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BURNOUT RISK AMONG GERMAN AND UKRAINIAN KINDERGARTEN TEACHERS DEPENDING ON INDIVIDUAL STRESS COPING STRATEGIES

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Introduction. Educators in early childhood education are exposed to a variety of stresses that can lead to negative stress reactions. In order to keep educators healthy, a balance between stress on the one hand and resources on the other is necessary.

The aim of this research – to investigate the relationship between the risk of burnout depending on individual stress coping strategies as a personal resource and to uncover possible differences between two countries in order to derive country-specific preventive measures.

Materials and methods of the research. 185 educators from Magdeburg and the surrounding area and 107 Ukrainian educators from Kharkiv took part voluntarily in the survey. The MBI-GS was used to assess the risk of burnout. Stress coping strategies as a personal resource were recorded using the Stress Coping Questionnaire (SVF).

Results. German educators (D) mainly dealt with stress using negative strategies, whereas Ukrainian kindergarten teachers (U) mainly resorted to positive stress coping strategies. 34.6% (D) and 42.1% (U) of kindergarten teachers showed some burnout symptoms. The risk of burnout was increased for 4.9% of German and 2.8% of Ukrainian teachers. All German educators at risk of burnout used negative stress coping strategies ($p = 0.002$), whereas only two of the Ukrainian teachers at risk of burnout used these strategies ($p = 0.003$).

Conclusions. Preventive measures that lead to stress reduction should be established primarily to keep teachers healthy. To complete this, the teachers affected could be given the opportunity to take part in stress coping courses to reduce the risk of burnout. Advice based on the analysis of individual stress coping strategies can be a helpful basis for this.

Key words: burnout, educators, stress coping, country comparison

Introduction

Educators in daycare centers are exposed to a variety of stresses that can lead to health problems and reduced ability to work [1, 2]. The main stress factors include noise [3], an increased risk of infection with rubella, pertussis, mumps, varicella and hepatitis A compared to the general population [4] and, in addition, a widespread shortage of staff [5] and the associated large number of children to be cared for [6]. In addition to the already mentioned shortage of staff, insufficient care ratios, work tasks that have to be completed under time pressure and groups that are too large [7], educators in Switzerland mainly experienced negative communication patterns [8]. Due to these numerous physical and psychological stress factors, educators have a high risk of developing burnout syndrome [7–9].

According to the World Health Organization (WHO), stress is defined as an imbalance between the demands placed on a person and their knowledge and skills. Affected people feel stress when the coping methods available to them are not considered effective. According to the stress model according to Lazarus [10], the person first assesses the situation (threat, loss, challenge) in a primary assessment, and then assesses their own resources. If the situation is either assessed as irrelevant or the demands can be met with the available resources, no stress reaction occurs. If, on the other hand, the resources are insufficient, a stress reaction is triggered. The stress reaction can in turn be influenced by personal stress enhancers in the form of individual motives, attitudes and assessments. For example, an increased willingness to make an effort can contribute to an intensification of the stressful situation.

Personal resources and resources from the environment can reduce the effects of stress. The importance of work resources in the development of burnout is illustrated by the Job Demands Resources model [11]. According to this model, excessive work demands (physical, psychological or social aspects of work that cause long-term stress) lead to exhaustion. Too few or poor work resources (physical, psychological, social, organizational working conditions that are

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necessary to achieve goals) reduce work engagement. According to this model, work engagement is seen as the opposite of burnout. It can be increased by appropriate work resources such as support, reward or feedback [12].

According to Hobfoll's theory of resource conservation, people try to protect their resources from loss and constantly build up new resources [13]. According to Hobfoll, burnout is seen as an ongoing process that is associated with the gradual disappearance of resources. The loss of resources is understood as a mismatch between requirements and one's own personal possibilities. In the case of a risk of burnout, an imbalance between requirements and resources is also assumed.

According to Darius et al. [2], the stress factors mentioned above lead to impaired mental health and, as a result, reduced ability to work. German kindergarten teachers are less successful than their Ukrainian colleagues in coping with mental work demands [2]. The same sample will be used to investigate whether and to what extent kindergarten teachers are also affected by an increased risk of burnout and whether the risk of burnout differs between German and Ukrainian kindergarten teachers depending on personal resources in terms of a successful stress coping strategy.

Suggestions for preventive measures will then be derived from the results.

The aim of this research – to investigate the relationship between the risk of burnout depending on individual stress coping strategies as a personal resource and to uncover possible differences between two countries in order to derive country-specific preventive measures.

Materials and methods of the research

For the survey of the German sample, public and private providers of various daycare centers in Magdeburg and the surrounding area were written to with a request for support. Eleven of the 24 providers contacted expressed interest, 28 institutions (out of a total of 135) took part in the study, which was carried out between 5/2017 and 4/2019.

The recruitment of Ukrainian kindergarten teachers took place in a similar way. The survey of this subsample was carried out between 09/2021 and 12/2021.

A positive vote from the Ethics Committee is available for both samples (positive vote from the Ethics Committee of the Otto von Guericke University Magdeburg at the Medical Faculty with registration number 40/17 and the positive vote from the Committee for Ethics and Bioethics of the Kharkiv National Medical University (excerpt from Protocol No. 4 dated December 7, 2022, addendum).

Sample description

209 educators took part voluntarily in the questionnaire survey. On average, they had been working as educators for (21.8 ± 15.2) years. Exclusion criteria were incompletely filled out questionnaires (n = 18) and less than 1 year of professional experience (n = 6 educators). Ultimately, the data from 185 educators could be used.

116 of the Ukrainian educators had completed questionnaires. Nine educators were excluded from the evaluation due to insufficient professional experience. So the questionnaires of 107 Ukrainian educators were included in the data analysis.

Questionnaires

The socio-demographic information on age, gender, marital status and professional experience was collected at the beginning of each study using a self-developed questionnaire.

The stress coping questionnaire according to Janke et al. [14] was used to assess individual stress coping strategies. The test measures the tendency to react with certain stress coping strategies in stressful situations. The procedure covers 20 characteristics. Each characteristic consists of 6 items, which are rated on a five-point scale from 0 = "not at all" to 4 = "very likely". Depending on the answers given, a distinction is then made between positive and negative strategies.

The extent of the burnout risk was recorded using the Maslach Burnout Inventory (MBI-GS) [15]. Using 16 questions, the extent of the burnout symptoms is determined in the categories "emotional exhaustion", "depersonalization" and "personal accomplishment". The possible answers are how often you feel each item on a seven-level scale from accomplishment "never" (0) to "daily" (6) in the past. The mean value is calculated for each dimension. The individual burnout risk was then calculated according to Kalimo et al. [16]. Below a point value of 1.49, there is no risk of burnout (symptoms a few times a year). Between 1.5 and 3.49 points, some burnout symptoms (symptoms a few times a month). If the calculated

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value is above 3.5 points, there is a burnout risk (symptoms several times a week or daily).

The statistical evaluation of the raw data was carried out using the SPSS program, version 26 (IBM, Armonk, NY, USA). First, descriptive analyses and tests for normal distribution were carried out. Differences in categorical data were calculated using the Chi^2 test or Fisher's exact test. The Mann-Whitney U test was used for ordinal scaled data. A stepwise regression analysis was carried out to assess the influence of individual stress coping strategies on the risk of burnout. To assess the influence of stress coping methods on the risk of burnout with country affiliation as a covariate, a covariance analysis was performed according to the general linear model; the effect sizes are given as partial eta square (η^2). All test procedures are based on a significance level of $p < 0.05$.

Results of the research and their discussion

The sociodemographic data and the subjectively perceived stress situation of this sample have already been published [2]. For a brief overview, the age distribution is shown in (Table 1).

Compared to the German sample, the Ukrainian teachers tended to be somewhat older, but this difference was not significant.

The two samples also did not differ in terms of the number of years of professional experience – teachers from both countries had been working for around 25 years.

Stress coping strategies

Most Ukrainian teachers (82.2%) and a good half of German teachers (50.8%) used positive stress coping strategies. With a share of 47.6%, German teachers used negative stress coping strategies significantly more often, whereas these were only used by 15.9% of Ukrainian test subjects ($p < 0.001$; Table 2).

For the other teachers, positive and negative stress coping strategies were in a balanced relationship.

Even in the evaluation of the individual stress coping strategies, which can be clearly classified as positive strategies, highly significant differences ($p < 0.001$) were found in the country comparison (Table 3). The median scores of the Ukrainian participants were higher than those of the German teachers. The only exception was the evaluation of the positive coping strategy "situation control attempt" where no significant differences were found ($p = 0.513$).

German kindergarten teachers used significantly more negative stress coping strategies than the Ukrainian test subjects ($p = 0.030$). There were particularly significant differences in the negative

Table 1

Distribution of kindergarten teachers in the age groups

Age group	Age	Germany	Ukraine	p Chi^2
		[N (%)]		
Age group I	< 35 years	66 (35.7)	25 (23.4)	0.051
Age group II	35–45 years	23 (12.4)	21 (19.6)	
Age group III	⩾ 46 years	96 (51.9)	61 (57.0)	
Total number N (%)		185 (100)	107 (100)	

Table 2

Numbers and frequency of stress coping strategies used by kindergarten teachers in both countries

Name	Germany	Ukraine	p Chi^2
Coping strategy [N (%)]			
Positive strategies	94 (50.8)	88 (82.2)	< .001
Negative strategies	88 (47.6)	17 (15.9)	
Balanced strategies	3 (1.6)	2 (1.9)	

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Table 3

Dimensions of the individual coping strategies in both countries

Stress coping strategies	Germany	Ukraine	p Mann-Whitney-Test
	Mean ± standard deviation Median (min–max) [95% CI]		
1	2	3	4
Trivialization	10.90 ± 3.53 11 (0–20) [10.41–11.44]	15.93 ± 3.86 16 (6–24) [15.20–16.67]	< 0.001
Downplaying by comparing with others	9.23 ± 3.91 9 (0–22) [8.67–9.81]	12.30 ± 3.75 13 (3–20) [11.58–13.02]	< 0.001
Defence against guilt	10.11 ± 3.41 10 (0–24) [9.63–10.63]	11.88 ± 3.68 12 (0–20) [11.17–12.58]	< 0.001
Distraction from situations	12.32 ± 3.20 13 (3–20) [11.83–12.76]	15.21 ± 4.10 15 (6–24) [14.43–16.0]	< 0.001
Substitute satisfaction	10.34 ± 5.02 10 (0–23) [9.63–11.10]	14.85 ± 4.56 15 (4–24) [13.97–15.73]	< 0.001
Search for self-affirmation	11.08 ± 3.76 11 (0–21) [10.55–11.65]	13.66 ± 3.90 14 (2–22) [12.92–14.41]	< 0.001
Relaxation	11.0 ± 4.16 11 (0–23) [10.40–11.62]	16.33 ± 4.40 16 (3–24) [15.48–17.17]	< 0.001
Situation control attempt	15.98 ± 3.24 16 (8–24) [15.48–16.48]	16.25 ± 3.50 16 (7–24) [15.58–16.92]	.513
Reaction control attempt	14.66 ± 3.37 15 (3–23) [14.18–15.17]	18.70 ± 3.54 19 (9–24) [18.02–19.38]	< 0.001
Positive self-instruction	15.11 ± 3.98 15 (1–24) [14.53–15.70]	17.92 ± 3.97 18 (9–24) [17.15–18.68]	< 0.001
Need for social support	15.98 ± 4.31 16 (3–24) [15.33–16.59]	15.08 ± 4.79 16 (0–24) [14.17–16.0]	.226
Avoidance tendencies	12.01 ± 4.10 12 (1–24) [11.42–12.62]	17.09 ± 3.39 17 (9 - 24) [16.44–17.74]	< 0.001
Flight tendency	8.71 ± 4.85 8 (0–23) [8.06–9.48]	8.93 ± 4.20 8 (0–24) [8.12–9.73]	.379
Social isolation	7.60 ± 4.48 7 (0–22) [6.97–8.28]	7.50 ± 5.26 7 (0–22) [6.50–8.51]	.622

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Continuation of Table 3

Stress coping strategies	Germany	Ukraine	p Mann-Whitney-Test
	Mean ± standard deviation Median (min–max) [95% CI]		
1	2	3	4
Mental repetition	15.59 ± 4.96 15 (4–24) [14.84–16.29]	13.12 ± 4.65 13 (0–22) [12.23–14.01]	< 0.001
Resignation	7.83 ± 4.13 7 (0–20) [7.27–8.48]	7.50 ± 4.03 7 (1–20) [6.72–8.27]	.456
Self-pity	9.54 ± 4.37 9 (0–21) [8.92–10.20]	8.93 ± 4.75 9 (0–24) [8.01–9.84]	.246
Self-accusation	11.41 ± 4.18 11 (1–24) [10.84–12.06]	9.44 ± 4.18 10 (0–20) [8.64–10.24]	< 0.001
Aggression	7.37 ± 4.01 7 (0–21) [6.81–7.98]	6.82 ± 4.26 7 (0–20) [6.01–7.64]	.354
Taking pharmaceuticals	1.72 ± 2.41 0 (0–12) [1.37–2.08]	3.50 ± 3.91 2 (0–16) [2.75–4.24]	< 0.001
Positive strategies	12.12 ± 2.55 12 (4–20) [11.75–12.50]	15.32 ± 2.56 15 (9–21) [14.83–15.81]	< 0.001
Negative strategies	10.24 ± 3.61 10 (3–20) [9.73–10.79]	9.21 ± 3.77 9 (1–19) [8.49–9.94]	.030

stress coping strategies of "mental repetition" and "self-accusation" when comparing the samples ($p < 0.001$).

Overall, it was found that Ukrainian kindergarten teachers resorted to positive stress coping strategies more often than German kindergarten teachers. The median in the Ukrainian sample was 15 (9–21) points higher than the value in the German sample [12 (4–20)]; the difference was statistically significant ($p < 0.001$).

Burnout risk

The majority of the educators overall showed little emotional exhaustion (Table 4). Almost 23% of the German and 25% of the Ukrainian kindergarten teachers were already highly emotionally exhausted. There were no statistically significant differences in this dimension when comparing countries.

With regard to the burnout dimension "depersonalization", the German and Ukrainian teachers differed significantly ($p < 0.001$). Here, the Ukrainian participants more frequently showed an average and high degree of "depersonalization".

Regarding the burnout dimension "personal accomplishment", no significant differences were found in the country comparison ($p = 0.420$). Many participants showed high performance, including 128 (69.2%) German and 69 (64.2%) Ukrainian kindergarten teachers.

According to Kalimo et al. [16], the burnout risk was calculated. The frequency distribution of the burnout groups showed no significant differences in the country comparison ($p = 0.359$). Most of the kindergarten teachers were in the "no burnout" group, with 60.5% (D) and 55.1% (U). 34.6% of German and 42.1% of Ukrainian test subjects showed

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Table 4

Number and frequency of the degrees of severity of the individual burnout dimensions and burnout risk in both countries

Dimension	Degrees of severity	Germany	Ukraine	p Chi²
		[N (%)]		
Emotional exhaustion	Low (< 2.0 points)	108 (58.4)	59 (55.1)	.850
	Average (2.01–3.19 points)	35 (18.9)	21 (19.6)	
	High (> 3.19 points)	42 (22.7)	27 (25.2)	
Depersonalization	Average (1.01–2.19 points)	129 (69.7)	51 (47.7)	< 0.001
	High (> 2.19 points)	34 (18.4)	36 (33.6)	
	Low (< 4.01 points)	22 (11.9)	20 (18.7)	
Personal accomplishment	Low (< 4.01 points)	24 (13.0)	20 (18.7)	.420
	Average (4.01–4.99 points)	33 (17.8)	18 (16.8)	
	High (> 4.99 points)	128 (69.2)	69 (64.5)	
Burnout risk	No Burnout	112 (60.5)	59 (55.1)	.359
	Some burnout symptoms	64 (34.6)	45 (42.1)	
	Serious burnout	9 (4.9)	3 (2.8)	

some burnout symptoms several times a month and only a few kindergarten teachers showed a risk of serious burnout, with a frequency of 4.9% (D) and 2.8% (U).

After evaluating the points achieved in the individual dimensions, the following differences emerged: "emotional exhaustion" was low in both German and Ukrainian kindergarten teachers (< 2.01 points; Table 5). When comparing countries, there were no significant differences in this dimension (p = 0.784). The median score was 1.8 (0.0–5.4) points in the German sample and 2.0 (0.0–6.0) points in the Ukrainian comparison group.

With regard to "depersonalization", there were significant differences (p < 0.05) between German and Ukrainian study participants. In the German sample, the median score was 0.4 (0.0–4.2). This value indicates a rather low level of severity in this burnout dimension. At 1.1 (0.0–6.0) points, the median score in the Ukrainian comparison group is higher than that of German teachers.

No significant differences were found in the dimension of "personal accomplishment" between the kindergarten teachers from Germany and Ukraine (p = 0.182). The personal accomplishment of the teachers in both countries is high.

The total score calculated according to Kalimo et al. [16] to determine the individual burnout risk was 1.2 (0.0–4.3) for the German and 1.4 (0.0–4.2) for the Ukrainian kindergarten teachers. The burnout risk was therefore in the low range. There were no significant differences between the groups (p = 0.266; Table 5).

Burnout risk depending on individual stress coping strategies

Statistically significant differences were found in the risk of burnout depending on the stress coping strategy. Positive stress coping strategies were used predominantly by test subjects in both samples who were not at increased risk of burnout. 58.9% (D) and 91.5% (U) of the kindergarten teachers without an increased risk of burnout used positive stress coping strategies. 73.3% of the Ukrainian study participants who showed some burnout symptoms also used positive stress coping strategies more frequently, whereas German test subjects with some burnout symptoms resorted more frequently to negative stress coping strategies (56.3%). Nine German and three Ukrainian kindergarten teachers showed an increased risk of burnout syndrome. All German teachers used negative stress coping strategies (p = 0.002), and two of the three Ukrainian teachers did so (p = 0.003; Table 6).

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Table 5

Comparison of the severity of burnout dimensions according to Maslach et al. [15] and the burnout risk according to Kalimo et al. [16] of kindergarten teachers between the countries

Name	Germany	Ukraine	p Mann-Whitney-Test
	Mean ± standard deviation Median (min-max) [95% CI]		
Emotional exhaustion [points]	2.03 ± 1.32 1.8 (0.0–5.4) [1.85–2.23]	2.10 ± 1.40 2.0 (0.0–6.0) [1.83–2.36]	.784
Depersonalization [points]	0.88 ± 1.01 0.4 (0.0–4.2) [0.74–1.03]	1.23 ± 1.28 1.1 (0.0–6.0) [0.99–1.48]	.019
Personal accomplishment [points]	4.98 ± 0.89 5.2 (1.7–6.0) [4.85–5.11]	4.96 ± 1.22 5.2 (1.0–6.0) [4.72–5.19]	.182
Burnout risk [points]	1.40 ± 0.88 1.2 (0.0–4.3) [1.28–1.54]	1.52 ± 0.94 1.4 (0.0–4.2) [1.34–1.70]	.266

Table 6

Number and frequency of the burnout dimension and the burnout risk depending on the stress coping strategies in both countries

Name	Germany		p Chi²	Ukraine		p Chi²
	stress coping strategy			stress coping strategy		
	positive	negative		positive	negative	
	[N (%)]			[N (%)]		
Emotional exhaustion						
Low	66 (61.1)	41 (38.0)	.020	55 (93.3)	3 (5.1)	< 0.001
Average	14 (40.0)	20 (57.1)		18 (85.7)	2 (9.5)	
High	14 (33.3)	27 (64.3)		15 (55.6)	12 (44.4)	
Depersonalization						
Low	73 (56.6)	53 (41.1)	.026	46 (90.2)	4 (7.8)	.020
Average	16 (47.1)	18 (52.9)		30 (83.3)	5 (13.9)	
High	5 (22.7)	17 (77.3)		12 (60.0)	8 (40.0)	
Personal accomplishment						
Low	5 (20.8)	19 (79.2)	.017	18 (90.0)	2 (10.0)	.464
Average	19 (57.6)	14 (42.4)		13 (72.2)	5 (27.8)	
High	70 (54.7)	55 (43.0)		57 (82.6)	10 (14.5)	
Burnout-Risk						
No burnout	66 (58.9)	43 (38.4)	.002	54 (91.5)	3 (5.1)	.003
Some burnout Symptoms	28 (43.8)	36 (56.3)		33 (73.3)	12 (26.7)	
Burnout risk	0 (0.0)	9 (100.0)		1 (33.3)	2 (66.7)	

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The difference in the risk of burnout becomes clear when one compares the mean values of the individual dimensions of the MBI and the overall risk of burnout with the type of stress coping. In particular, those educators who primarily use negative stress coping strategies have a high risk of burnout (Table 7).

A step-by-step regression analysis was used to examine whether and to what extent the individual characteristics of stress coping intercorrelate with the weighted overall burnout risk score. The regression analysis was carried out separately in both samples. In the German sample, the tendency to resignation determines the burnout risk in the majority of cases (r = .435). If people also react with social isolation, avoidance and continued mental preoccupation, the burnout risk increases. The four strategies of stress coping together explain 51% of the variance (Table 8).

In the Ukrainian sample, it was mainly self-pity and positive self-instruction that together explained 46% of the variance (Table 8). To find out what effect both the individual stress coping strategies overall and nationality have on the burnout risk, a correlation analysis was carried out using the general linear model (Table 9).

The stress coping strategy has a medium effect on the burnout risk overall. After analyzing the partial η^2, it explains the effect of 7% of the emotional exhaustion, 5% of the cynicism and 8% of the burnout risk overall.

The strategy for coping with stress has no influence on performance. Nationality has a small influence on the risk of burnout, explaining 2% of the variance. Nationality has a small effect on cynicism, explaining just under 5% of the variance.

This study reveals the connection between the risk of burnout and various stress coping strategies among kindergarten teachers from Germany and Ukraine. A risk of burnout was found in 4.5% of German and 2.8% of Ukrainian kindergarten teachers. In particular, negative strategies such as resignation, social isolation, avoidance tendencies and mental preoccupation have an influence on the development of burnout syndrome in the German sample. In the Ukrainian sample, the risk of burnout is more likely to be determined by self-pity and positive self-instruction.

Table 7

Scores of the burnout dimension and the burnout risk depending of the stress coping strategies in both countries

Name	Germany		Ukraine		p Anova	p Bonferroni
	Stress coping strategy					
	positive	negative	positive	negative		
	Mean ± standard deviation [95% Confidence interval]		Mean ± standard deviation [95% Confidence interval]			
Emotional exhaustion	1.7 ± 1.1 [1.52; 1.99]	2.3 ± 1.4; [2.03; 2.63]	1.8 ± 1.2 [1.55; 2.06]	3.6 ± 1.5 [2.85; 4.35]	< .001	PS-D vs. NS-D: .016 PS-D vs. NS-U: < .001 NS-D vs. NS-U: .001 PS-U vs. NS-D: .039 PS-U vs. NS-U: < .001
Depersonalization	0.7 ± 0.8 [0.49; 0.81]	1.1 ± 1.2 [0.89; 1.39]	1.0 ± 1.1 [0.80; 1.26]	2.3 ± 1.7 [1.43; 3.22]	< .001	PS-D vs. NS-D: .015 PS-D vs. NS-U: < .001 NS-D vs. NS-U: < .001 PS-U vs. NS-U: < .001
Personal accomplishment	5.2 ± 0.7 [5.05; 5.32]	4.7 ± 1.0 [4.53; 4.97]	4.9 ± 1.3 [4.67; 5.20]	4.9 ± 1.1 [4.42; 5.50]	.038	PS-D vs. NS-D: .024
Burnout risk	1.2 ± 0.7 [1.02; 1.29]	4.7 ± 1.0 [1.47; 1.89]	1.3 ± 0.8 [1.17; 1.53]	2.4 ± 0.9 [2.01; 2.90]	< .001	PS-D vs. NS-D: < .001 PS-D vs. NS-U: < .001 NS-D vs. NS-U: .004 PS-U vs. NS-U: < .001

Note. PS-D = Positive Strategies Germany; NS-D = Negative Strategies Germany; PS-U = Positive Strategies Ukraine; NS-U = Negative Strategies Ukraine.

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In a recent study by Li et al. [17] among Chinese preschool teachers, the prevalence rate of burnout was 53%, which is comparable to other studies on kindergarten teachers [1] or other professional groups such as emergency doctors [18]. However, the present study [17] is not comparable because the version of the questionnaire contains 15 items and the burnout classification was determined by the authors themselves according to the percentile. Therefore, the prevalence rate of 53% appears too high. In the present study, a burnout risk of 4.5% was found among German kindergarten teachers and 2.8% among Ukrainian kindergarten teachers, which is more in line with the prevalence values found among teachers [19].

Burnout is associated with low self-confidence [20]. This study has shown that self-pity among Ukrainian kindergarten teachers has an influence on the development of burnout syndrome. This is consistent with the results of a study by Heinrich et al. [21], in which improved self-efficacy expectations led to better work ability in the subjects. For this reason, it is important to strengthen the self-confidence of kindergarten teachers with a higher or high risk of burnout. This should be easy to implement through positive feedback from coping or colleagues. According to a study by Bellé et al. [22], a good feedback culture increased job satisfaction among kindergarten teachers. Jungbauer and Ehlen [7] also found in their questionnaire survey that social support and teamwork are very important for better job satisfaction and thus better well-being among kindergarten teachers. The stronger the support, the greater the job satisfaction and the lower the rate of depression [23].

Table 8

Description of the steps of the regression analysis in the German and Ukrainian samples

Models	R	R^2	R^2 corrected	SF	F	df	p
Germany							
(Constant). Resignation	.435	.190	.185	.793	42.826	1; 183	< 0.001
(Constant). Resignation. Social isolation	.462	.213	.205	.783	24.702	2; 182	< 0.001
(Constant). Resignation. Social isolation. Avoidance tendencies.	.485	.235	.222	.774	18.520	3; 181	< 0.001
(Constant). Resignation. Social isolation. Avoidance tendencies. Continued mental preoccupation	.508	.258	.241	.765	15.620	4; 180	< 0.001
Ukraine							
(Constant). Self-pity	.389	.151	.143	.866	18.675	1; 105	< 0.001
(Constant). Self-pity. Positive self-instruction	.464	.216	.201	.837	14.293	2; 104	< 0.001

Table 9

Effects of individual stress coping strategies on burnout risk with country affiliation as a covariate

Dependent variable	Germany			Ukraine			Stress coping strategies		Country	
	Mean	SE	[95-%-CI]	Mean	SE	[95-%-CI]	p	η^2	p	η^2
Emotional exhaustion	1.95	0.097	[1.76; 2.14]	2.23	0.129	[1.98; 2.49]	< .001	.069	.085	.010
Depersonalization	0.82	0.082	[0.66; 0.98]	1.33	0.108	[1.12; 1.54]	< .001	.052	< .001	.045
Personal accomplishment	5.01	0.076	[4.85; 5.15]	4.92	0.101	[4.72; 5.12]	.113	.009	.513	.001
Burnout Risk	1.35	0.065	[1.22; 1.47]	1.62	0.086	[1.45; 1.79]	< .001	.078	.013	.021

Note. SE = standard error; CI = Confidence interval; η^2: < 0.06 – mild effect, 0.06–0.14 – moderate effect, > 0.14 – high effect.

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A German sample has already shown that kindergarten teachers with an increased risk of burnout were more likely to deal with stress using negative strategies [24].

In other social occupational groups, too, connections between work-related stress and other psychiatric illnesses, such as anxiety and depression, have been demonstrated in people working in the health sector [25]. Overall, kindergarten teachers had a significantly higher perception of stress compared to the general population [7]. An increased level of work-related stress was also found in the teaching profession [26]. Stress coping strategies used by kindergarten teachers thus showed effects on burnout syndrome and play an important role in reducing the consequences of stress. In order to reduce possible consequences of work-related stress, such as psychiatric illnesses, and to improve the way people deal with stress, particularly through the use of positive stress coping strategies, preventive measures should be established.

In order to prevent the development of burnout syndrome in educators, two approaches to behavioral and situational prevention are conceivable. In a multimodal approach, personal resources can be strengthened on an individual level (behavioral prevention). In stress coping courses, educators could increasingly acquire positive stress coping strategies. Individual resources can and should be strengthened, for example by implementing further training courses (relaxation courses, time management, etc.).

On the other hand, at the level of situational prevention, it can be ensured that more staff are hired in order to distribute the work across several shoulders or to ensure that working conditions are improved and thus to prevent stress and burnout. Promoting social resources, team development and coping skills can also contribute to a better situation and thus reduce the stress burden for the educators [7]. The development and strengthening of different skills can thus make the work of educators easier. Educators should in particular have the skills of conflict resolution, time management, self-efficacy expectations, empathy and a sense of coherence in order to be able to deal with professional situations in a more stress-free manner and thus prevent the development of burnout syndrome. Other situational prevention measures include improving work processes, improving working time arrangements and opportunities for self-determination and greater scope for action for educators. Particularly in connection with the demographic change in the world of work and the increasing ageing of educators, it is important to take preventive action. Intervention programs tailored to older educators have shown an effect [27] in strengthening the ability to work and maintaining the health of educators.

In addition to behavioral and situational prevention as primary prevention measures, the early detection of burnout as part of secondary prevention (occupational health care) and the integration into work after a long-term illness as part of tertiary prevention should not be neglected.

The implementation of occupational health care, as already required in Germany, should also be carried out in Ukrainian institutions in particular to complement the range of services on offer. During the consultation, the company doctor could identify the influence of personal factors that could have a negative impact on burnout. In particular, the first signs of increased over commitment and the use of negative stress coping strategies should be identified. It would also be possible to record burnout symptoms in the kindergarten teachers at an early stage in order to be able to counteract them in good time.

Limitations

Many providers of daycare centers in Magdeburg and the surrounding area did not respond to our letter requesting support for the study. This presumably led to a bias. The conditions at the providers interested in the study may be better than at the facilities of providers who did not support the study. The educators who took part in the study of their own accord after word of mouth may have had more burnout symptoms than the educators whose providers supported the study. With the support of the provider, the study was possible in the facility during working hours, which may have led to higher participation.

Conclusion

Negative stress coping strategies are associated with an increased risk of burnout. Stress coping courses should be offered more frequently to learn how to deal with stress in a positive way. At the level of social prevention, the working conditions for educators must be improved. This also includes a positive feedback culture and more support to keep educators motivated in their jobs.

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References

1. Hozo E, Sucic G, Zaja I. Burnout Syndrome Among Educators in Pre-school Institutions. Materia Socio Medica. 2015;27(6):399. DOI: https://doi.org/10.5455/msm.2015.27.399-403.

2. Darius S, Kuhrmeier M, Lysak M, Zavgorodnii I, Böckelmann I. Work load among german and ukrainian kindergarten teachers and its effects on work ability and mental health. Ukrainian Journal of Occupational Health. 2023;4:266-76. DOI: https://doi.org/10.33573/ujoh2023.04.266.

3. Chatzakis NS, Karatzanis AD, Helidoni ME, Velegrakis SG, Christodoulou P, et al. Excessive noise levels are noted in kindergarten classrooms in the island of Crete. European Archives of Oto-Rhino-Laryngology. 2014; 271(3):483-7. DOI: https://doi.org/10.1007/s00405-013-2442-z.

4. Kofahl M, Starke KR, et al. Vaccine-preventable infections in childcare workers. Dtsch Arztebl Int. 2020; 117(21):365-72. DOI: https://doi.org/10.3238/arztebl.2020.0365.

5. Losch D, Schulze J. Stressfaktoren in Kindertagesstätten [Stress factors in child day care centres]. Zentralblatt für Arbeitsmedizin, Arbeitsschutz und Ergonomie. 2015; 66(3):147-52. German. DOI: https://doi.org/10.1007/s40664-015-0070-8.

6. Rudow B. Beruf Erzieherin/Erzieher – mehr als Spielen und Basteln. Arbeits- und organisationspsychologische Aspekte: ein Fach- und Lehrbuch. Münster: Waxmann Verlag; 2017. German.

7. Jungbauer J, Ehlen S. Stressbelastungen und Burnout-Risiko bei Erzieherinnen in Kindertagesstätten: Ergebnisse einer Fragebogenstudie [Stress and Burnout Risk in Nursery School Teachers: Results from a Survey]. Das Gesundheitswesen. 2014;77(06):418-23. German. DOI: https://doi.org/10.1055/s-0034-1381995.

8. Bokor G, Bellè SL, Hedderich I. Arbeitsplatz Kindertagesstätte [Working place day care]. Zentralblatt für Arbeitsmedizin, Arbeitsschutz und Ergonomie. 2017; 67(2):91-8. German. DOI: https://doi.org/10.1007/s40664-016-0159-8.

9. Hisashige A. Occupational influences relative to the burnout phenomenon among Japanese nursery school teachers. Environ Res. 1993;63:219-28. DOI: https://doi.org/10.1006/enrs.1993.1142.

10. Lazarus RS, Folkmann S. Stress, appraisal, and coping. New York: Springer; 1984.

11. Demerouti E, Bakker AB, Nachreiner F, et al. A model of burnout and life satisfaction amongst nurses. J Adv Nurs. 2000;32:454-64. DOI: https://doi.org/10.1046/j.1365-2648.2000.01496.x.

12. Demerouti E, Nachreiner F. Zum Arbeitsanforderungen-Arbeitsressourcen-Modell von Burnout und Arbeitsengagement – Stand der Forschung [The job demands–job resources model of burnout and work engagement–state of the art]. Z. Arb. Wiss. 2019;73:119-30. German. DOI: https://doi.org/10.1007/s41449-018-0100-4.

13. Buchwald P, Hobfoll SE. Die Theorie der Ressourcenerhaltung: Implikationen für den Zusammenhang von Stress und Kultur. In: Genkova P, Ringeisen T, Leong F, editors. Handbuch Stress und Kultur. Interkulturelle und kulturvergleichende Perspektiven. Wiesbaden: Springer VS; 2013, p. 127–138. German. DOI: https://doi.org/10.1007/978-3-531-93449-5_8.

14. Janke W, Erdmann G, Kallus W. Stressverarbeitungsfragebogen. Handanweisung. Göttingen: Hogrefe; 2000. German.

15. Maslach C, Jackson SE, Leiter MP, Hrsg. MBI Manual. 3. Aufl. Palo Alto: Consulting Psychologists Press; 1996.

16. Kalimo R, Pahkin K, Mutanen P, et al. Staying well or burning out at work: Work characteristics and personal resources as long-term predictors. Work & Stress. 2003;17(2):109-22. DOI: https://doi.org/10.1080/02678370310001499 19.

17. Li S, Li Y, Lv H, et al. The prevalence and correlates of burnout among Chinese preschool teachers. BMC Public Health. 2020;20:160. DOI: https://doi.org/10.1186/s12889-020-8287-7.

18. Arora M, Asha S, Chinnappa J, et al. Review article: Burnout in emergency medicine physicians. Emergency Medicine Australasia. 2013;25:491-5. DOI: https://doi.org/10.1111/1742-6723.12135.

19. Seibt R, Hübler A, Steputat A, et al. Verausgabungs-Belohnungs-Verhältnis und Burnout-Risiko bei Lehrerinnen und Ärztinnen - ein Berufsgruppenvergleich [Effort-reward-ratio and burnout risk among female teachers and hospitalemployed female physicians. A comparison between professions.] Arbeitsmed Sozialmed Umweltmed. 2012;47:396-406. German.

20. Rössler W, Hengartner MP, Ajdacic-Gross V, et al. Zusammenhang zwischen Burnout und Persönlichkeit : Ergebnisse aus der Zürich-Studie [Association between burnout and personality: Results of the Zürich study]. Der Nervenarzt. 2013;84(7):799-805. German. DOI: https://doi.org/10.1007/s00115-013-3742-7.

21. Heinrich C, Grünhagen M, Köhler M, et al. "Work Ability Index" und Selbstwirksamkeitserwartung [Work Ability Index and the General Self-Efficacy Scale]. Präv Gesundheitsf. 2017;12:54-60. German. DOI: https://doi.org/10.1007/s11553-016-0555-0.

22. Bellè SL, Bokor G, Hedderich I. Arbeitszufriedenheit als Ressource der Erzieherinnen [Job satisfaction and resources for it in nursery school teachers]. Prävention und Gesundheitsförderung. 2017;12:167-73. German. DOI: https://doi.org/10.1007/s11553-017-0587-0.

23. Zinsser KM, Christensen CG, Torres L. She's supporting them; who's supporting her? Preschool center-level social-emotional supports and teacher well-being. J Sch Psychol. 2016;59:55-66. DOI: https://doi.org/10.1016/j.jsp.2016.09.001.

ISSN 2223-6775, Ukrainian Journal of Occupational Health, 2024, 20 (3), 193–204

24. Darius S, Hohmann CB, Siegel L, et al. Zusammenhang zwischen dem Burnout-Risiko und individuellen Stressverarbeitungsstrategien bei Kindergartenerzieherinnen [Relationship between Burnout Risk and Individual Stress Processing Strategies in Kindergarten Teachers]. Psychother Psychosom med Psychol. 2021;71:230-6. German. DOI: https://doi.org/10.1055/a-1376-6962.

25. Weinberg A, Creed F. Stress and psychiatric disorder in healthcare professionals and hospital staff. The Lancet. 2000;355(9203):533-7. DOI: https://doi.org/10.1016/S0140-6736(99)07366-3.

26. Naghieh A, Montgomery P, Bonell CP, et al. Organisational interventions for improving wellbeing and reducing work-related stress in teachers. Cochrane Database Syst Rev: CD010306. 2015. DOI: https://doi.org/10.1002/14651858.CD010306.pub2.

27. Sottimano I, Guidetti G, Converso D, et al. We cannot be "forever young", but our children are: A multilevel intervention to sustain nursery school teachers' resources and well-being during their long work life cycle. PLoS ONE 2018;13:e0206627. DOI: https://doi.org/10.1371/journal.pone.0206627.

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РИЗИК ВИГОРАННЯ СЕРЕД НІМЕЦЬКИХ ТА УКРАЇНСЬКИХ ВИХОВАТЕЛІВ ЗАКЛАДІВ ДОШКІЛЬНОЇ ОСВІТИ ЗАЛЕЖНО ВІД ІНДИВІДУАЛЬНИХ ОСОБЛИВОСТЕЙ ПОДОЛАННЯ СТРЕСУ

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Вступ. Вихователі закладів дошкільної освіти піддаються різноманітним стресам, які можуть призвести до негативних стресових реакцій. Для збереження здоров'я вихователів необхідний баланс між стресом, з одного боку, і ресурсами, з іншого.

Мета дослідження – вивчити взаємозв'язок між ризиком вигорання та індивідуальними стратегіями подолання стресу як особистісного ресурсу, а також виявити можливі відмінності між двома країнами, щоб розробити специфічні для кожної з них профілактичні заходи.

Матеріали та методи дослідження. 85 вихователів закладів дошкільної освіти з Магдебурга й околиць і 107 українських вихователів закладів дошкільної освіти з Харкова взяли добровільну участь в опитуванні. Для оцінки ризику вигорання використовувався опитувальник MBI-GS. Стратегії подолання стресу як особистісного ресурсу фіксувалися за допомогою Опитувальника подолання стресу (SVF).

Результати. Німецькі (Н) вихователі переважно справлялися зі стресом, використовуючи негативні стратегії, тоді як українські (У) вихователі переважно вдавалися до позитивних стратегій подолання стресу. 34,6 % Н і 42,1 % У вихователів мали певні симптоми вигорання. Ризик вигорання був підвищений у 4,9 % Н і 2,8 % У вихователів. Усі Н вихователі з ризиком вигорання використовували негативні стратегії подолання стресу ($p = 0,002$), тоді як лише двоє У вихователів з ризиком вигорання використовували ці стратегії ($p = 0,003$).

Висновки. Профілактичні заходи, які ведуть до зниження рівня стресу, повинні бути розроблені насамперед для збереження здоров'я вихователів закладів дошкільної освіти. Вихователям, які зазнали негативного впливу, щоб зменшити ризик вигорання можна було б надати можливість пройти курси подолання стресу. Корисною основою для цього можуть стати поради, що засновані на аналізі індивідуальних стратегій подолання стресу.

Ключові слова: вигорання, вихователі закладів дошкільної освіти, подолання стресу, порівняння країн

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