

Occupational Stress Among Mathematics Teachers of Higher Secondary Schools in Relation to Certain Demographic Variables

Hubert Antony, Dr. V. Girija

Vels Institute of Science, Technology and Advanced Studies (VISTAS) Chennai-117

DOI : <https://doi.org/10.51583/IJLTEMAS.2025.140400046>

Received: 21 April 2025; Accepted: 01 May 2025; Published: 08 May 2025

Abstract: Mathematics is considered a difficult subject by many students and parents. However, at the higher secondary level, the study of mathematics is of prime importance because it opens doors to many professional studies. Hence, at this level, teachers handling the subject face pressure from multiple directions for better results — from higher authorities as well as from students' parents. Amidst such challenges and issues, along with personal matters, there is a strong possibility that mathematics teachers experience stress that affects their daily routines. Therefore, the stress experienced by mathematics teachers is a major subject of research. The current study is an inquiry into the demographic differences among mathematics teachers, conducted by surveying a random sample of 200 mathematics teachers from higher secondary schools in the Kollam district of Kerala state, India. A standardized occupational stress scale developed by Meenakshi Sharma and Satvinderpal Kaur (2014) was used to assess the stress levels of teachers. Data analysis revealed a significant difference in occupational stress with respect to the locality of the institution and the type of school management. However, the difference was not substantial with respect to gender or teaching experience. The findings emphasise the need of appropriate interventions to mitigate the stress among mathematics teachers.

Key Words: Occupational Stress, Mathematics Teachers, Higher Secondary Schools, Demographic Variables

I. Introduction

Mathematics is generally perceived as one of the most difficult school subjects by both students and their parents. This perception is due to the abstract nature of mathematical concepts, the cumulative structure of the subject, and the need for regular practice, logical thinking, and problem-solving skills. Mathematics learning mainly includes concept learning, principle learning, and problem-solving—higher-order processes demanding significant cognitive engagement due to the abstract and interconnected nature of mathematical concepts and reasoning (Gafoor & Kurukkan, 2015). Many pupils struggle to relate mathematical concepts to real-world scenarios, which often leads to a lack of motivation and engagement. Despite these challenges, mathematics holds a central place in the academic curriculum, particularly at the higher secondary level, where it becomes a gateway to numerous professional and technical fields such as engineering, economics, computer science, and data analytics (Akhter & Akhter, 2018). Moreover, mathematical skills are essential for comprehending various other fields, such as biosciences, social sciences, and even the arts (Patena & Dinglasan, 2013; Phonapichat et al, 2014).

Occupational Stress of Mathematics Teachers

Due to its importance, performance of students in mathematics is closely analysed, and teachers who handle this subject are under constant pressure to achieve high academic outcomes. They are expected to make sure that students not only understand complex mathematical concepts but also score high in competitive and board examinations. This demand for high performance may come from school administrators, education boards, and the parents of students, all of whom have high expectations. In modern school settings, teachers need to facilitate active learning and personalize education to meet each student's unique needs. In addition, they must foster social and emotional growth, integrate technology to enhance learning, and collaborate with stakeholders to set goals and support student success (Lanier, 1997). These professional responsibilities eventually cause the development of stress and burnout in teachers.

Stress is a feeling of worry or mental strain that arises in challenging situations. It's a normal part of being human and helps us react to difficulties or dangers. While everyone deals with stress at some point, how we handle it plays a key role in our overall health. A moderate amount of stress isn't necessarily bad, but when it goes beyond a healthy level, it can start to negatively affect a person's well-being. A person can experience stress from four main sources: their surroundings, social interactions, physical conditions, and their own thoughts (Matthews, 2001). Occupational stress is "a physiological and psychological response to events or conditions in the workplace that is detrimental to health and well-being. It is influenced by such factors as autonomy and independence, decision latitude, workload, level of responsibility, job security, physical environment and safety, the nature and pace of work, and relationships with co-workers and supervisors" (American Psychological Association, 2018). Occupational stress among teachers is a major concern as it leads to various negative consequences such as reduced job satisfaction, burnout, and even mental health issues. Teachers often face a range of stressors, including poor working conditions, heavy workloads, challenging student behaviour and attitudes, limited opportunities for professional advancement, and strained relationships with colleagues. Classrooms in developing countries are frequently overcrowded; requiring teachers to engage in constant verbal interaction, endure long hours of standing, and manage a heavy workload (Kaur, 2011). According to Tsubono and Mitoku (2023) regardless of the type of school, heavy workloads and extended working hours were the primary contributors to teachers' stress. The factors associated with teachers' stress include socio-demographic variables such as sex, age, marital status, as well as school

(organizational) and work-related elements like years of teaching, class size, job satisfaction, and the subject being taught (Agyapong et al., 2022). Stress is a natural reaction to challenging or threatening situations, but it becomes problematic when it is persistent. Chronic stress can interfere with daily functioning and emotional stability, and it increases the risk of developing other mental health disorders, such as anxiety and depression (Seo et al., 2017; Papastilianou et al., 2009). Occupational stress is known to result in negative outcomes like emotional exhaustion and decreased motivation, contributing to quiet quitting, where employees fulfil only their essential responsibilities and put in minimal effort (Yilmaz, 2024).

Besides addressing various professional demands, teachers also deal with their own personal responsibilities and challenges. Balancing these multiple pressures can aggravate their stress levels, which may manifest in their daily routines and overall well-being. This stress can affect their teaching effectiveness, job satisfaction, and even their interactions with students and can result in burnout and decreased work performance.

Review of Literature

Research on occupational stress indicates that institutional climate and the demographic traits of teachers play a significant role in contributing to stress levels. Dilekçi et al. (2025) explored the impact of occupational stress, burnout, and change fatigue on quiet quitting among teachers. Using a cross-sectional design the study surveyed 366 teachers. The results indicated significant positive relationships between occupational stress, burnout, change fatigue, and quiet quitting. Hierarchical regression analysis revealed that these factors accounted for 35% of the variance in quiet quitting.

Jennifer and Jayasinghe (2025) investigated the impact of work-related stress on primary school teachers (N = 107) in the Walapane educational zone of Sri Lanka and revealed that work-family conflicts and health issues account for 34.2% of the variance in occupational stress levels. However, 65.8% of the stress remains unexplained, indicating other potential factors such as workplace engagement, absenteeism, chronic stress, and stress within the work environment.

Singh and Thakur (2024), in a study among 408 teachers in Jalandhar, Kapurthala, Faridkot, Fazilka, and Ludhiana districts of Punjab, reported that: (a) teachers in private schools experienced higher levels of occupational stress compared to their counterparts in government schools; (b) there was no significant difference in stress levels between male and female teachers; (c) teachers under the age of 40 reported more stress than those aged 40 and above. The academic stream did not have a significant impact on occupational stress.

Lal Kumar et al. (2024) explored the occupational stress experienced by higher secondary mathematics teachers in relation to various demographic factors. A sample of 280 mathematics teachers from higher secondary schools located in the Vellore district were surveyed and found that there were no significant differences in occupational stress levels based on gender, school location, type of school management, medium of instruction, years of teaching experience, or marital status.

Bhattacharjya and Choudhuri (2024) studied the levels occupational stress among higher secondary school teachers (N = 120) in Murshidabad, West Bengal, examining their correlation and links to select socio-demographic factors. Findings showed that 92.5% of teachers experienced moderate stress. A significant negative correlation was found between stress and job satisfaction. Additionally, a significant association was noted between teachers' age and occupational stress.

Ghasemi (2024) observed the risk factors and coping styles influencing occupational stress across different ecological levels: biosystem (teacher traits), microsystem (classroom dynamics), mesosystem (school environment), exosystem (social policy), and macrosystem (cultural norms). Teachers face unique stressors at each level, with higher ecological levels (exosystem and macrosystem) leading to greater feelings of helplessness due to limited control. Major stressors include workload and interpersonal conflicts in the microsystem, organizational challenges in the mesosystem, and policy changes and discrimination at higher levels.

Mathew (2023) in a study among a sample of 100 teachers (50 novice teachers with less than 5 years of experience and 50 experienced teachers with more than 5 years of experience) aged between 23 and 60 years, teaching in various educational institutions across India, revealed that there is no significant difference in occupational stress between novice and experienced teachers.

Christian et al. (2022) assessed occupational stress among 218 high school teachers using the, focusing on factors like anxiety, depression, sleep issues, workload, and peer support. Analysis revealed that male teachers reported higher anxiety (72.72%) and depression (76.66%), while female teachers experienced more additional workload (38.88%). Depression was also more common in overweight and obese teachers. Overall, age and gender were significantly linked to various stress components.

Arockiasamy and Subramanian (2021) examined occupational stress among higher secondary school teachers in Cuddalore district, Tamil Nadu. Using a normative survey method and random sampling, data were collected from 200 teachers through an occupational stress inventory. Findings revealed that 17% of teachers had low stress, 64% had moderate stress, and 19% experienced high stress. A significant correlation was found between gender and levels of occupational stress.

A survey conducted by the EdWeek Research Center in July 2021 found that nearly 60% of teachers often or always experience job-related stress. This stress impacted their sleep, time with loved ones, and physical health. As a result, 41% said their work performance declined when stressed. Only 9% of teachers reported feeling little to no stress (Peck, 2025).

The study conducted by Rani and Sharma (2021) involved 500 women teachers working in both government and self-financed schools and colleges across five districts in Punjab, selected using a multistage random sampling method. The findings indicated that women teachers employed in government institutions, those working in urban areas, and those aged over 35 experience higher levels of occupational stress.

The foregoing discussion reveals that occupational stress among teachers is a complex issue influenced by a range of factors, such as institutional climate, personal demographics, workload, and broader systemic challenges. While moderate levels of stress are common, variations exist based on age, gender, school type, and professional context. Though some studies found no significant differences based on experience or demographics, others highlight notable correlations. Even though numerous studies have explored occupational stress among teachers, several gaps remain, suggesting the need for more focused and context-specific research.

Need and Significance of The Study

In the context of highly competitive and academically driven educational scenario of Kerala, mathematics teachers at the higher secondary level face increasing expectations from students, parents, institutions, and policy frameworks. Mathematics, being a core and often high-stakes subject, brings with it unique pressures related to syllabus completion, student performance in board and entrance exams, and managing diverse learning abilities in the classroom. Despite Kerala's achievements in literacy and education, there is a noticeable gap in research specifically addressing the occupational stress experienced by mathematics teachers, who often carry a substantial cognitive and emotional burden compared to their peers in other subjects. The profession's demands, coupled with factors such as workload, examination pressure, administrative responsibilities, and evolving curriculum standards, contribute to rising stress levels, which may affect teachers' well-being, job satisfaction, and ultimately, student performance.

This study is significant as it seeks to explore how demographic variables such as gender, teaching experience, school type (government, aided, or unaided), and locality influence the levels of occupational stress among mathematics teachers. Understanding these aspects is essential to design support systems, policy interventions, and implement wellness programmes to enhance teacher morale, reduce burnout, and improve the quality of mathematics education higher secondary schools in Kerala. The findings will be useful for educational planners, school administrators, and teacher educators to create a more supportive and sustainable work environment for mathematics teachers.

Statement of The Problem

Occupational stress among school teachers has become an increasingly serious issue, particularly in academically competitive and hard subjects such as mathematics. Mathematics teachers at the higher secondary level are often subject to high performance expectations, tight time schedules of syllabi, and the pressure for delivering steady results in academics. Kerala is known for its rigor and competitiveness in education and therefore, these pressures may be further intensified. Despite widespread recognition of teacher stress, there is a dearth of research studies precisely addressing the occupational stress experienced by higher secondary mathematics teachers in relation to major demographic variables such as gender, teaching experience, school type, and location. Therefore, the current study attempts to analyze the occupational stress levels of mathematics teachers in higher secondary schools of Kerala and identify the impact of selected demographic variables on the strength of this stress. Understanding these relationships is essential for adopting stress-reduction strategies, enhancing teacher well-being, and improving educational outcomes.

Research Questions

To what extent mathematics teachers of higher secondary schools experience occupational stress?

Is there a significant difference in occupational stress between male and female mathematics teachers in higher secondary schools?

How does the location of the school (urban vs. rural) affect the occupational stress experienced by mathematics teachers?

Does the type of school (government, aided, and unaided) have an impact on the occupational stress levels of mathematics teachers?

How does the teaching experience (years of experience) of mathematics teachers affect the levels of occupational stress?

Hypotheses

The level of occupational stress of higher secondary school Mathematics Teachers is moderate

There is no significant difference in occupational stress levels of higher secondary schools mathematics teachers with respect to gender.

There is no significant difference in the occupational stress levels of higher secondary school mathematics teachers with respect to locality of institution.

There is no significant difference in the occupational stress levels of higher secondary school mathematics teachers with respect to type of school.

There is no significant difference in the occupational stress levels of higher secondary school mathematics teachers with respect to teaching experience.

II. Methodology of The Study

The study employed a descriptive survey design to assess the levels of occupational stress among mathematics teachers in higher secondary schools in Kerala. The population consisted of mathematics teachers from various higher secondary schools across Kerala, and a sample of 200 teachers was selected from the Kollam district using random sampling technique. For data collection, the study utilized the standardized Teachers' Occupational Stress Scale developed by Sharma and Kaur (2014), which comprises 30 items across nine dimensions: workload, role ambiguity, groupism and external pressure, responsibility, powerlessness, work relationships, working conditions, personal inadequacy, and lack of motivation. This five-point scale has demonstrated good reliability (0.801) and validity, with total scores ranging from a minimum of 30 to a maximum of 150. The mid-value of the scale is 90, with high scores indicating high levels of occupational stress. The research tool was distributed to the selected teachers after obtaining their informed consent, with assurances of confidentiality and voluntary participation. Data analysis involved calculating descriptive statistics such as the mean and standard deviation to determine stress levels, while independent sample t-test and analysis of variance (ANOVA) were conducted to compare stress levels across different demographic variables.

III. Results and Discussion

Occupational stress of mathematics teachers of higher secondary schools

The responses gathered using the Occupational Stress Scale from the sample of 200 higher secondary school mathematics teachers were scored, and the total scores were analysed using descriptive statistics. The statistical measures of the occupational stress score distribution are shown in Table 1.

Table 1 Descriptive Statistics Related to Occupational Stress Scores of Higher Secondary School Mathematics Teachers

Sl. No.	Statistic	Value
1	Arithmetic Mean	91.95
2	Median	93.21
3	Mode	95.73
4	Standard Deviation	15.12
5	Skewness	-0.312
6	Kurtosis	0.301

As illustrated in table 1, the mean, median, and mode of the distribution of occupational stress scores are 91.95, 93.21, and 95.73, respectively. All these averages exceed the mid-value of the scale (90), indicating a moderate level of occupational stress among the mathematics teachers. The median score of 93.21 is slightly higher than the mean, suggesting a slight skew toward higher stress levels. The mode, or most frequent score, is 95.73, indicating that a substantial number of teachers report relatively high stress levels. The standard deviation of 15.12 reflects moderate variability in stress levels. The negative skewness value of -0.312 suggests a slight leftward asymmetry, with more teachers reporting higher stress. The kurtosis of 0.301 indicates that the distribution is close to normal, with a moderate peak and no extreme outliers, suggesting that the majority of teachers fall within a typical range of stress.

Several previous studies have highlighted moderate stress levels among teachers, and the findings are consistent with those of the current study. Bhattacharjya and Choudhuri (2024) found that 92.5% of higher secondary school teachers in Murshidabad, West Bengal, experienced moderate stress. Similarly, Arockiasamy and Subramanian (2021) reported that 64% of higher secondary school teachers in Cuddalore district, Tamil Nadu, experienced moderate stress. A survey by the EdWeek Research Center in 2021 revealed that nearly 60% of teachers often or always experience job-related stress, which impacts their personal lives and work performance.

Comparison of occupational stress of mathematics teachers based on gender

H₀: There is no significant difference in the occupational stress levels of higher secondary school mathematics teachers with respect to gender.

To see the impact of gender on the occupational stress of higher secondary school mathematics teachers, the researchers calculated the occupational stress scores for male and female teachers separately. The significance of the difference between the mean scores was assessed by computing the t value using an independent samples t-test. The data and the results of the significance test for the mean differences are presented in Table 2.

Table 2 Results of the Independent Samples t-Test to Assess the Significance of the Difference between the Mean Occupational Stress Scores of Male and Female Teachers

Sl. No.	Gender	Number of Teachers	Arithmetic Mean	Standard Deviation	t
1	Male	47	88.64	13.96	1.725 (p = .0861)
2	Female	153	92.98	15.36	

The results (Table 2) show that male teachers (N = 47) had a mean occupational stress score of 88.64 with a standard deviation of 13.96, while female teachers (N = 153) had a higher mean score of 92.98 with a standard deviation of 15.36. The calculated t-value is 1.725, with a corresponding p-value of .0861. Since the p-value is greater than the conventional alpha level of .05, the apparent difference in mean occupational stress scores between male and female teachers is not statistically significant; hence, the researchers fail to reject the null hypothesis. This suggests that gender does not have a significant influence on the occupational stress levels of higher secondary school mathematics teachers. These findings support earlier results by Singh and Thakur (2024) and Lal Kumar et al. (2024). However, in contrast, Christian et al. (2022) reported higher levels of stress among male teachers. Similarly, Arockiasamy and Subramanian (2021) found a significant correlation between gender and levels of occupational stress.

Comparison of occupational stress of mathematics teachers based on locality of institution

H₀: There is no significant difference in the occupational stress levels of higher secondary school mathematics teachers with respect to locality of institution.

To determine whether the locality of the school influences the occupational stress of higher secondary school mathematics teachers, an independent samples t-test was conducted to assess the significance of the difference between the mean scores of teachers from rural and urban schools. The data and results of the significance test for the mean differences are presented in Table 3.

Table 3 Results of the Independent Samples t-Test to Assess the Significance of the Difference between the Mean Occupational Stress Scores of Rural and Urban School Teachers

Sl. No.	Locality of institution	Number of Teachers	Arithmetic Mean	Standard Deviation	t
1	Rural	134	90.44	15.21	2.028 (p = .0439)
2	Urban	66	95.01	14.57	

The results of the independent samples t-test indicate a statistically significant difference in occupational stress levels between mathematics teachers from rural and urban schools. Rural teachers (N = 134) had a lower mean stress score of 90.44 (SD = 15.21), while urban teachers (N = 66) reported a higher mean stress score of 95.01 (SD = 14.57). A t-value of 2.028 was obtained from the t-test with a p-value of .0439, which is less than the conventional significance level of .05. This suggests that the difference in mean stress scores is statistically significant and the null hypothesis is rejected. Therefore, it can be concluded that urban school teachers experience significantly higher occupational stress compared to their rural counterparts. The increased stress among urban school teachers, as indicated by the results, can be attributed to several possible factors. Urban school teachers often face larger class sizes, more diverse student populations, more administrative demands, high expectations for academic performance from stakeholders, and greater exposure to social challenges such as poverty, crime, and behavioural issues. Previously, Dilekçi et al. (2025) reported that occupational stress is likely more common in urban settings. Similarly Rani and Sharma (2021) reported that urban teachers experience more occupational stress than rural school teachers.

Comparison of occupational stress of mathematics teachers based on type of school

The sample for the study included mathematics teachers from government, aided, and unaided higher secondary schools. The arithmetic means, along with the respective standard deviations, of the occupational stress scores of these groups of teachers are shown in table 4.

Table 4 Arithmetic Means and Standard Deviations of Occupational Stress Scores of Teachers from Government, Aided, and Unaided Higher Secondary Schools

Group	Number	Arithmetic Mean	SD
Government	76	88.51	15.51
Aided	88	93.20	15.12
Unaided	36	96.14	12.98

To determine whether type of school influences the occupational stress levels of higher secondary school mathematics teachers, the occupational stress scores of the three groups (government, aided, and unaided) were subjected to one way analysis of variance (ANOVA).

H₀: There is no significant difference in the occupational stress levels of higher secondary school mathematics teachers with respect to type of school.

The summary of ANOVA carried out for the occupational stress scores with regard to type of schools is detailed in Table 5.

Table 5 Summary of ANOVA Results for Occupational Stress Scores of Teachers by Type of School (Government, Aided, and Unaided)

Source of Variation	SS	df	MS	F	P-value	F crit.
Between Groups	1667.889	2	833.9447	3.7485	.0252	3.0417
Within Groups	43827.61	197	222.4752			
Total	45495.5	199				

The ANOVA results for occupational stress scores of teachers by type of school (Government, Aided, and Unaided) indicate a statistically significant difference among the groups. The F-statistic was calculated as 3.7485, which is greater than the critical F-value of 3.0417, and the p-value was .0252, which is less than the conventional significance level of .05. Based on these findings the researchers reject the null hypothesis, suggesting that there are significant differences in occupational stress levels among teachers from different types of schools. In other words, the type of school—whether Government, Aided, or Unaided—has a significant influence on the occupational stress experienced by teachers.

As the F-statistic indicates an overall difference among the sample means, it is necessary to identify which specific pairs of means show a significant difference. For the pairwise comparisons within the data, the researchers employed the Tukey's HSD (Honestly Significant Difference) test. The HSD value calculated at .05 level of significance was 6.5773. The results of these pairwise comparisons are presented in Table 6.

Table 6 Differences between the Pairs of Sample Means (Based on Type of Management of Institution) with Regard to Occupational Stress

Category	Government Mean = 88.51	Aided Mean = 93.20	Unaided Mean = 96.14
Government Mean = 88.51	0	4.69	7.63
Aided Mean = 93.20	--	0	2.93
Unaided Mean = 96.14	--	--	0

The results of the Tukey's HSD post hoc test reveal that only the comparison between government school teachers and unaided school teachers shows a statistically significant difference in occupational stress scores, with a mean difference of 7.63, which exceeds the critical HSD value of 6.5773. This suggests that teachers in these two groups experience significantly different levels of occupational stress. The comparisons between government and aided school teachers (mean difference = 4.69), and between aided and unaided school teachers (mean difference = 2.93), do not exceed the critical value and are therefore not statistically significant.

Since the occupational stress score of unaided school teachers is higher than that of government school teachers, it can be inferred from the analysis that mathematics teachers in unaided higher secondary schools experience significantly higher levels of occupational stress compared to their counterparts in government schools. The high levels of occupational stress experienced by unaided school teachers may be due to several reasons. Unaided schools often provide lower salaries, limited job security, and fewer benefits, contributing to financial and career-related insecurity. Teachers in these schools are typically burdened with heavy workloads, higher expectations for student performance, and less access to professional development opportunities. They may face greater pressure from both school management and parents, along with limited autonomy and administrative support. In contrast, teachers from government schools benefit from more stable employment conditions, regulated workloads, better pay scales, and supportive institutional environments, which help buffer against occupational stress. These disparities in working conditions likely account for the significant difference in stress levels observed between the two groups. Previously Singh and Thakur (2024) reported similar findings.

Comparison of occupational stress of mathematics teachers based on teaching experience

The sample taken for the study included mathematics teachers of different years of teaching experience such as below 10 years, 10-20 years, 20-30 years, and above 30 years. The arithmetic means, along with the respective standard deviations, of the occupational stress scores of these four groups of teachers are shown in table 7.

Table 7 Arithmetic Means and Standard Deviations of Occupational Stress Scores of Teachers with Different Years of Teaching Experience

Group	Number	Arithmetic Mean	SD
Below 10 years	46	92.30	15.22
10-20 years	73	92.66	17.30
20-30 years	64	90.02	13.07
Above 30 years	17	95.23	11.92

To determine whether teaching experience is an influencing factor of occupational stress of higher secondary school mathematics teachers, the occupational stress scores of the four groups (below 10 years, 10-20 years, 20-30 years, and above 30 years) were subjected to ANOVA.

H₀: There is no significant difference in the occupational stress levels of higher secondary school mathematics teachers with respect to teaching experience.

The summary of ANOVA carried out for the occupational stress scores with regard to teaching experience is detailed in Table 8.

Table 8 Summary of ANOVA Results for Occupational Stress Scores of Teachers by Teaching Experience (Below 10 Years, 10-20 Years, 20-30 Years, and Above 30 Years)

Source of Variation	SS	df	MS	F	P-value	F crit.
Between Groups	465.2793	3	155.0931	0.6751	.5683	2.6501
Within Groups	45030.22	196	229.746			
Total	45495.5	199				

The ANOVA results regarding occupational stress scores based on teaching experience (Below 10 years, 10–20 years, 20–30 years, and Above 30 years) indicate that there is no statistically significant difference among the groups. The F-statistic obtained was 0.6751, which is lower than the critical F-value of 2.6501, and the related p-value was .5683, which is well above the .05 significance level. These results lead to the conclusion that teaching experience does not significantly influence the occupational stress levels of mathematics teachers; hence the researchers fail to reject the null hypothesis. In other words, teachers experience comparable levels of occupational stress irrespective of their length of teaching experience. Some previous studies have reported similar findings. For example, Lal Kumar et al. (2024) found no significant difference in occupational stress with respect to years of teaching experience. Mathew (2023) also reported similar findings, indicating no significant difference in occupational stress between novice and experienced teachers.

Implications

The major findings and implications are discussed below:

Mathematic teachers in higher secondary schools experience moderate levels of stress: This finding indicates the need for interventions, such as stress management workshops and wellness programmes to address the basic causes and help teachers cope with their stress levels more effectively and address various challenges in professional and personal life. School administrators can provide more support to reduce the impact of stress, ensuring that teachers can maintain their well-being and effectiveness in the classroom.

There is no gender variation in occupational stress: Since there is no significant difference in occupational stress levels between male and female mathematics teachers, it implies that gender is not a major factor influencing stress in this context. Administrators and policymakers can focus on other factors, such as workload, teaching environment, and institutional support, to help mitigate stress for all teachers irrespective of gender.

Teachers in urban schools experience higher levels of occupational stress than rural school teachers: The results show that mathematics teachers in urban higher secondary schools experience significantly higher levels of occupational stress compared to their rural counterparts. This suggests that urban schools may face more challenges, such as larger class sizes, greater administrative workload, and more diverse student needs. School administrators should consider providing additional support to urban school teachers to help manage the increased stress.

Teachers in unaided schools experience higher level of occupational stress compared to those in government schools: Teachers in unaided schools reported significantly higher occupational stress levels compared to those in government schools. This finding highlights the need for addressing the working conditions in unaided schools, including lower salaries, higher workload, and limited job security.

Teaching experience is not a major factor that influences occupational stress: The lack of a significant difference in stress levels based on teaching experience suggests that all teachers, irrespective of their years of experience, similarly experience occupational stress. Interventions designed to reduce stress should be based on factors, such as workload, student behaviour, and institutional support. The development of comprehensive support programmes should be aimed at reducing stress for both novice and experienced teachers.

IV. Conclusion

Mathematics teachers in higher secondary schools face moderate levels of occupational stress, influenced by several factors. Gender does not appear to significantly affect stress levels, whereas teachers in urban and unaided schools experience higher levels of stress than their rural and government counterparts. Teaching experience also does not significantly impact stress levels, indicating the need for interventions that address general factors rather than individual characteristics. Introducing appropriate school-based interventions is essential to enhance teachers' ability to manage stress and promote overall well-being. It is important for policymakers, government bodies, school boards, and administrators to prioritize the development and implementation of awareness and intervention programmes within schools. Specific intervention strategies such as yoga practice (Maddux et al., 2018), meditation, mindfulness training programmes (Cheng et al., 2020; Brown et al., 2003), stress management and resiliency training programmes (Chesak et al., 2019), and rational emotive occupational health coaching (Onuigbo et al., 2018) have been found effective in mitigating stress and enhancing well-being.

References

1. Agyapong, B., Obuobi-Donkor, G., Burbach, L., & Wei, Y. (2022). Stress, burnout, anxiety, and depression among teachers: A scoping review. *International Journal of Environmental Research and Public Health*, 19(17), Article 10706. <https://doi.org/10.3390/ijerph191710706>
2. Akhter, N., & Akhter, N. (2018). Learning in mathematics: Difficulties and perceptions of students. *Journal of Educational Research, Department of Education, IUB, Pakistan*, 21(1), 147-163. <https://www.researchgate.net/publication/328772457>
3. American Psychological Association. (2018, April 19). Occupational stress. In *APA Dictionary of Psychology*. <https://dictionary.apa.org/occupational-stress>
4. Arockiasamy, S., & Subramanian, P. (2021). Occupational stress of higher secondary school teachers in Cuddalore district. *Journal of Positive School Psychology*, 5(2), 240-244. <https://journalppw.com/index.php/jpsp/article/view/15024/9724>
5. Bhattacharjya, S., & Choudhuri, M. (2024). Assessment of occupational stress and job satisfaction among school teachers in selected higher secondary schools of Murshidabad, West Bengal. *International Journal of Research - Granthaalayah*, 12(7), 12-28. <https://doi.org/10.29121/granthaalayah.v12.i7.2024.5669>
6. Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822-848. <https://doi.org/10.1037/0022-3514.84.4.822>
7. Cheng, X., Ma, Y., Li, J., Cai, Y., Li, L., & Zhang, J. (2020). Mindfulness and psychological distress in kindergarten teachers: The mediating role of emotional intelligence. *International Journal of Environmental Research and Public Health*, 17(21), 8212. <https://doi.org/10.3390/ijerph17218212>
8. Chesak, S. S., Khalsa, T. K., Bhagra, A., Jenkins, S. M., Bauer, B. A., & Sood, A. (2019). Stress management and resiliency training for public school teachers and staff: A novel intervention to enhance resilience and positively impact student interactions. *Complementary Therapies in Clinical Practice*, 37, 32-38. <https://doi.org/10.1016/j.ctcp.2019.08.001>
9. Christian, D. S., Sutariya, H. J., & Kagathra, K. A. (2022). Assessment of occupational stress among high school teachers of Ahmedabad City, India. *Indian Journal of Community Health*, 34(3), 413-417. <https://www.iapsmupuk.org/journal/index.php/IJCH/article/view/2424>
10. Dilekçi, Ü., Kaya, A., & Çiçek, İ. (2025). Occupational stress, burnout, and change fatigue as predictors of quiet quitting among teachers. *Acta Psychologica*, 254, Article 104812. <https://doi.org/10.1016/j.actpsy.2025.104812>

11. Gafoor, K. A., & Kurukkan, A. (2015, December 21–22). Learner and teacher perception on difficulties in learning and teaching mathematics: Some implications [Conference session]. National Conference on Mathematics Teaching – Approaches and Challenges, University of Calicut, Kerala, India. <https://files.eric.ed.gov/fulltext/ED568368.pdf>
12. Ghasemi, F. (2024). A systematic narrative review of teachers' occupational stressors and coping strategies: A bioecological systems perspective. *Research Papers in Education*, 40(1), 136-165. <https://doi.org/10.1080/02671522.2024.2381142>
13. Jennifer, D. C., & Jayasinghe, R. P. C. K. (2025). Assessing the impacts of occupational stress on primary school teachers: A study of the Walapane Zone, Sri Lanka. *Asian Journal of Education and Social Studies*, 51(1), 321-327. <https://doi.org/10.9734/ajess/2025/v51i11750>
14. Kaur, S. (2011). Comparative study of occupational stress among teachers of private and govt. schools in relation to their age, gender and teaching experience. *International Journal of Educational Planning & Administration*, 1(2), 151-160. https://www.ripublication.com/ijepa/ijepav1n2_7.pdf
15. Lal Kumar, A. C., Dinesh Kumar, A., & Vasuki, M. (2024). A study of occupational stress towards higher secondary teachers of mathematics. *International Journal of Applied and Advanced Scientific Research*, 9(1), 17-22. <https://www.researchgate.net/publication/378678623>
16. Lanier, J. T. (1997, July 1). Redefining the role of the teacher: It's a multifaceted profession. *Professional Learning*. <https://www.edutopia.org/redefining-role-teacher>
17. Maddux, R. E., Daukantaitė, D., & Tellhed, U. (2018). The effects of yoga on stress and psychological health among employees: An 8- and 16-week intervention study. *Anxiety, Stress, & Coping*, 31(2), 121–134. <https://doi.org/10.1080/10615806.2017.1405261>
18. Mathew, D. M. (2023). Occupational stress and wellbeing among teachers. *International Journal of Indian Psychology*, 11(3), 2545-2553. <https://doi.org/10.25215/1103.242>
19. Matthews, G. (2001). Levels of transaction: A cognitive science framework for operator stress. In P. A. Hancock & P. A. Desmond (Eds.), *Stress, workload, and fatigue* (pp. 5-33). Lawrence Erlbaum Associates Publishers.
20. Onuigbo, L. N., Eseadi, C., Ugwoke, S. C., Nwobi, A. U., Anyanwu, J. I., Okeke, F. C., Agu, P. U., Oboegbulem, A. I., Chinweuba, N. H., & Agundu, U.-V. (2018). Effect of rational emotive behavior therapy on stress management and irrational beliefs of special education teachers in Nigerian elementary schools. *Medicine*, 97(44), Article e12191. <https://doi.org/10.1097/MD.00000000000012191>
21. Papastilianou, A., Kaila, M., & Polychronopoulos, M. (2009). Teachers' burnout, depression, role ambiguity and conflict. *Social Psychology of Education: An International Journal*, 12(3), 295-314. <https://doi.org/10.1007/s11218-008-9086-7>
22. Patena, A. D., & Dinglasan, B. L. (2013). Students' performance on mathematics departmental examination: Basis for math intervention program. *Asian Academic Research Journal of Social Science & Humanities*, 1(14), 255-268. <https://www.researchgate.net/publication/272306490>
23. Peck, D. (2025, January 3). Teacher burnout statistics: Why teachers quit in 2025. <https://www.devlinpeck.com/content/teacher-burnout-statistics>
24. Phonapichat, P., Wongwanich, S., & Sujiva, S. (2014). An analysis of elementary school students' difficulties in mathematical problem solving. *Procedia-Social and Behavioral Sciences*, 116, 3169-3174. https://www.researchgate.net/profile/Suwimon_Wongwanich/publication/270847106
25. Rani, A., & Sharma, S. (2021). Occupational stress of women teachers in relation to certain demographic variables. *MIER Journal of Educational Studies, Trends & Practices*, 11(1a), Article 1776. [https://doi.org/10.52634/mier/2021/v11/i1\(a\)SPL/1776](https://doi.org/10.52634/mier/2021/v11/i1(a)SPL/1776)
26. Seo, J. S., Wei, J., Qin, L., Kim, Y., Yan, Z., & Greengard, P. (2017). Cellular and molecular basis for stress-induced depression. *Molecular Psychiatry*, 22(9), 1440-1447. <https://doi.org/10.1038/mp.2016.118>
27. Sharma, M., & Kaur, S. (2014). Teachers occupational stress scale. Agra: National Psychological Corporation.
28. Singh, S., & Thakur, K. (2024). A study of demographic variations of occupational stress of secondary school teachers of Punjab. *Journal of Teacher Education and Research*, 19(2), 1-6.
29. Tsubono, K., & Mitoku, S. (2023). Public school teachers' occupational stress across different school types: A nationwide survey during the prolonged COVID-19 pandemic in Japan. *Frontiers in Public Health*, 11, Article 1287893. <https://doi.org/10.3389/fpubh.2023.1287893>
30. Yilmaz, K. (2024). Silent resignation in organizations: A conceptual analysis and evaluation of research conducted in Türkiye. *Mediterranean Journal of Social Sciences*, 13(4), 1395-1410. <https://doi.org/10.33206/mjss.1491850>