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RESEARCH ARTICLE

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Early childhood educators' emotional exhaustion and the frequency of educational activities in preschool

Mareike Trauernicht [a,b], Yvonne Anders[c], Elisa Oppermann[c] and Uta Klusmann[d]

[a]Department of Education, University of Potsdam, Potsdam, Germany; [b]Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany; [c]Department of Education, University of Bamberg, Bamberg, Germany; [d]Department of Educational Research and Educational Psychology, Leibniz Institute for Science and Mathematics Education, Kiel, Germany

ABSTRACT

Previous research has demonstrated that early childhood educators are particularly affected by burnout symptoms, such as emotional exhaustion. However, only few studies exploring preschool quality consider early childhood educators' burnout symptoms as a predictor. Yet we know from other professions that burnout symptoms often lead to reduced job performance. Therefore, this study examines the link between emotional exhaustion in early childhood educators and an important aspect of preschool quality: the frequency of educational activities promoting language and pre-literacy (e.g. story reading or storytelling). We included 1389 educators nested in 204 preschools in Germany. Multilevel regression analyses revealed that emotional exhaustion was negatively related to the frequency of activities beyond important structural characteristics. Our findings suggest that more attention needs to be paid to early childhood educators' emotional exhaustion as it impairs quality care. Further, they encourage interventions targeting burnout symptoms in early childhood educators to avert detrimental effects for themselves and for children.

KEYWORDS

Early childhood educators; emotional exhaustion; burnout; educational activities; process quality; language and pre-literacy

Introduction

Research in recent years has demonstrated that attending preschool has positive short- and long-term effects for children (Campbell et al. 2014; Gorey 2001; OECD 2016; Roßbach, Kluczniok, and Kuger 2008; Sylva et al. 2011; Vandell and Wolfe 2000). To ensure a positive impact of preschool attendance for children, preschools have to provide high-quality care (Anders et al. 2013; Burchinal et al. 2010; Roßbach, Kluczniok, and Kuger 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 early childhood

CONTACT Mareike Trauernicht mareike.trauernicht@uni-potsdam.de Department of Education, University of Potsdam, Karl-Liebknecht Str. 24-25, Potsdam 14476, Germany

educators on high-quality educational processes (Kluczniok and Roßbach 2014; Roux and Tietze 2007; Tietze et al. 2013).

Research begins to show that quality care is also dependent on the mental condition of early childhood educators (e.g. Gerber, Whitebook, and Weinstein 2007; Hamre and Pianta 2004; Jennings 2015). Unfortunately, early childhood educators belong to an occupational group that is highly susceptible for job-related burnout symptoms, such as emotional exhaustion (Jungbauer and Ehlen 2015; Koch et al. 2015; Maslach and Pines 1977), posing a threat to their mental health. Whereas few studies have already demonstrated that early childhood educators' depressive symptoms impair the overall quality of childcare settings or teachers' sensitivity in teacher–child interactions (e.g. Gerber, Whitebook, and Weinstein 2007; Hamre and Pianta 2004; Jeon, Buettner, and 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 early childhood educators' level of emotional exhaustion on the reported frequency of language and pre-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 and Roßbach 2014; Pianta et al. 2005; Roux and Tietze 2007; Slot 2018). Structural quality describes personnel, social, and spatial-material surroundings of a child in a preschool setting (Tietze et al. 2013), such as early childhood educators' professional background, group features, and center characteristics. In contrast, orientation quality comprises all aspects of early childhood educators' implicit or explicit attitudes and educational beliefs that are connected to their professional behavior (Kluczniok and Roßbach 2014). According to the structure-process model (see Figure 1), both dimensions – structural and orientation quality – provide the framework for educational processes taking place in the preschool, defined as process quality (Kluczniok and Roßbach 2014; Slot 2018). Process quality comprises all social, emotional, physical, and instructional components of interactions between

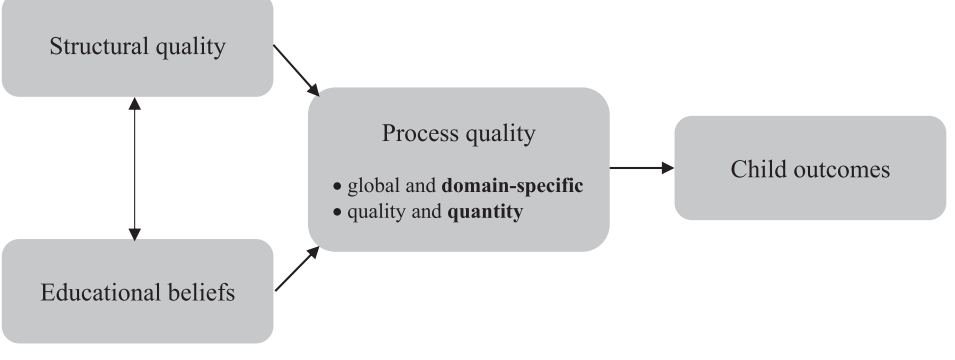

Figure 1. Adjusted structure-process model of ECEC quality (Kluczniok and Roßbach 2014; Pianta et al. 2005; Roux and Tietze 2007; Slot 2018). Research focus of this study is highlighted in bold.

children and early childhood educators, their peers, and their environment; this dimension is most directly connected to positive child outcomes (Kluczniok and Roßbach 2014; Ulferts and Anders 2016) and it is therefore often in the focus of investigations and discussions.

In the literature, process quality is often divided into 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, pre-literacy, or math skills (Kluczniok and Roßbach 2014; Pianta et al. 2005; Ulferts and Anders 2016). Thereby, researchers capture the quality and quantity of interactions and processes (Anders et al. 2012; Burchinal et al. 2008; Tietze et al. 2013; Ulferts and Anders 2016), including the frequency of implemented educational activities (e.g. Barenthien et al. 2019; La Paro et al. 2009), which are in the focus of our study.

Educational activities

Educational activities are learning opportunities for children to develop specific skills or fields of knowledge. They can be of varying length, frequency, and content, and they are directly connected to preschoolers' learning gains (Connor, Morrison, and Slominski 2006; Piasta et al. 2015). The domain of language and pre-literacy plays a particular pivotal role in preschools (Gerdes and Segal 2011; Viernickel and 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 pre-literacy activities have a positive effect on children's language and literacy skills (Aram and Biron 2004; Gettinger and Stoiber 2008; Lonigan et al. 1999). Moreover, research has demonstrated that language and pre-literacy skills are highly predictive of later cognitive performance and academic outcomes, such as reading and writing (Lonigan, Allan, and Lerner 2011; National Institute of Child Health and Human Development Early Child Care Research Network 2000; Sammons et al. 2008).

Early childhood educators either prepare educational activities in a more formal, directed way or recognize and utilize situations in the preschool routine or in play situations as learning opportunities. The latter is particularly prominent in child-centered approaches (Wieduwilt, Lehrl, and Anders 2021) 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 educator-directed language programs for a selected group of children showed only little or no impact on child outcomes (e.g. Wolf, Schroeders, and Kriegbaum 2016).

According to Fröhlich-Gildhoff et al.'s (2011) competence model, several aspects influence early childhood educators' intention to act and implementation of an action (e.g. the pedagogical use of situations in the daily preschool routine): knowledge and skills, but also the current motivation to act as well as the perception and analysis of a given situation, particularly relevant in child-centered approaches. The model indicates

that in order to implement high-quality educational activities early childhood educators' engagement and investment of time as well as resources are necessary. Unfortunately, research has shown that early childhood educators are particularly vulnerable to developing burnout symptoms (e.g. Blöchliger and Bauer 2017; Jungbauer and Ehlen 2015; Løvgren 2016; Maslach and Pines 1977; Viernickel et al. 2013), constituting the opposite of engagement (Maslach and Leiter 1997).

Burnout symptoms in early childhood educators

The burnout syndrome is characterized by emotional exhaustion, depersonalized or cynical attitudes, and a subjectively experienced lack of accomplishment (Maslach, Schaufeli, and Leiter 2001). Emotional exhaustion is the core component of and central to burnout (Kristensen et al. 2005); it describes a perceived overload and depletion of emotional and physical resources. Burnout is often conceptualized as response to prolonged stress on the job (Maslach, Schaufeli, and Leiter 2001). 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. Because burnout symptoms develop over time (Maslach and Leiter 2017) and frequently remain undiscovered in earlier stages, affected staff often stays in the workforce for a long time. From teaching personnel of higher age groups or from other professions we know that their work is already impacted and they tend to show reduced job performance and worse client outcomes (e.g. Klusmann, Richter, and Lüdtke 2016; Kop, Euwema, and Schaufeli 1999; Leiter and Maslach 1998; Parker and Kulik 1995). However, little is known about the work-related consequences of burnout symptoms in early childhood educators.

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 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 early childhood educators 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. early childhood educators in relation to preschool quality: In 1986, Hildebrand and Seefeldt investigated early childhood educators' 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 early childhood educators 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

early childhood educators 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 (Bianchi, Schonfeld, and Laurent 2015; Nadon, De Beer, and Morin 2022) and burnout symptoms are often regarded as a transition to mental disorders such as depression (Maslach and Leiter 2017), we also review research on depressive symptoms of early childhood educators and preschool quality indicators. Inspired by the far more advanced research on maternal depression and parental behavior (e.g. Campbell, Cohn, and 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, Whitebook, and Weinstein (2007) identified depression symptoms as risk for less educator 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, Buettner, and Snyder 2014; Kwon et al. 2019; Sandilos et al. 2015).

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 directly transferred. 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 early childhood educators' burnout or depressive symptoms on educator sensitivity or more general ratings of global preschool quality, while 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 early childhood educators and the frequency of educational activities in the preschool classroom that are important aspects of preschool quality (cf. Barenthien et al. 2019) and predictors of positive child development (Connor, Morrison, and Slominski 2006; Piasta et al. 2015). We focus on the domain of language and pre-literacy as a key area of early childhood development. We look at activities embedded into daily routines common in child-centered approaches. In accordance with the reviewed literature, we assume that more exhausted early childhood educators show less educational activities. To estimate the effect of exhaustion beyond important aspects of structural quality, we also include early childhood educators' professional background, group and center characteristics.

The current study is based on 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 only on the development of school related outcomes more customary in other OECD countries (OECD 2016). Early childhood educators usually work together as a team either in defined groups or in (partially) open groups. Children often visit 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). Educators' task is to offer children a supportive relationship and to enable children's independent exploration (Jugend- & Kultusministerkonferenz 2004).

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. Participants were informed about ethical principles and data protection regulations of the study. Before participation, they had to give their consent online.[1]

We used reports of early childhood educators collected online in spring 2018. From all participating early childhood educators ($N = 1447$), 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 $N = 1389$ early childhood educators (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 educators per center. Each preschool center provided additional information on structural center characteristics (educator-child ratio, center concept). Tables 1 and 2 provide overviews of all descriptive data.

Table 1. Means, standard deviations, and correlations among early childhood educator-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 1065 to 1389; [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 early childhood educator, 3 = bachelor degree, 4 = master degree; [d]hours in the past year; [e]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; $^{**}p < .01$; $^{*}p < .05$.

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). 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 $\alpha = .74$).

Emotional exhaustion

We measured our main predictor variable, emotional exhaustion, with the respective subscale of the wide-spread Maslach Burnout Inventory (Maslach and Jackson 1981). We applied the German translation provided by Büssing and Perrar (1992) and slightly adapted two items for a better reading flow. Early childhood educators specified their agreement with nine items (e.g. 'I feel emotionally drained from my work'[2]) 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 $\alpha = .93$).

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 et al. 2013; Sandilos et al. 2018; Schipper, Riksen-Walraven, and Geurts 2006; Tietze et al. 2013), we included a number of additional variables into the analyses: early childhood educators' professional background (highest educational degree, number of training hours in the past twelve months, years of working experience in preschool settings) and group characteristics, such as number of children, average age of children, and proportion of migrant children. We defined migrant children as having at least one parent with another first language than German. In addition, we included the fulltime-equivalent educator–child ratio for each center and whether the center followed an open concept, meaning whether the pedagogical work is done across groups. As this usually increases the reported number of children to be cared for by early childhood educators, the information is necessary for the exact interpretation of these numbers.

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 and 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 early childhood educators' professional background and group characteristics were specified at the level of the individual educator, educator–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 non-normality robust standard errors to handle missing data (0.0%–16.6% missing). On the early childhood educator 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

Early childhood educators indicated that on average language and pre-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, early childhood educators 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 Tables 1 and 2 reveal, we found a significant negative correlation between emotional exhaustion and the frequency of educational activities. From individual early childhood educator 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.

Role of emotional exhaustion

Our main research question addressed the association between early childhood educators' 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 per se was able to predict the frequency of educational activities and if yes, to what extent.

Table 3. Frequency of educational activities: Results from multilevel modeling.

		Model 1		Model 2	
		β	*SE* (*β*)	*B*	*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; **$p < .01$; *$p < .05$.

We found a negative effect of exhaustion levels ($\beta = -.15$); the model explained 2% of the overall variance on the level of the early childhood educator.

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 ($\beta = -.16$). This means 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 pre-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 ($\beta = .05$). The model explained 5% of the overall variance on the level of the early childhood educator, but was not able to significantly explain variance at the level of the center.

Discussion

This study aimed at investigating the relationship between symptoms of emotional exhaustion in early childhood educators and the quantity of educational activities in the preschool classroom. We focused on activities promoting language and pre-literacy embedded into daily routines. Our findings support the assumption that early childhood educators 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, Richter, and Lüdtke 2016; Maslach, Schaufeli, and Leiter 2001; Parker and Kulik 1995), even in the ECEC context (Jennings 2015). In the present study, we examined the neglected relationship between early childhood educators' 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 preschool quality research. 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 early childhood educators 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 early childhood educators' motivation to act and their perception and analysis of a suitable situation (cf. competence model of Fröhlich-Gildhoff, Nentwig-Gesemann, and Pietsch 2011). Support for this assumption comes from research demonstrating that burnout symptoms are negatively related to motivation in top amateur rugby players (Cresswell and Eklund 2005) and to attention in burnout patients (Sandström et al. 2005). Of course, this explanation has to be empirically evaluated in prospective studies on early childhood educators, 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 early childhood educators 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 educator of the same group might still initiate a high amount of activities or even compensates the missing activities of the exhausted educator. Third, for some groups, there were several early childhood educators responding to the questions. But due to the nature of our data, we were unable to specify a third level of groups. Fourth, we cannot draw conclusions about the associations of a burnout syndrome with high scores on all three components and educational activities, as the focus of this study was on symptoms of emotional exhaustion. 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 early childhood educators' emotional exhaustion. Additional ideas for future investigations are to measure both quantity and quality indicators of educational activities, to investigate the effect on other learning fields (e.g. math or science activities) and within more educator-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 educators' depressive symptoms (Pianta et al. 2005) and high-quality care (Kluczniok and Roßbach 2014; Roux and Tietze 2007; Tietze et al. 2013).

Conclusion

The study makes an important contribution to the investigation of early childhood educators' burnout symptoms and quality of center care by exploring emotional exhaustion levels and the neglected link to the quantity of educational activities promoting children to engage with language and pre-literacy. The results clearly indicated that exhausted early childhood educators reported fewer educational activities. Therefore, we recommend greater consideration of early childhood educators' occupational well-being as important prerequisite for quality care in preschool settings, both in research and in policy. Hence, we call for more empirical studies investigating the consequences of early childhood educators' exhaustion symptoms on pedagogical routines and child outcomes and we propose the integration of educators' exhaustion into quality models. Further, we suggest that ECEC policy promotes strong interventions to reduce exhaustion in early childhood educators. For example, Guo et al. (2022) suggest that stakeholders should ensure that early childhood educators have a sense of return for their work investment. This may be expressed by the general increasing societal appreciation for their work or more salary. Further, educators' initial and in-service training should address ways to prevent and to buffer exhaustion symptoms. Finally, since increased exhaustion has been shown to be particularly related to dissatisfaction with parents and team collaboration (Trauernicht, Besser, and Anders 2022), educators should be better trained in dealing with challenging families and in cultivating a positive team climate. This may not just result in a more pleasant working environment, but also increase the quality of center care and cushion detrimental effects for early childhood educators and children.

Notes

1. This study was reviewed by the Ethics Committee of the University of Bamberg and received an approval granted (No. 2022-03/11).
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ORCID


Mareike Trauernicht http://orcid.org/0000-0003-4360-9812

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Appendix

Table A1. 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*.