8.73 (21.52)	.06**	-.03	.06*				
(5) ECEC working experience[e]	12.96 (11.53)	.04	.09**	-.05	.04			
Group structure								
(6) Number of children	19.58 (8.06)	.02	.05	-.04	-.01	.04		
(7) Age of children	3.35 (1.28)	.07*	.11**	-.003	.03	.14**	.40**	
(8) Migrant children (%)	45.83 (30.16)	.03	.08**	-.02	.04	-.03	.11**	.30**

Note. N ranges from 1,065 to 1,389; [a] range: 1 (*never)* – 8 (*daily)*; [b] range: 1 *(hardly ever)* – 7 *(very strongly)*; [c] 0 = other level, 1 = any pedagogical/social vocational training, 2 = vocational training as preschool teacher, 3 = bachelor degree, 4 = master degree; [c] hours in the past year; [d] in years; ** $p < .01$; * $p < .05$.

Table 2

Means, standard deviations, and correlations among preschool center-level variables.

	M (*SD*)	(1)	(2)
(1) Educational activities[a]	6.10 (.52)		
(2) Teacher-child ratio[b]	6.26 (1.79)	-.002	
(3) Concept[c]	.15 (.36)	.00	.05

Note. N ranges from 183 to 204 centers; [a] frequency, range: 1 (*never)* – 8 (*daily*) (mean per center); [b] full-time equivalent; [c] 1 = open, 0 = partially open or core groups; ** $p < .01$; * $p < .05$.

About the role of emotional exhaustion

Our main research question addressed the association between preschool teachers' emotional exhaustion and the frequency of language and literacy related activities embedded into daily routines. To respond to this question, we first specified a model with emotional exhaustion as single predictor for reported frequency of activities (see table 3, model 1). In this way, we aimed at investigating whether emotional exhaustion in and by itself was able to predict the frequency of educational activities and if yes, to what extent. We found a negative effect of exhaustion levels (β = -.15); the model explained 2% of the overall variance on the level of the preschool teacher.

Next, we wanted to explore whether exhaustion levels still contributed to the statistical prediction of the frequency of educational activities when other important aspects of structural quality were included into the model (see table 3, model 2). The results revealed that the negative effect of emotional exhaustion on the frequency of educational activities remained stable (β = -.16), meaning when all other variables were held constant, an increase of one standard deviation in emotional exhaustion was associated with a decrease of .16 in the frequency of language and early literacy related educational activities. Of all other variables, only training hours in the past twelve months contributed to the statistical prediction of frequency of activities with a positive,

but small effect (β = .05). The model explained 5% of the overall variance on the level of the teacher, but was not able to significantly explain variance at the level of the center.

Table 3

Frequency of educational activities: Results from multilevel modeling.

	Model 1		*Model 2*	
	β	SE (β)	β	SE (β)
Teacher level				
Emotional exhaustion	-.15**	.03	-.16**	.03
Professional background				
Educational level			-.05	.03
In-service training hours			.05*	.02
ECEC working experience			.06	.03
Group characteristics				
No of children			.01	.04
Migrant children			-.01	.05
Age of children			.10	.05
Center level				
Center characteristics				
Teacher-child ratio			-.13	.12
Concept			.07	.13
Explained variance				
Teacher level	.02**	.01	.05**	.01
Center level			.02	.04

Note. Model 1 = bivariate association between emotional exhaustion and educational activities, Model 2 = full model; grand-mean centering of teacher level variables; ** $p < .01$; * $p < .05$.

Discussion

This study aimed at investigating the relationship between symptoms of emotional exhaustion in preschool teachers and the quantity of educational activities in the preschool classroom. We focused on activities promoting language and early literacy embedded into daily routines. Our findings support the assumption that preschool teachers with higher levels of emotional exhaustion reported fewer educational activities. This result fits with earlier findings demonstrating that burnout symptoms, such as emotional exhaustion, are not only subjectively experienced, but also show behavioral manifestations on work performance (e.g., Klusmann et al., 2016; Maslach et al., 2001; Parker & Kulik, 1995), even in the ECEC context (Jennings, 2015). In the present study, we examined the neglected relationship between preschool teachers' exhaustion symptoms and conducted learning activities in the classroom; we found that they occurred less frequently when professionals describe themselves as more exhausted.

Emotional exhaustion was predictive of the frequency of educational activities even beyond other important individual and structural variables often considered in research about preschool quality. Of all individual, group, and center characteristics that were included into the model, only the amount of training hours in the past twelve months significantly contributed to the statistical prediction of the frequency of educational activities. Interestingly and consistent with Early et al. (2007) and Early et al. (2006), it was not the educational level of preschool teachers indicating more frequent educational activities. Instead it was the more proximate, continuous training during the exercise of the profession that increased quality care measured through the quantity of conducted educational activities.

Whereas in-service training hours might be a proxy for knowledge and skills that are necessary for the situational use of learning opportunities, symptoms of emotional exhaustion may decrease preschool teachers' motivation to act and their perception and analysis of a suitable situation (cf. competence model of Fröhlich-Gildhoff et al., 2011). Support for this assumption comes from research that demonstrated that burnout symptoms are negatively related to motivation in top amateur rugby players (Cresswell & Eklund, 2005) and to attention in burnout patients (Sandström, Rhodin, Lundberg, Olsson, & Nyberg, 2005). Of course, this explanation has to be empirically evaluated in prospective studies on preschool teachers, leading us to the next section.

Limitations and future directions

As is usual in empirical research, there are a number of limitations to this study, resulting in ideas for future research. First, our data on the frequency of educational activities were based on self-reports. Common method bias resulting in distorted answers is possible and future studies should validate our findings with observational measures. Second, we asked preschool teachers how often the activities took place in the group, not how often they carried them out themselves. Therefore, it is possible that we underestimated the effect of emotional exhaustion in our study because another less exhausted teacher of the same group might still initiate a high amount of activities or even compensates the missing activities of the exhausted teacher. Third, for some groups, there were several teachers responding to this question. However, due to the nature of our data, we were unable to specify a third level of groups. Finally, our research design is cross-sectional in nature meaning that we are unable to draw causal conclusions just from the data. However, we strongly believe that a reversal of the relationship between exhaustion and frequency of activities is very unlikely, as it is not

reasonable to assume that fewer conducted activities increased preschool teachers' emotional exhaustion. Additional ideas for future investigations are to measure both quantity and quality indicators of educational activities, to also investigate the effect on other learning fields (e.g., math or science activities) and within more teacher-directed educational concepts, and to include child outcomes in order to find out whether effects can also be detected at child level. Further, the inclusion of educational beliefs would be of value, as they have been shown to be connected to teachers' depressive symptoms (Pianta et al., 2005) and high-quality care (Kluczniok & Roßbach, 2014; Roux & Tietze, 2007; Tietze et al., 2013).

Conclusion

The study makes an important contribution to the investigation of preschool teachers' mental condition and quality of center care by exploring the consequences of work-related burnout symptoms, namely emotional exhaustion, and the hitherto neglected link to the quantity of educational activities promoting children to engage with language and literacy. The results clearly indicated that exhausted preschool teachers reported fewer educational activities. Therefore, we recommend greater consideration of preschool teachers' work-related states of well-being as important prerequisite for quality care, in empirical investigations as well as models of preschool quality. Further, we promote strong interventions and preventions to reduce exhaustion in preschool teachers and thereby increase the quality of center care and to cushion detrimental effects for preschool teachers and children.

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Appendix

Table A

List of language-related educational activities embedded into daily routines, including means and standard deviations.

English version	*M*	*SD*
(1) Story reading	7.12	1.19
(2) Storytelling	6.08	1.72
(3) Picture book reflections with a small group of children	6.70	1.40
(4) Finger games and rhymes	7.11	1.27
(5) Singing with children	7.58	.86
(6) Musical movement games	6.67	1.34
(7) Discussions with children	7.44	1.16
(8) Philosophical discussions	4.46	2.38
(9) Storytelling workshop (telling, inventing, dictating, or writing stories together with children)	3.46	2.28
(10) Writing down what a child says (children's dictation)	3.61	2.16

Note. Response categories are 1 = *never*, 2 = *once a year*, 3 = *several times a year*, 4 = *once a month*, 5 = *several times a month*, 6 = *once a week*, 7 = *several times a week*, and 8 = *daily*.

DECLARATION

I hereby certify that I have independently produced the present work entitled "Burnout symptoms in preschool teachers and the relation to job conditions and quality of care". All aids I have used are listed. The work has not been accepted or rejected in any previous doctoral procedure.

Berlin, January 2021 *Mareike Trauernicht*

OWN CONTRIBUTIONS AND PUBLICATION STATUS

The following table illustrates my own contribution to the scientific articles published or submitted for publication within my dissertation.

Authors	Title	Status	Own contributions
Trauernicht, M., Anders, Y., Oppermann, E., & Klusmann, U.	Emotional exhaustion in German preschool teachers: the role of personal, structural, and social conditions at the workplace	Unpublished	Preparation of the literature and the theoretical background; compilation of the data set; statistical analyses; lead in writing of the manuscript
Trauernicht, M., Michels, N., & Anders, Y.	Burnout in der Kita und der Zusammenhang zu Aspekten der Arbeitszufriedenheit	Submitted to *Frühe Bildung* (under review)	Preparation of the literature and the theoretical background; lead in conception; lead in data collection; lead in statistical analysis; lead in writing the manuscript
Trauernicht, M., Oppermann, E., Klusmann, U., & Anders, Y.	Burnout undermines empathising: Do induced burnout symptoms impair cognitive and affective empathy?	Published in *Cognition and Emotion,* https://doi.org/10.1080/02699931.2020.1806041	Preparation of the literature and the theoretical background; lead in the conception; implementation of the data collection; statistical analyses; lead in writing of the manuscript
Trauernicht, M., Anders, Y., Oppermann, E., & Klusmann, U.	Emotional exhaustion and the frequency of educational activities in preschool	Unpublished	Preparation of the literature and the theoretical background; compilation of the data set; statistical analyses; lead in writing of the manuscript

Berlin, January 2021

Mareike Trauernicht