Working conditions and mental health in teachers: a preliminary study

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Background Unfavourable working conditions are associated with poor mental health and many studies show that teachers are at risk of this.

Aims To investigate if and to what extent specific dimensions of working conditions are associated with symptoms of depression and anxiety in teachers in state schools in Italy.

Methods A cross-sectional questionnaire survey of Italian state schoolteachers using the Karasek Job Content Questionnaire, the Self-Rating Anxiety Scale (SAS) and the Center for Epidemiologic Studies Depression Scale (CES-D). We tested the hypotheses that high job demand, low decision latitude and low support are associated with anxiety and depression in teachers using a correlation matrix and hierarchical multiple regression models.

Results 113/180 (63%) of schoolteachers invited to participate completed the survey. 49% scored above the cut-off on CES-D and 11% on SAS. CES-D was positively correlated with job demand ($r = 0.517$, $P < 0.01$) and negatively with social support ($r = -0.226$, $P < 0.05$). SAS was positively correlated with job demand ($r = 0.408$, $P < 0.01$). Hierarchical multiple regression analysis showed that job demand was significantly associated with CES-D and SAS scores, explaining 28 and 25% of variance respectively.

Conclusions About half of the teachers in this study scored above the threshold for depression and ~1 in 10 for anxiety on self-rating questionnaires. Poor mental health in teachers is significantly associated with high job demand and low social support. These results should be confirmed in larger, more representative samples.

Key words Anxiety; depression; JCQ; mental health; teachers; workplace.

Introduction Psychological ill-health contributes to widespread and serious chronic health problems, including burnout, in teachers [1]. Karasek's demand-control-support model of psychosocial work conditions predicts mental health outcomes in working populations [2,3]. Few studies have specifically investigated job strain and psychological symptoms in teachers. Karasek's model predicts that job strain occurs when psychological job demands are high and workers' decision latitude is low, while low support increases the risk [4,5]. In this study, we investigated the prevalence of depression and anxiety symptoms and their correlations with job content, in a group of Italian teachers. We hypothesized a predictive role for job content on teachers’ depression and anxiety scores.

Methods We distributed self-administered, anonymous questionnaires randomly by hand to teachers from six primary and middle level state schools in Naples, Italy. We selected schools representing various urban districts with a heterogeneous population. We retrieved questionnaires anonymously in sealed envelopes in a box. Questionnaires included the Italian versions of the Job Content Questionnaire [5], the self-rating Center of Epidemiological Studies Depression Scale (CES-D), the...
Self-rating Anxiety Scale (SAS) [6–8] and sociodemographic and lifestyle questions.

We included all bivariate correlations between study variables in a zero-order correlations matrix. We controlled for teachers’ age, gender, education level and weekly working hours. We introduced categorical dummy variables and ran two hierarchical multiple regression analyses with CES-D and SAS as dependent variables to analyse the predictive role of job content on teachers’ depression and anxiety scores, accounting for teachers’ age for SAS. We examined the independent variables for colinearity before the hierarchical regression analyses. We entered variables conservatively into predictive models (P value of < 0.05) and only used cases with complete data for the relevant variables. We assessed regression equations with statistically significant variations of the coefficient of determination, beta weights and confidence intervals (CI).

Local academic rules do not require ethical approval for studies of non-clinical populations, but the study was surveyed and sponsored by the schools’ management in compliance with Italian privacy and anonymity policies.

Results

Of the 180 teachers who received the questionnaire, 113 returned it fully completed (response rate 63%). Teachers’ age ranged from 24 to 62 (mean = 48, SD = 8.8). Most were female (90%) and had a high school (25%) or college (75%) degree. They worked in primary (56%) or middle (44%) school, and mean working hours per week were 22.8 (SD = 5.7). The mean CES-D score was 15.4, SD = 10, with 49% scoring above the threshold for depression (16). The mean SAS score was 34.8, SD = 8.9, with 11% scoring above the threshold for anxiety (45).

Table 1 shows correlations between CES-D, SAS and other study variables. CES-D was significantly and positively correlated with job demand (r = 0.52, P < 0.01), and negatively correlated with social support (r = −0.23, P < 0.05). SAS was significantly and positively correlated with job demand (r = 0.41, P < 0.01) and teachers’ age (r = 0.24, P < 0.05). No further significant correlations emerged from the analysis.

The results of the hierarchical regression models are reported in Table 2. Results of the variance inflation factor (all < 2.0) suggested that the estimated regression coefficients (B) are well established in the regression models. At step one of the predictive model for CES-D, social support scores explained 5% (R²) of variance (B = −0.64, CI = −1.17 to −0.11), F(1,108) = 5.8, P < 0.05. At step two, job demand explained 28% of the variance (B = 1.11, CI = 0.73–1.48), F(2,107) = 21.0, P < 0.01. In the last step, social support decreased its predictive role on CES-D. At step one of the predictive model for SAS, age explained 6% of variance, B = 0.26 (CI = 0.06–0.46), F(1,104) = 6.5, P < 0.05. At step two job demand increased the explained variance to 25%, B = 0.99 (CI = 0.61–1.38), F(2,103) = 17.5, P < 0.01. In the last step, teachers’ age improved its predictive role on SAS.

Discussion

Our findings suggest correlations between job content dimensions, mostly job demand, and mental health symptom scores in a population of teachers. The influence of working conditions on depression and anxiety is further supported in a predictive model. About half of our sample scored above the threshold for depression. Our data support previous evidence in this field [2,9].

We used a well-known model to characterize working conditions, and validated instruments to assess occupational stress and psychopathological symptoms. Few other published studies of teachers have used this approach. Another strength is the response rate of 63%; similar studies previously achieving 39–89% [9,10]. Our small sample is a limitation, as is the possibility of reporting bias, i.e. depressed and/or anxious teachers rating their working environment less favourably, and the absence of information about non-responders due to study design. Moreover, the cross-sectional design precludes any temporal or causal inferences about the direction of observed associations and the concept of prediction is statistical rather than heuristic. We cannot therefore draw any firm conclusion about the direction of causality.

However, our study further supports the relevance of the demand-control-support model of occupational stress in a population of Italian schoolteachers and its

<table>
<thead>
<tr>
<th>Table 1. Intercorrelation indices between study variables</th>
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<tbody>
<tr>
<td>Age</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>CES-D</td>
</tr>
<tr>
<td>SAS</td>
</tr>
<tr>
<td>Means</td>
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<tr>
<td>SD</td>
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</tbody>
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*P < 0.05; **P < 0.01.
ability to predict mental illness from job strain. The role of job conditions on psychopathology may be an environmental effect (as with social support and job demand on CES-D scores) or a combination effect with demographic variables (as with age and job demand on SAS scores).

Mental health is an important occupational health issue in schoolteachers as work stress is a major risk factor for anxiety and depression. Our findings support the value of screening for stress-related psychopathology and investigating its determinants in teachers to predict and perhaps avoid outcomes such as mental fatigue and burnout. Our findings should be confirmed in larger and more representative samples and the influence of individual and environmental factors further explored. Future research could analyse in more detail the effect of sociodemographic variables on a regression model of psychopathology.

### Table 2. Hierarchical regression models for CES-D and SAS with change in $R^2$ values between models ($\Delta R^2$), regression coefficient ($B$), standard error, and CI for $B$

<table>
<thead>
<tr>
<th>Constant</th>
<th>Predictors</th>
<th>$\Delta R^2$</th>
<th>$B$</th>
<th>SE</th>
<th>95% CI for $B$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) CES-D</td>
<td>Step 1 Social support</td>
<td>0.51</td>
<td>−0.640</td>
<td>0.266</td>
<td>−1.167, −0.114</td>
</tr>
<tr>
<td></td>
<td>Step 2 Social support</td>
<td>0.231</td>
<td>−0.358</td>
<td>0.237</td>
<td>−0.827, 0.112</td>
</tr>
<tr>
<td></td>
<td>Job demand</td>
<td></td>
<td>1.106</td>
<td>0.188</td>
<td>0.732, 1.479</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>0.282</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) SAS</td>
<td>Step 1 Age</td>
<td>0.059</td>
<td>0.261</td>
<td>0.102</td>
<td>0.058, 0.464</td>
</tr>
<tr>
<td></td>
<td>Step 2 Age</td>
<td>0.192</td>
<td>0.351</td>
<td>0.093</td>
<td>0.165, 0.536</td>
</tr>
<tr>
<td></td>
<td>Job demand</td>
<td></td>
<td>0.993</td>
<td>0.193</td>
<td>0.610, 1.376</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>0.251</td>
<td></td>
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*Note: $P < 0.05$, **$P < 0.01$. 

### Conflicts of interest
None declared.

### References


### Key points
- In this study working conditions predicted psychopathological symptoms in teachers.
- About half of the teachers in our study scored above the threshold for depression.
- Teachers should be screened for psychopathology in relation to job stress accounting for individual and environmental effects.

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Our work was supported by internal sources only.

### Acknowledgements
We thank all the teachers who voluntarily participated in the present study.