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Working Conditions and Stress in the English Education System

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Abstract

Background: The UK (United Kingdom) education sector has among the highest level of stress sickness absence of all occupations. However, investigations of psychosocial working conditions which contribute to stress, including behaviour of students and parents, has not been conducted.

Aims: To investigate the psychosocial working conditions and prevalence of negative parental and student behaviour in a large sample of school teachers and college lecturers based in England. In addition, we assess the influence of working conditions, student behaviour, and parental behaviour on perceived stress.

Methods: A cross-sectional survey of teachers in England. Respondents completed the Management Standards Indicator Tool (MSIT), perceived stress scale (PSS-4), student behaviour scale, and a two-item measure of parental behaviour. Differences in these measures across different teaching roles were assessed using ANOVA. Regression analyses were used to evaluate the association of MSIT, student and parental behaviour on PSS outcomes.

Results: Compared to UK benchmark scoring, psychosocial working conditions were at a poor level, with primary teachers in particular exposed to negative parental behaviours, and secondary teachers to poor student behaviour. Demands were consistently associated with perceived stress outcomes across job roles, although management support and relationships with peers also played a part.

Conclusions: Demands faced by teachers in England play an important part in the experience of stress. Interventions to reduce these demands, and the high frequencies of negative pupil and parental behaviours, should be considered.

Key words: teachers; working conditions; stress; parental behaviour; student behaviour

Introduction

Chronic workplace stress is associated with negative psychological and physiological health in employees. Occupational stressors have been linked to the development of cardiovascular disease, with the association posited to be as strong as those from accepted risk factors such as high blood pressure and smoking [1]. Chandola and colleagues [2] found that chronic workplace stress was related to the development of metabolic syndrome, a precursor of disorders such as diabetes. Furthermore, stress at work has been demonstrated to increase turnover intentions [3] and presenteeism (i.e. attending work when sick; [4]), in addition to sickness absence.

Stress in the workplace can also adversely influence organisations. Approximately 12.5 million working days were lost in the United Kingdom (UK) in 2016/17 due to stress, depression or anxiety [5]. Indeed, stress is the largest cause of long-term sickness absence (lasting over 4 weeks), and second only to illnesses such as colds and flu in causing short-term sickness absences [6].

The job demand-control-support (JDCS) model of occupational stress predicts that high levels of demands, low autonomy, and poor support from peers may lead to strain reactions in employees [7]. In 2004, the UK Health and Safety Executive (HSE) developed a set of management standards (MS), partially based on the JDCS [8], which identify seven psychosocial hazards or working conditions (demands, control, managerial support, peer support, relationships, role, and change) that have the potential to negatively affect employee wellbeing [8]. Alongside these hazards, an indicator survey (the Management Standards Indicator Tool, MSIT) was developed as a tool for organisations to assess these hazards.

Teaching is frequently reported as a high stress occupation [9, 10]. Work stress is a contributing factor to the high sickness absence within the profession, with the UK education sector reporting significantly higher sickness absence rates compared to all other sectors [6], in addition to increasing attrition rates [11]. This stress subsequently influences the teaching process, with evidence demonstrating that pupils perform better when their teachers have lower levels of stress [12].

Teacher interaction with students and their parents is another occupational stressor that influences wellbeing. According to Marsh [13], 25% of teachers in the UK are considering leaving the profession due to, among other considerations, poor student behaviour, and more than half have experienced aggressive pupil behaviour in the past year [14]. Burnout in teachers also appears to be a consequence of student behaviour. For example, emotional exhaustion was predicted by disrespectful [15] and disruptive [16] student behaviour. Parental behaviour on school premises and outside of school has rarely been investigated as a precipitant of teacher stress however. While Grayson and Alvarez [17] found that parent-community school relationships in addition to student-peer relationships most readily accounted for the experience of emotional exhaustion, whether parental behaviour influences teacher wellbeing has not been investigated.

Despite this, the effect of psychosocial working conditions on stress has yet to be investigated in teachers based in England. The current study aims to investigate stress in this sample, and to establish which work-related factors most influence the experience of stress across the English education sector.

Methods

An online cross-sectional survey was distributed by email to members of two education organisations (names removed for anonymity) in England. An invitation email was sent to members in England in the first week of March 2017, with a reminder sent two weeks later and the online collector closed one week following this. Each invitation described the nature of the study, independence of the researchers, and that the organisations would have no influence on the findings or reporting of the project. Additionally, participants were clearly informed that the research represented a project examining factors influencing workplace stress, and was not an information gathering project headed by organisational stakeholders. Response rate is difficult to ascertain due to daily membership fluctuations in each organisation and, due to the email basis of the project, we are unsure how many surveys actually made it to potential respondents considering

junk email filters and incorrect email addresses. The organisations contacted represent approximately 430,000 teachers. However, within this large group, invitation emails were only sent to individuals who subscribe to regular contact within a specific field of interest (health and wellbeing). This makes the potential total population difficult to estimate accurately, although based on publicly available information, approximately 18,000 teachers would have received an invitation email, a response rate of 6.46%. Completion rate of those who started the survey was 91%. Ethical approval was gained from the [removed for anonymity] research ethics board.

Psychosocial working conditions were measured using a 25-item version of the MSIT [18]. This short-form version was chosen due to it having similar psychometric properties as the 35-item scale, while being quicker to complete [18]. The MSIT assesses seven psychosocial aspects of the workplace (demands, control, managerial support, peer support, relationships, role, and change; internal consistency shown to be acceptable [$>.70$] for each factor [18]) which, if left at unsuitable levels, can result in negative stress-related outcomes. Answers are provided on a 5-point Likert scale from [1] Never to [5] Always for the first 15 questions, and [1] Strongly Disagree to [5] Strongly Agree for the remaining 10. Benchmark scoring is also provided [18], with higher scores showing greater levels of each working condition.

To measure student behaviour, the 'disrespect' element of Friedman's [19] Pupil Behaviour Pattern (PBP) measure was used. This reflects disrespectful student behaviour toward their teacher and classmates as observed by the teacher. It is measured via an 11-item Likert scale with responses on a scale from [1] Never through to [6] Daily representing frequency of behaviours [19]. The disrespect sub-scale has sufficient internal reliability ($\alpha > 0.8$ [16]), and factor analysis demonstrated good validity for the overall model [15]. We further designed two questions to investigate the frequency of negative parental behaviour both on school premises and online. We asked 'I am subject to derogatory words and/or behaviour from parents in and around school premises' regarding parental behaviour at school, and 'I am subject to derogatory words from parents on the internet' regarding behaviours online. Each question was answered on the same 6-point Likert scale

as the PBP measure in order to determine frequency of these behaviours. Cronbach's alpha calculations suggested adequate internal reliability for these two items ($\alpha > 0.7$).

Stress was measured using the 4-item version of the Perceived Stress Scale (PSS-4 [20]). The PSS asks respondents to rate how often in the previous month they had experienced stressful situations. Responses are given on a Likert scale from 0 (Never) to 4 (Very Often). Items 2 and 3 are reversed. Higher scoring reflects increased levels of perceived stress. This measure is extensively validated and reliable, with internal consistency greater than 0.7 [21]. Demographic questions asked were: age, gender, length of experience as a teacher, and hour disparity (calculated by subtracting actual worked hours from contracted work hours).

The organisations which agreed to participate in the project were approached by the lead researcher as part of a wider project into public sector health and wellbeing in the UK because they represent teachers from across English geographical regions. Data were analysed using IBM 22.0 (IBM Corp.). *T*-tests were conducted to examine differences between contracted working hours and actual working hours for each group, and one-way ANOVAs were calculated to ascertain differences in scoring on perceived stress and working conditions across the four different job roles included in the project. Finally, linear regression analyses were performed to examine the influence of working conditions, student behaviour, parental behaviour, and work hour disparity on perceived stress.

Results

Data were collected from 1,164 teaching staff responsible for all levels of the English education system other than higher education (i.e. universities). To screen data, outliers were detected through the calculation of Z-scores for each independent variable. Per Field [22], Z-scores greater than 3.29 identified scores as outliers. One participant was identified as an outlier and was removed from the analysis.

Missing data were detected using IBM SPSS 22. This analysis showed a total of 75 missing data points (6.4% of the total sample), which were present within primary teachers (33), secondary

teachers (38), college staff (1) and early years staff (3). Missing cases were identified as random by calculating dummy variables and comparing missing and non-missing values using *t*-tests. These showed no significant differences (all $p > 0.05$), indicating that there was no pattern in the missing data, for example consistent non-responding to certain questionnaire items. Based on this analysis, participants with missing data points were excluded from inferential analysis.

After screening the final sample ($n = 1,061$) included 390 (37%) responses from early years practitioners, who typically work in nurseries with children who are aged between 1 and 5 years old. Furthermore 223 primary school teachers (21%) and 354 secondary teachers responded (33%), who teach children aged between 4 and 11 years, and 11 and 18 years respectively. Finally, 94 further education teachers/lecturers (9%), who typically teach individuals aged from 16 through to adulthood, responded.

TABLE 1 ABOUT HERE

Table 1 presents demographic statistics for participants in the project. As is the norm for the teaching population in the UK [23], the majority of respondents were female (84%) with a mean age of 42.1 years. Median length of experience across all roles was over 10 years, and respondents worked on average 14 hours per week more than they were contracted to.

Scoring on the MSIT suggest that none of the factors scored above the 10th percentile according to benchmark scoring from Edwards and Webster [18], meaning scoring on each of the psychosocial hazards is worse than 90% of organisations included in the benchmark scoring. Furthermore, both primary and secondary teachers score greater than the overall average of perceived stress, with secondary teachers scoring highest on disrespectful student behaviour. T-test analyses suggested that for each occupational group this difference in hours worked and hours contracted to was statistically significant ($p < .001$). Furthermore over 20% of respondents are exposed to negative parental behaviour at least once a month.

TABLE 2 ABOUT HERE

A linear regression analysis was conducted to examine the extent to which each of the MSIT items predicted PSS scores. Alongside the MSIT items, parental and student behaviour measures and hours disparity were entered as predictors. Within the model the role of gender, age, and teaching experience were controlled by entering them first as a separate step in the model. This showed that these variables did not predict PSS scores (adj $R^2 = 0.008$, $p > 0.05$).

The linear regression model was found to suitably predict scores on the PSS for all respondents combined, accounting for 30% of the variance of PSS scores. Further analysis of the coefficients showed that demands, managerial support, and peer support significantly predicted PSS scores.

In addition to the overall analysis, separate regression analyses were also carried out for each job role. For primary teachers, the regression model showed good fit to the data, accounting for 19% of variance, with demands the only significant predictor of stress. For secondary teachers, a good fit showed that 30% of the total variance of PSS scores was accounted. Demands, relationships, and managerial support were each significantly related. For college tutors, the model accounted for 48% of the variance. This time demands and peer support were the two significantly related factors. Finally, for early years practitioners, the regression model accounted for 26% of the variance. Again, demands were the only significantly related factor.

TABLE 3 ABOUT HERE

Furthermore, we undertook a series of one-way ANOVA tests to compare scoring on perceived stress and MSIT working condition measures across the four different job roles. For perceived stress, there was a statistically significant difference between groups ($F(3, 1159) = 21.44$, $p < .001$). A Tukey post-hoc test revealed that both primary and secondary teachers had significantly greater levels of perceived stress than early years professionals (both $p < .001$).

Further ANOVA analysis also found differences between these groups on the demands ($F(3, 1058) = 62.63$, $p < .001$), control ($F(3, 1058) = 6.61$, $p < .001$), relationships ($F(3, 1058) = 5.11$, $p < .05$), role ($F(3, 1058) = 16.79$, $p < .001$), and change ($F(3, 1058) = 16.29$, $p < .001$) factors of the MSIT. For

demands, the post-hoc test demonstrated significant differences ($p < .001$) between both primary and secondary teachers and college lecturers and early years professionals. For control, primary teachers scored significantly lower than college lecturers and early years professionals ($p < .001$), thus indicating significantly lower autonomy in the role. Thirdly, primary teachers and early years professionals scored significantly greater than secondary teachers on the relationships factor, demonstrating fewer strained relationships with colleagues at work ($p < .05$). With the role and change factors, each of early years professionals scored significantly higher than the other three occupational groups ($p < .001$). Thus, suggesting that early years professionals have a greater understanding of their role within the organisation and organisational change is communicated more clearly than any of the other groups

Discussion

The workload demands placed upon teachers across English educational establishments consistently predicted the stress reported. Indeed, it was the one working condition associated with perceived stress irrespective of the type of school that respondents worked in. In partial support of the JDCS [7], support and relationships with others were also key to the experience of stress. However, we found control played no part in the experience of perceived stress as anticipated in the JDCS. Furthermore, despite each group working significantly more hours per week than contracted to, these hour disparities did not significantly influence the experience of stress, suggesting a broad acceptance of working hour expectations and resilience to any potential negative impact these may have on wellbeing.

Results also demonstrate that primary and secondary teachers have the greatest perceived stress, with teachers at all levels exposed to poor working conditions. Indeed, levels of each of the seven psychosocial working conditions measured by the MSIT were worse than 90% of other UK public and private sector organisations included in benchmark scoring [18]. Further, up to 40% of primary and 20% of secondary teachers are exposed to negative parental behaviour either online or

on school premises at least once a month, with secondary teachers exposed to the greatest frequency of disrespectful student behaviour.

To our knowledge, this is the first study to assess psychosocial hazards using MS in a sample of teachers, with stress as an outcome. Prior to this, the MS have been investigated in other public service occupations [24, 25]. Interestingly, workplace stressors have been shown to have a differential effect on perceived stress according to specialism, with different effects for primary and secondary teachers. Reasons underlying this difference are difficult to define at this stage, and further research is needed to elucidate these differences. Additionally, it provides some continued support for the utility of the JDCS. Alongside this, one striking finding is the prevalence of working beyond contracted hours. Whilst regression analysis has shown that this does not seem to contribute significantly or directly to reported stress, working beyond agreed guidelines and poor work/life balance have previously been associated with poorer mental and physical health [26], and this should be investigated further. Finally, this is among the first studies to demonstrate the prevalence of negative parental behaviours toward England's teachers.

There are some caveats to consider when interpreting the present findings. Response rate is difficult to be certain of, which is a distinct issue with internet mediated research, although, our assumed response rate is low. However, the use of IMR allowed the collection of a large sample size and ensures anonymity and confidentiality of answer for respondents [27]. Furthermore this project was self-report and cross-sectional, and thus common method variance bias may have been introduced. We also note that errors in self-reporting are potentially a concern in the working hours variables, as participants may not have been certain of contracted hours. Finally, it should be noted that the present research has examined only one source of stress, specifically workplace conditions and student/parental behaviour, and there are a number of potential variables which could also influence reported stress. Controlling for all potential stressors would not be possible due to the broad range of potential stress sources, but future research may wish to introduce greater control in order to better account for changes in reported stress specifically caused by workplace conditions.

Future studies should seek to evaluate interventions for the reduction of demands whilst harnessing the buffering effects of support from others. Additionally, the prevalence of negative parental behaviour seems high, and thus the effects of this requires further investigation. Furthermore, whilst it may be that the large number of additional hours worked were due to the high demands of their jobs, we are not able to firmly state that this was the cause of the hours disparity found. Future research may wish to focus more specifically on causes underlying the high hours disparity reported by educators. Also, literature [e.g. 17] demonstrates that a number of work-related factors can influence teacher stress which are not measured in the present study, and thus should be investigated with respect to our findings. Finally, nationally-representative population studies are required in order to further validate these findings.

In conclusion, this paper demonstrates that whilst workers in the education sector frequently report high levels of negative working conditions, only high demands are consistently contributing to the perceived stress of teachers. However, those working with older students report a broader range of factors which contribute to stress levels, suggesting that management and peer support in particular play a greater role in wellbeing for those in larger organisations. Future research must investigate further the mechanisms through which these factors influence stress, as well as considering potential methods for intervention and amelioration.

Key Points

1. In this sample of teachers based in England, demands were the only psychosocial hazard which consistently influenced the experience of stress.
2. Secondary school teachers are exposed to the greater frequency of negative student behaviour.
3. Primary and secondary teachers have greater levels of perceived stress than early years professionals or college lecturers.

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Table 1: Population statistics for each job role, as well as mean number of hours worked and those contracted to, and percentage of respondents exposed to negative parental behaviour either on school premises or online at least once a month.

	Gender		Mean Age (SD)	Median Experience	Mean Hour Disparity(SD)	Parent Behaviour*	
	Male (N)	Female (N)				Personal	Online
Primary	15% (34)	85% (199)	40.80 (10.56)	10 years +	-21.9	28.1%	11.2%
Secondary	25% (90)	75% (265)	40.26 (10.56)	10 years +	-11.0	18.2%	3.3%
College	38% (36)	62% (58)	43.72 (10.34)	8-10 years	-9.9	12.6%	1.1%
Early years	3% (11)	97% (379)	46.97 (9.60)	10 years +	-6.2	20.6%	4.3%
Total	16% (171)	84% (901)	42.99 (10.65)	10 years +	-14.2	20.7%	5.3%

*Demonstrates the percentage of teachers exposed to negative parental behaviour at least once a month.

Table 2: Mean and standard deviation data for each MSIT variable, the difference between contracted hours and actual working hours, and perceived stress split according to reported job role.

	Primary Teachers	Secondary Teachers	College Lecturers	Early Years	All Respondents
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Demands	2.27 (.84)	2.19 (.81)	2.77 (.82)	2.97* (.90)	2.53 (.92)
Control	2.68 (.80)	2.79 (.81)	3.01* (.87)	2.94* (.90)	2.82 (.85)
Managerial Support	2.88 (.86)	3.05 (.90)	2.92 (.87)	3.05 (.93)	3.01 (.91)
Peer Support	3.54* (.71)	3.54* (.76)	3.58** (.79)	3.63 **(.77)	3.58** (.75)
Relationships	4.01* (.90)	3.91* (.96)	4.00** (.87)	4.02** (.92)	3.94** (.93)
Role Change	3.61 (.80)	3.58 (.77)	3.56 (.89)	3.96** (.80)	3.74 (.81)*
Perceived Stress	2.37 (.65)	2.15 (.87)	2.30 (.91)	2.64* (.91)	2.41 (.91)
Student Behaviour	9.05 (3.22)	9.03 (3.07)	8.14 (2.96)	7.47 (3.16)	8.41 (3.21)
Student Behaviour	3.31 (1.38)	3.85 (1.54)	3.22 (1.42)	3.29 (1.31)	3.50 (1.45)

*Scoring is at the 5th percentile (Edwards and Webster, 2012)

**Scoring is at the 10th percentile (Edwards and Webster, 2012)

Table 3: Linear regression analyses demonstrating factors significantly related to stress outcomes.

	Significantly related factor(s)	Coefficient estimate (B)	T	P	R ²	Adjusted R ²
All Respondents	Demands	-1.58	-10.13	<.001		
	Managerial support	-.08	-2.45	<.05	.30	.29
	Peer support	-.12	-2.95	<.05		
Primary Teachers	Demands	-1.58	-4.26	<.001	.19	.14
Secondary Teachers	Demands	-1.36	-4.82	<.05		
	Relationships	.88	2.05	<.05	.30	.27
	Managerial support	-.12	-2.12	<.05		
College lecturers	Demands	-1.53	-3.08	<.05	.48	.41
	Peer support	-.26	-2.40	<.05		
Early years	Demands	-1.38	-4.53	<.05	.26	.22