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Correlation between burnout syndrome and psychological and psychosomatic symptoms among teachers

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Abstract *Objectives:* Psychosomatic disorders and symptoms that correlate with the so-called burnout syndrome turned out to be the main cause of increasing rates of premature retirement of school teachers. The aim of this study was to evaluate the relation between occupational burden and psychological strain of teachers who are still in work. *Methods:* A sample of 408 teachers at ten grammar schools (am: High school; German: Gymnasium) in south-western Germany was evaluated. To determine the styles of coping with occupational burden we used the measure of coping capacity questionnaire (MECCA). To analyse the psychopathological and psychosomatic symptom load we applied SCL 90 R questionnaire. *Results:* According to the MECCA questionnaire, 32.5% of the sample suffered from burnout (type B), 17.7% suffered severe strain (type A), 35.9% showed an unambitious (type S) and 13.8% showed a healthy-ambitious coping style (type G). Burnout was significantly higher among women, divorced teachers and teachers working part-time. As part of the MECCA, teachers were asked to rate what they regarded as the strongest factor resulting in occupational burden. Teachers indicated that, besides high numbers of pupils in one class, they regarded destructive and aggressive behaviour of pupils as the primary stress factor. According to the SCL 90 R, 20% of the sample showed a severe degree (defined as > 70

points in the SCL90R GSI) of psychological and psychosomatic symptoms. MECCA type B (burnout) correlated significantly with high psychological and psychosomatic symptom load according to the SCL90R. *Conclusions:* In school teachers, burnout syndrome, a construct that derived from occupational psychology and occupational medicine, is significantly correlated with psychological and psychosomatic symptoms. Teachers rate destructive and aggressive behaviour of pupils as the primary stress factor.

Keywords Teacher · Burnout · Job strain · Occupational burden · AVEM · MECCA · Psychosomatic medicine

Introduction

In recent years, the results of the OECD study [3] drew the public attention to the situation of German schools. In this context, the occupational burden of teachers, a subject of scientific investigation for more than 30 years [1, 9, 21, 28], again became a topic of public interest in Germany. Increasing rates (up to > 50%) of premature retirement among teachers [24] and the rise of the national pension load generated a public pressure and initiated a political debate [2, 5, 25–27]. Among the reasons for premature retirement of German teachers, psychiatric or psychosomatic diagnoses are leading with a percentage of 52% [13, 26]. A great part of these diagnoses consisted of depression, stress disorders and exhaustion syndromes [2, 21, 25–27], all of them overlapping with the established symptoms of the so-called burnout syndrome.

Burnout was first defined by Freudenberger [8] as a syndrome affecting predominantly people in jobs with a high social and ethical responsibility [14]. The syndrome comprises I. exhaustion, II. low personal accomplishment and III. depersonalization (the latter defined as a distant and cynical stance with respect to the clients) [2, 8, 15, 16]. Since then, burnout has become a subject of

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intense research. Inventories to measure its extent have been established including the Maslach burnout inventory (MBI) [15], and, more recently, the measure of coping capacity (MECCA) [20]. In its original German version, the MECCA inventory bears the designation *Arbeitsbezogene Verhaltens- und Erlebensmuster* (AVEM) [18, 19].

Previous studies in Germany, many of them applying the AVEM inventory, showed burnout rates among German teachers around or even above 30% [21], a fact that has recently been cited also by the OECD [12]. While these studies revealed a high rate of teachers with dysfunctional occupational coping styles, it remained open to which degree this is accompanied by medically relevant mental health problems [2, 11]. In this study, in a sample of >400 teachers the burnout rates were evaluated. In addition, and to our knowledge for the first time, we applied an established instrument for the detection of psychopathological symptoms (SCL90R) to a teacher sample. This made it possible to relate the clinical psychopathology to the burnout syndrome. Our hypothesis was that teachers displaying the type B (burnout) pattern according to the AVEM/MECCA inventory would suffer from more psychopathological symptoms than type A (tense type), and the latter would suffer from more symptoms than the remaining two types.

Material and methods

In this cross-sectional study the patterns of coping with occupational burden and the psychological symptom load of teachers at grammar schools (am: High school; German: *Gymnasium*) were evaluated. The study included ten grammar (am: High school; German:

Gymnasium) schools in and around Freiburg, a city in the south western area of Germany. The schools were nominated by the school administration as a fairly representative mixture of this type of schools: five schools were located in an urban area; the other five belonged to areas that are more rural. Seven out of the ten schools were state schools. In three cases the schools, although offering free access like the state schools, were run by the Catholic Church. Out of the total sample consisting of 701 teachers, 438 (62.5%) returned the questionnaires. The 438 returned questionnaires contained 408 completely filled out inventories (58.1%). Of these 408 persons, designated as study sample, 49.3% were female. The mean age was 46.7 years ($SD \pm 9.8$ years) (for women 44.7 years and for men 48.5 years). The mean duration of service was 19.9 years ($SD \pm 10.4$ years). 58.6% had a full-time teaching load, 41.4% were part-time employees. Regarding marital status, 74.9% were married or lived in a steady relationship, 12.4% were single, and 12.7% were divorced or living apart (waiting for formal divorce).

Instruments

For describing job-related experience and behaviour patterns reflecting styles of coping with occupational burden and, to a certain extent, also effects of this burden, we applied an established inventory in its original German version, named AVEM [9, 18]. Its English version received the designation MECCA [20]. Along 11 dimensions, this questionnaire defines four patterns of work-related coping behaviour: healthy-ambitious (type G), unambitious (type S), tense (type A) and exhausted/resigned (type B) (for a more detailed characterization, see Table 1). As an attachment, this questionnaire

Table 1 The four experience and behaviour patterns described by the AVEM/MECCA test (for more details of this test, see reference 18)

Group	
Type S	Experience and behaviour pattern is orientated towards self-protection: Lack of involvement with work coupled with strong dissociation from problems dealing with the work situation, mental resilience with regard to pressure, (relative) contentment Intervention to be recommended: not so much on account of health but rather as regards the motivational aspects
Type G	Health supportive behaviour and experience pattern: Clear but not excessive involvement with work, combined with maintained capacity for distancing oneself from work-related problems, positive coping behaviour and resilience with regard to pressure and strains, positive attitude to life
Risk Type B	Intervention on account of health aspects not necessary Behaviour and experience pattern shows risks to health: Reduced involvement combined with limited capacity for dissociation from work-related problems, strong tendency towards resignation and reduced mental resilience with regard to pressure and strains, clearly limited enjoyment of life
Risk Type A	Intervention on account of health aspects necessary Behaviour and experience pattern shows risks to health: Intense involvement and lack of dissociation from work-related problems, reduced mental resilience with regard to pressure and strains, limited enjoyment of life Intervention on account of health aspects necessary

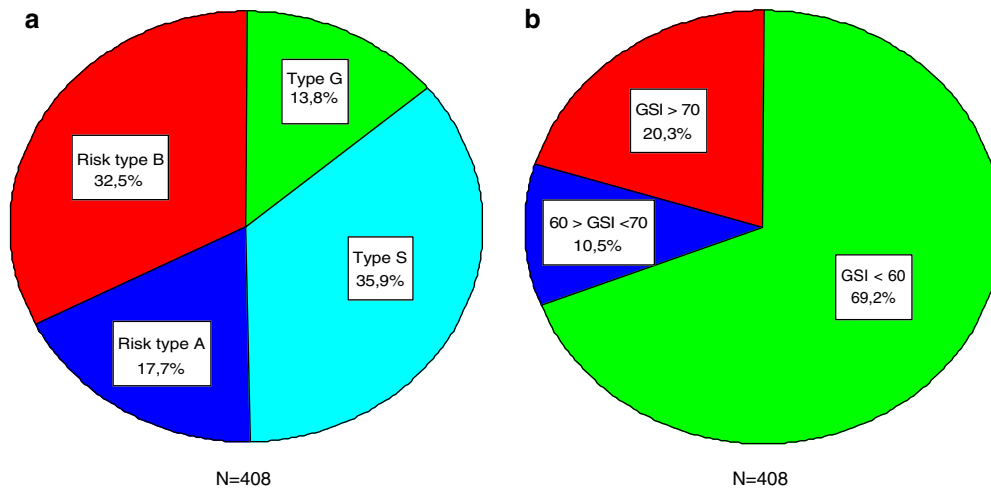


Fig. 1 a The distribution of AVEM/MECCA types among the study sample of 408 teachers. Type G corresponds to a healthy coping style, Type S represents unambitious teachers, type A tense type and type B exhausted-resigned type. **b** The proportion of

teachers showing normal (< 60 points), moderately elevated (60–70 points) and seriously elevated levels (> 70 points) of psychopathological symptoms as measured by the SCL90R inventory

contains a list of 26 items about the subjective appraisal of how teachers quantify the impact of each of the indicated items in the context of their work at school. Psychopathological symptoms were documented by the Symptom Check List SCL-90 R according to Derogatis et al. [6, 7]. All outcomes of the checklist were T-transformed, presented results are always *T* values.

Statistical analysis

Frequency tables were used for the description of discrete variables. Means and standard deviations were calculated as summaries of continuous variables. The relations between discrete variables were analysed using χ^2 test. When different groups had to be compared with respect to a continuous variable, we applied the Mann-Whitney *U* Test in case of two, Kruskal-Wallis *H* test in case of more groups. The reason for applying non-parametric tests at this point was the expectation, that most of the dependent variables would not be normally distributed. With respect to the analysis of the relationship between AVEM/MECCA and psychiatric symptoms, the inflation of alpha error as a consequence of multiple testing was corrected by using the Bonferroni-formula. The effects of identified relevant covariates were controlled using the analysis of covariance, as this procedure is widely trusted against the violation of the normal distribution assumption. Data were analysed using the software package SPSS 11.5.

Results

Of the teacher study samples ($N=408$), 13.8% belonged to healthy-ambitious type G, 17.7% were classified risk type A (tense), 32.5% were classified as burnout type B

(resigned), while 35.9% were type S (unambitious) (Fig. 1a). With respect to *gender*, the proportion of B type was significantly higher among female teachers, compared to males (39.3 vs 26.1%; $P < 0.05$). In contrast, male teachers had a higher proportion of S type compared to females (42.5 vs 28.9%, $P < 0.05$). *Marital status* turned out to be one of the strongest variables (overall $P < 0.001$): The proportion of teachers belonging to the B type was nearly two times higher in those who were divorced compared to teachers who were either married or were living in a relationship (51.1 vs 28.8%). The proportion of G type within the subgroup of divorced teachers was only about one-third as compared to teachers who were married or living in steady relationships (4.5 vs 14.9%). Also, the *teaching load* made a significant difference (overall $P < 0.05$): Surprisingly, teachers doing part-time work showed a significantly higher percentage of B type, when compared with their colleagues in full-time service (40.7 vs 26.9%). When the distribution of AVEM/MECCA types was analysed in teachers with different categories of *lengths of service* (< 9 years, 9–20 years, and > 20 years), no significant differences were detectable, except a slight, but not significant increase of the proportion of S type teachers along increasing duration of service. Compared to teachers serving in state schools, those working in schools run by the Catholic Church had higher percentages of G type (16.8 vs 12.3%) and A type (20.3 vs 16.4%), and a diminished proportion of B type teachers (28.7 vs 34.6%). However, these differences did not reach statistical significance.

As part of the AVEM/MECCA, teachers could rate what they regarded as the strongest occupational stress factors. The four types (according to MECCA) did not differ with respect to the ranking of the cumbering occupational conditions. All four MECCA types indicated “size of school class” and “behaviour of difficult

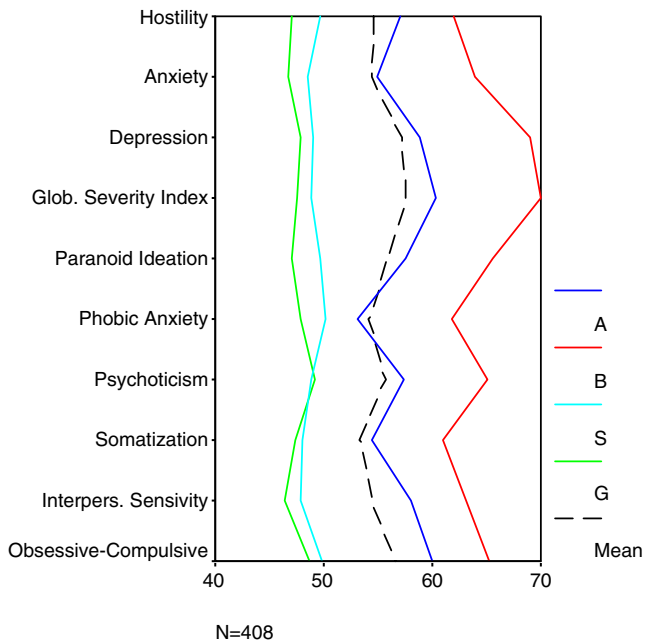


Fig. 2 For each of the four AVEM/MECCA types, values of the nine psychopathological dimensions and of the GSI total score according to the SCL90R inventory are indicated

pupils” as the strongest stress factors (among 26 stress factors that could be rated).

According to the Symptom Check List (SCL90-R), three severity levels/degrees of psychiatric and psychosomatic symptom load can be differentiated as defined by the score of the global severity index (GSI). The GSI differentiates between < 60 points (corresponding to a healthy population sample), $60\text{--}70$ points (displaying a moderate symptom load), and > 70 points (corresponding to significant mental health symptoms suggesting a probable clinical disorder). The results showed that 69.2% of the teachers scored with less than 60 points and 10.5% with $60\text{--}70$ points. The percentage of teachers with a serious degree of mental health symptoms (> 70 GSI points.) amounted to 20.3% (Fig. 1b).

Figure 2 shows the load of psychiatric symptoms according to the SCL-90-R dimensions for the four AVEM/MECCA type subgroups. The AVEM/MECCA subgroups differed significantly ($P < 0.001$) with respect to all SCL90R dimensions, type B (resigned) displaying the highest SCL 90 psychopathology, followed by risk type A (tense), type S (unambitious) and type G (healthy-ambitious). These results were confirmed when using multivariate models (analysis of covariance controlling for gender, marital status, teaching load and duration of service; data not tabulated).

Discussion

The occupational coping patterns were assessed in a sample of 438 grammar school (am: High school;

German: Gymnasium) teachers in ten schools from a south western region of Germany. We found that about one-third (32.5%) of the sample featured signs of burnout (risk type B). Since an additional 17.7% belonged to risk type A (tense type), more than half of the sample exhibited a pattern related to an increased health risk. Applying the SCL90R, we found that 20.5% of our sample exhibited psychopathological symptoms to fulfil the criteria of a clinical disorder (i.e. > 70 points in the GSI of the SCL90R).

Although the selection of the schools was not randomized, this sample of schools was regarded as a representative sample by the supervisory school authority. With respect to the return rate of 58.1% in our study, the results should be analysed with care. However, compared with other studies with teacher samples, our return rate was remarkable. A low return rate could create a bias for two reasons: (1) because the most burdened teachers might have been too resigned (or too sick) to fill out and to return the inventories, and (2) because those who were not burdened at all might not understand why they should participate in such a study. If both effects were of comparable strength, they should balance on one another. Although this study was done in grammar schools (am: High school; German: Gymnasium) only, a high degree of representativeness is indicated by a strong congruence of our AVEM/MECCA data with the data of other investigations where teachers from different school types had been included [21]. Compared to other professions, teachers belong to the occupations with the highest burnout rates [21].

Type B (burnout) showed the highest load of psychiatric symptoms, followed by type A (tense), type S (unambitious), and type G (healthy-ambitious). Conversely, increasing SCL90-R/GSI scores correlated with an increase in the percentage of teachers belonging to the B type; starting from 19.4% B type teachers in the group with less than 60 GSI points, to 44.2% in the group with $60\text{--}70$ GSI points, ending up with 72.3% in the group with > 70 GSI points. The fact that, along increasing GSI, the percentage of A type teachers first increases and then decreases could indicate a final conversion of A type into B type teachers. The highest mean value of all SCL-90 R dimensions of B type teachers was accomplished for depression. Earlier studies showed that burnout is associated with a high level of depression [10, 17] and more emotional distress [11]. When the 11 sub-dimensions of the AVEM / MECCA [18] were analysed for their impact on producing psychopathology (as expressed by GSI points in the SCL90R), the three dimensions “balance and mental stability”, “resignative tendencies”, and “emotional distancing” had the highest impact (not shown).

Social and demographic factors influence the different coping patterns; women featured a significantly higher rate of burnout than men (28.9 vs 42.5%, $P < 0.05$). It has to be considered that women are more heavily affected by the double burden of school service and family [21]. In addition, earlier studies proved that women are

more receptive for negative emotions and have a higher risk of depression [4, see also 11]. Social support by a partner seems to play another important role with regard to coping with demands [16]. In our study, teachers who were living in a relationship or were married showed a significant lower rate of burnout and a lower mean value of psychological and psychosomatic symptoms measured by the SCL-90 R “GSI” dimension.

Teachers doing part-time showed a significantly higher rate of burnout than teachers with a full-time load (40.7 vs 26.9%, $P < 0.05$). Teachers in part-time employment usually have a higher workload compared to the workload fixed in their contract. Furthermore 65.4% of the women do part-time service and have to abide the double burden of job and family, as already mentioned. An additional aspect is that part-time teachers often feel to be somehow at a distance to their colleagues and receive a diminished social support and less integration in the staff [21]. The distribution of coping patterns along the length of service showed no differences except a slight increase of S type (unambitious) in the subgroup with longest service. This might be explained by a selection effect, i. e. early retirement of B type (resigned) and a higher percentage of men in this subgroup.

The ranking of occupational stress factors, as indicated by the teachers themselves, was the same for all AVEM/MECCA types. “Size of school class” and “behaviour of difficult pupils” were designated by all teachers as the most burdening conditions. These two factors have to be considered in their interaction. The more the difficult pupils burden the teachers, the more lessons the teachers have to deal with them and the bigger and thus more demanding the classes are and vice versa. Teachers’ health and the health status of school children seem to be interconnected, at least to a certain extent. Children’s behaviour, as a consequence of children’s bad health, has deteriorated in Germany during the recent years [23].

In Germany, teachers show the highest burnout rates, compared to other jobs with great interpersonal dedication such as physicians [5], nurses or social workers [21]. This applies to many European countries, where the rates of burnout range between 25 and 35% [2, 21, 28]. Besides evaluating the severity of the burnout syndrome among teachers, we, to our knowledge for the first time, determined to which degree teachers as a group suffer from psychopathological and psychosomatic symptoms. We found that 20% of the teachers showed significant psychological symptoms. That fits well to the results of Weber et al. who found that psychiatric and psychosomatic diagnoses are the leading cause for early (premature) retirement in teachers [25].

As a consequence of our results we feel that teachers should benefit from preclinical interventions, e.g. training courses or Balint-like coaching groups, both during the teachers’ education and during the every day life at school. Such interventions should aim at increasing the resilience of teachers. Such interventions, however, have

to be flanked by the measures that improve children’s health and behaviour, and by better personal and structural equipment of schools

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