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Teacher's Performance as a Function of Occupational Stress and Coping with Reference to CBSE Affiliated School Teachers in and around Hyderabad: A Multinomial Regression Approach

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Abstract

The research study reports the results of our investigation on causes of occupational stress, coping strategies adopted and their relationship with the teachers' performance in CBSE affiliated school teachers in and around Hyderabad. A survey of 300 CBSE affiliated school teachers consisting of 200 women and 100 men from in and around Hyderabad carried out to assess the eight independent stress causing factors—workload, role overload, role ambiguity, students behaviour, co-workers, school environment, school policies & ethics and social support—and effect of approach and avoidance coping strategies on employees' performance a dependent factor. To measure the reliability of the scale used in this study, and internal consistencies of the survey questionnaire, the reliability statistics Cronbach's alpha (C-Alpha) was measured. The overall C-Alpha value was 0.82 whereas the C-Alpha values ranged from 0.70 to 0.82, for all the 10 independent factors, and one dependent factor. The bivariate logistic analysis was carried out on dichotomous variables to measure the association of demographic variables with occupational stress. The multinomial logistic regression analysis was performed to estimate the likelihood odds ratios (ORs) to explain the factors associated with occupational stress, coping strategies and their relationship with the performance. Healthwise, some teachers developed chronic leg pains due to mild varicose vein disorders, maybe because of long standing teachings and there were no statistically significant differences with relation to gender on occupational stress and effect on performance.

Keywords

Teacher Occupational Stress, Performance, Cronbach's Alpha, Logistic Regression

1. Introduction

The occupational stress or job stress is common across the globe for working men and women and is unavoidable. In Hyderabad Metro and surroundings, around 200 of CBSE affiliated schools function at primary, secondary and high school and the strength of the teachers vary from 15 - 40, totaling roughly 5000 teachers about 70% consists of women teachers. The present survey undertaken in the CBSE affiliated private schools in and around Hyderabad. The schools need to generate the revenue for running the school including salaries and operational costs. The schools in Hyderabad face intense competition among them and the onus is on school management to provide best and quality education, security of child and with state of the art infrastructure to attract the parents to withstand the competition.

The concept of stress in the life sciences in 1936 by Hans Seyle, an Austrian born Endocrinologist, is first introduced. The physical, psychological and behavioral changes are a result of a man's adaptive reaction to stress. An individual can experience stress from the four basic sources, the environment, social stressors, physiological and thoughts (Matthews, 2001). The modernization, urbanization, globalization and liberalization which resulted in stiff competition led to the increased stress. Occupational stress is inevitable for the employees as work place is becoming a stress industry most of the employees—the age of anxiety. Of course, not all the stresses are destructive in nature. Reasonable quantity of stress can trigger one's passion for work, tap the latent abilities and even ignite inquisitiveness to take up new assignments. An individual is confronted with an opportunity, demand, or resource related to what the individual desired and for which the outcome is perceived to be both uncertain and important as occupational stress is a dynamic condition (Schuler, 1980). The General Adaptation Syndrome which has been widely held has a comprehensive model to explain the stress phenomenon (Selye, 1956).

Stress in School Teachers

In the recent past, the stress experienced by teachers has become an interesting aspect in India. The school environment, several activities within the school, lack professionalism, work load, lack of benefits, income level time pressures are some of the important factors (Mearns & Chin, 2003). Teachers also facing the problem of occupational stress and according to Kristensen et al. (2005) up to 40% of the teachers are suffering from under extreme stress or burnout, in European countries. In India, 42% of teachers showed high to very high level of stress among the female teachers. The time invested on students, colleagues, school politics and management create emotional, psychological and occupational difficulties in the school teaches (Van Horn, Schaufeli, & Taris,

2001). The burnout is another common syndrome effects the teachers on their performance and generate lot of occupational stress because of emotional exhaustion, depersonalization and lack of personal accomplishment (Montgomery & Rupp, 2005). Burnout is one of the major reasons that teachers turnout in teaching profession that results in added costs in training and hiring in the field of education (Niles & Anderson, 1993).

Ravichandran and Rajendran (2007) reported higher level of stress among female teachers on perceived personal stress in Chennai Metro. The Teacher Stress inventory toll which measures eight different factors namely Personal stress, Teaching assignments, Personal expectation, Teaching evaluation, Lack of support from parents and others, Facilities available at school, Organizational Policy and Parental expectations was used in this study. No genders differences were found on any other factor except Teaching Assignment and Teachers' qualification was also found to be significantly associated with the stress. Age differences were found on factors Personal Stress, Teaching Evaluation, Facilities available at school and Organizational Policy Experience only. Differences based upon type of school were found on Facilities Available at School, Facilities Available at School, Organizational Policy Experience and Parental Expectations (Ravichandran & Rajendran, 2007).

2. Review of Literature

2.1. Occupational Stress in Teachers

Nomita Punia and Shanti Balda (2016) in their reported that majority of the teachers working in Central Board of School Education (CBSE) experience moderate level of stress due to role overload, role ambiguity, role conflict, lack of control, poor peer relations, and strenuous working conditions. A study among working professions concluded that teachers and nurses experience more stress due to work overload heavy demands for other assignments (Chan et al., 1998). Bakhshi et al. found that 40% of university teachers had a high occupational stress. In the study, occupational Stress Inventory was used to measure stress. Occupational stress was found to affect household activities Bakhshi et al., 2008). Ahghar (2008) studied the influence of organizational climate in occupational stress among secondary school teachers in Tehran and reported that among the teachers working in the disengaged and closed climate, the rate of occupational stress significantly higher than the teachers working in the open climate.

In a study on occupational stress and coping strategies of Matriculation school teachers working in Thanjavur of Tamil Nadu the authors observed maximum level of stress from that work place perceived by 25 to 35 years aged respondents. The study further reported that female teachers were more prone to occupational stress than male teachers. It was also observed that the married teachers have felt maximum level of occupational stress from their family than unmarried respondents and most of the teachers who have below 3 years of working experience have using the stress relieving techniques at the maximum level (Karthikeyan & Babu, 2016). No significant differences

were indicated regarding occupational stress among teacher educators in relation to gender, and subject streams while significant results were observed in relation to nature of job (Nagra, 2013). Mariya Aftab and Tahira Khatoon (2012) reported the demographic differences and occupational stress of secondary school teachers in a population of 608 teachers from 42 schools of Uttar Pradesh (India). The results of this study reveal, nearly half of the secondary school teachers experience less stress towards their job and males display more occupational stress towards job than the females. Moreover, the trained graduate teachers are found to have higher occupational stress than postgraduate and untrained teachers. Teachers with an experience of 6 - 10 years face occupational stress the most, and 0 - 5 years the least; while those falling in the remaining two groups slide in between these two. Further, there no significant differences between monthly salaries, subjects taught, marital status and occupational stress of secondary school teachers.

Ansarun Hasan (2014) using a study of occupational stress of primary school teachers observed that the primary school teachers have found to be highly stressed. Moreover, the private primary school teachers have also found to be highly stressed in comparison to their government primary school teacher counterparts. A study reported that teachers exhibit moderate degree of occupational stress. Stress is present among teachers at all levels of experience, though differences exist in stress levels based on length of service or based on gender. Differences in stress levels were identified based on grade level taught, with elementary school teachers exhibiting higher levels of stress than did middle school or high school teachers (Johannsen, 2011). Smith (2012) concluded that specific demographic characteristics showed preferences for utilizing specific coping mechanisms. Significant relationships existed between specific coping mechanisms and age, length of teaching career, and type of certification, and hours spent on teaching and teaching-related tasks. Jeyaraj (2013) observed that there is a meaningful difference in the stress level points of Government and Aided Higher Secondary Teachers and that teachers who reported greater stress were less satisfied with teaching, reported greater frequency of absences and a greater number of total days absent, were more likely to leave teaching (career intention), and less likely to take up a teaching career again (career commitment). Amit Kauts and Vijay Kumar (2013) examined studying the influence of the emotional intelligence, age and qualification on the occupational stress of the teachers working in Jalandhar and Ludhiana districts of Punjab, India. Using a multi-stage random sampling method, a sample volume of 739 teachers and reported that the emotional intelligence, role ambiguity and role boundary and qualification has significant influence of occupational stress.

2.2. Stress in General

The psychological stressors influence the health through emotional, cognitive, behavioural and psychological factors (Levi, 1998). The role ambiguity, role overload, role conflict, lack of resources and strenuous working conditions have positive relations and are the common causes of the stress (Chand & Sethi, 1997). The type of work assigned

to an employee is also one of the stress factor and those engaged in work related to them able to cope the stress better than those who are assigned unrelated work (Tread Gold, 1999). Cooper and Marshall (1976) are of the view that by occupational stress is meant environmental factors or stressors such as work overload, role conflict, role ambiguity, and poor working conditions associated with a particular job.

Osipow and Spokane (1987) described six work roles that they felt were stressful regardless of an individual's actual vocational choice. Role Overload (RO) which measures the extent to which job demands exceed resources (personal and workplace) and the extent to which the individual is able to accomplish workloads (Osipow, 1998). Role overload can result in an employee experiencing anger and frustration toward persons believed responsible for the overload in work (Marini, Todd, & Slate, 1995). Cercarelli and Ryan (1996) indicated that, fatigue involves a diminished capacity for work and possibly decrements in attention, perceptions, decision making, and skill performance, perhaps must simply put, fatigue may refer to feeling tired, sleepy, or exhausted (NASA, 1996).

Role ambiguity is the degree to which clear information is lacking, the expectation associated with a role and method for fulfilling known role expectations; finally) the consequences of role performance (Graen, 1976; Kahn et al., 1964). The occupational stress can be caused by role ambiguity appear to cause lower productivity, tension, dissatisfaction, and psychological withdrawal from the work group (Van Sell et al., 1981).

Prasad et al. reported moderate impact at the workplace on employees performance in their study on the employees of an international agricultural research institute at Hyderabad Metro (Prasad et al. 2015). A comparative study on the cause of stress among the employees in IT sector with reference to International Agricultural Research Institute, Hyderabad reported that the job related stress in general and the stress factor job security in particular effects the employee performance in IT sector (Prasad et al., 2016).

2.3. Logistic Regression

The natural logarithm logit of an odds ratio is the main mathematical concept that underlies logistic regression. The logistic regression used for testing hypothesis about a relationship between categorical outcome variable and one more categorical or continuous predictor variables (Peng et al., 2002). In linear and multiple regression models sometimes the ordinary scatterplots are curved at the end with S-Shape and is difficult to interpret because the extremes do not follow the linear trend and errors are neither normally distributed nor constant across entire range of data (Peng, Manz, & Keck, 2001). A researcher can overcome this problem from logistic regression applying logit transformation to the dependent variable. In the essence logistic model predicts the logit, the natural algorithm of response variable (dependent) over continuous variable (independent). The simple form of logistic regression adopted from (Peng et al., 2002) is:

$$\text{Logit}(Y) = \text{natural log}(\text{odds}) = \ln\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta X$$

where β is the regression coefficient; π = Probability (Y = outcome of interest$|X = x$ and α is the Y intercept and this can be extended to the multiple predictors the equation is:

$$\text{Logit}(Y) = \text{natural log}(\text{odds}) = \ln\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots$$

where βs are regression coefficients, Xs are set of predictors. The αs and βs are typically estimated by the Maximum Likelyhood (ML) method which is preferred over the weighed least squares method (Haberman, 1978; Schlesselman, 1982).

2.4. Multinomial Logistic Regression

The multinomial logistic regression is an extension of simple logistic regression that generalized to multi class problems such as with more than two possible discrete outcomes. Using this model one can predict the probabilities of the different possible outcomes of a categorically distributed dependent variable or response variable and a set of independent variables which may be continuous, binary or categorical. Using multinomial regression the dependent variable in question is a nominal where more there are more than two categories (Suryawanshi et al., 2015). The nominal outcome variables using multinomial logistic regression are modelled in which the log odds of the outcomes are modelled as linear combination of the predictor variables (Suryawanshi et al., 2015). Sudhir Chandra Das (2016) in his study reported the results on predictors of work-family conflict and employee engagement among employees in Indian Insurance Companies applying multinomial logistic regression analysis. Several researchers (Suryawanshi et al., 2015; Kumar & Madhu, 2012; Stephen, 2014; Lotfizadeh et al., 2014) reported their results on occupation stress and associated factors using multinomial logistic regression. However the authors observed very limited research using logistic and multinomial regression measuring occupational stress, coping with relation to performance in particular working teachers. Therefore the authors attempted to use multinomial logistic regression method for evaluating the factors of occupational stress, coping with relation to performance of CBSE affiliated teachers.

3. Objectives and Hypotheses

Background and cause for the study: A wide range of studies on occupational stress and its related effects were carried out in Information Technology, Banking and Industrial sectors. As stress is common for all the employees irrespective of the area work, the authors pursued this study surveying the teachers working in CBSE affiliated private schools in and around Hyderabad Metro.

Research question: Is the teachers performance is a function of occupational stress and coping?

Objective

- To study the teachers performance as a function of occupational stress and coping in CBSE affiliated school teachers with related to gender and age.

Based on the identified problem, research question and the objectives the following hypotheses were formed:

H_{01}: Performance of CBSE affiliated school teachers is not a function of occupational stress and coping.

H_{11}: Performance of CBSE affiliated school teachers is a function of occupational stress and coping.

H_{02}: Occupational stress of CBSE affiliated school teachers is not significantly related to coping.

H_{12}: Occupational stress of CBSE affiliated school teachers is significantly related to coping.

H_{03}: Occupational stress of CBSE affiliated school teachers is not significantly related to age, gender, level of education, experience and non-teaching activities.

H_{13}: Occupational stress of CBSE affiliated school teachers is significantly related to age, gender, level of education, experience and non-teaching activities.

***Conceptual Framework*:** The proposed framework was adopted based on the past research by Selye (1993), and Prasad et al. (2015) and Prasad et al. (2016). The independent stress causing factors Stress Causing factors Workload, Role Overload, Role Ambiguity, Students Behaviour, School Environment, School Policies and Ethics, Social Support and Coping Strategies Approach Coping and Avoidance coping and dependent variable Teacher Performance. The following frame work is formulated on the objectives to be achieved shows the linkages of the factors in this study (**Figure 1**).

4. Research Methodology

***Sample Size*:** A sample size of 400 was selected using simple random sample sampling where each member of the subset has an equal probability of being chosen and data from 300 respondents was used for the analysis. The demography of sample presented

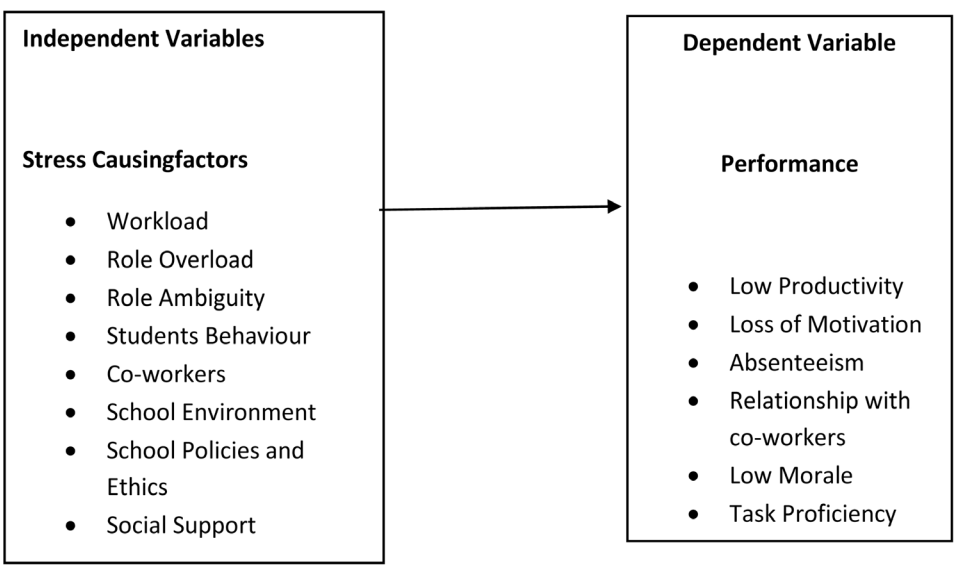

Figure 1. Conceptual framework.

in Table 1.

Research Instrument for data gathering: The research instrument used for the survey is a structured undisguised questionnaire using three scales: a) Occupational stress scale based on occupational stress index (OSI) developed by Srivastava and Singh (1984) which has 49 statements including 15 reversed keyed statements covering 8 factors with five Likert scale ranging from Strongly agree (5) to Strongly disagree (1); Performance scale based on Higher-Order performance Dimensions model proposed by Campbell (1990) which has 20 statements covering 7 factors using a 9 point Likert scale with values ranging from +4 to −4. This was converted to a 5 point scale for ease in calculation; +4 and +3 becoming 5, +2 and +1 becoming 4, 0 becomes 3; −1 and −2 becomes 2; −3 and −4 becomes 1. The scores range from 5 (strongly agree to 1(strongly disagree). The statements consists of 15 true keyed and 5 reverse keyed. The coping strategies scale constructed and standardized by Srivastava (2001) has 20 statements describing the factors Approach and Avoidance copings using a Liker scale with 5 (Almost Always) and 0 (Never) are main source for the primary data collection. Secondary data was collected from various published books, websites and records pertaining to the topic. The questionnaire was divided into 2 sections-in the Section I, Demographic variables like age, sex, number of years of experience, highest qualifications and other background information/personal details of the respondent were collected. The Section II of questionnaire was used to find out the stress levels of the employees, coping strategies and impact of the stress on performance as described above. To measure each factor, a range of 5 - 10 questions were given but all these questions were mixed systematically and the factors and their items listed in Table 2.

Data Analysis: In our empirical investigation we have applied statistical techniques

Table 1. Demography of the research sample.

Gender	Frequency	Percent
Women	200	66.67
	Age:	
20 - 29	40	20
30 - 34	52	26
35 - 39	53	26.5
>40	55	27.5
Men	100	33.33
	Age:	
20 - 29	21	21
30 - 34	25	25
35 - 39	30	30
>40	24	24
Total	**300**	**100**

Table 2. Stress causing factors and performance factors used in the study.

Factor	Factor	Items
1	Work overload	7: Number of hours, class size, result percent, enrollment, post school assignments, number of meetings, lesson planning.
2	Role overload	5: Too many expectations, role conflict with dual roles, conflict at home and work, etc.
3	Role ambiguity	5: Unclear explanation of role, confusion, too many untrained assignments, etc.
4	Students behaviour	5: Student knowledge, conflicts, classroom behavior, questions, understanding.
5	Co-workers	4: Factors Relationship with co-workers, stalking.
6	School environment	10: Lighting, Ventilation, teaching aids, library, clean toilets, communication, library, computer, transport, security.
7	School policies and ethics	8: Lack of consultation, job insecurity, fear of abuse from parent, cover for absent colleagues, poor management, discrimination of sex, workshop bullying, harassment.
8	Social support	5: Support from co-workers, Spouse, Emotional, Instrumental, Informational and Appraisal supports.
9	Approaching coping	10: Confront, Plan, Impulsive decision, alternative solutions, console, scheduling action plan, etc.
10	Avoidance coping	10: Leave, Off to sleep, smoking, alcohol, excessive eating, escaping, withdrawal, resignation, etc.
11	Performance	7: Low productivity, loss of motivation, absenteeism, relationship with co-workers, task proficiency, personal discipline.

to analyze the data for drawing inductive inferences from our research data. To ensure the data integrity the authors have carried out necessary and appropriate analysis using relevant methods on our findings. The descriptive statistics are used to summarise the data and to investigate the survey questionnaire, formulating the hypotheses the inferential statistics were employed. To measure the central tendency such as means, variance and standard deviation we used the dispersion methods.

Reliability methods: To measure the internal consistency, reliability of our research instrument, the survey questionnaire, and to maintain similar and consistent results for different items with the same research instrument, we used the reliability methods Cronbach's alpha. The Cronbach alpha is an index of reliability that may be thought of as the mean of all possible split-half co-efficient corrected by Spearman-Brown formula (Cronbach, 1951) and subsequently elaborated by others (Novick & Lewis, 1975; Kaiser & Michael, 1974). The estimated values of the Cronbach's alpha are indicated in **Table 3**. The Statistical Package for Social Sciences (SPSS ver. 24) was used to measure the central tendency, measures of variability, reliability statistics, and to predict the dependent factor PAS based on independent factors the multinomial logistic regression analysis carried out (IBM SPSS Statistics, 2016).

Formula for Cronbach's Alpha (C-alpha can vary between 0.00 and 1.00)

Table 3. Cronbach's alpha values for factors used in this study.

Sl. No	Factor	Cronbach's alpha
	Overall independent stress factors (1 - 9)	0.82
1	Work overload	0.80
2	Role overload	0.71
3	Role ambiguity	0.72
4	Students behavior	0.82
5	Co-workers	0.70
6	School environment	0.78
7	School policies and ethics	0.73
8	Social support	0.72
9	Approach coping	0.72
10	Avoidance coping	0.78
11	Performance	0.76

Overall: Split-half (odd-even) correlation: 0.86 Spearman brown prophecy: 0.90. Source: Primary data.

$$r_{\alpha}\left(\frac{N}{N-1}\right)\left(1-\frac{\sum\sigma_j^2}{\sigma^2}\right)$$

where r_{α} is coefficient alpha; N is the no of items; σ^2 variance of items. $\sum\sigma_j^2$ is sum of variances of all items and σ_j^2 is the variance of the total test scores.

Reliability test of the Questionnaire: The outcome of the survey was measured using a Likert-type scale with items 1 - 5 for all the questionnaires. In case of performance a 9 point Likert type scale was used (+4 to −4) was converted to a 5 point scale for ease of calculation and analysis. The reliability statistic Cronbach's alpha coefficient value (C-alpha) was calculated to test the internal consistency of the instrument (appraisal form in this study), by determining how all items in the instrument related to the total instrument (Gay, Mills, & Airasian, 2006). This instrument was tested with the data of 50 employees and using SPSS the Cronbach alpha static was measured at 0.78, suggesting a strong internal consistency. Three months later, keying data for all the 300 teachers the overall C-alpha measured at 0.89 and it ranged from 0.80 to 0.88 for the all independent and 1 dependent factors (**Table 3**).

A second reliability measure called Spearman Brown Split-Half Reliability Coefficient and Spearman Brown Prophecy were computed to assure the overall reliability of the scale items. The obtained overall Spearman Brown Split-Hall Reliability was 0.86 and Spearman-Brown Prophecy was 0.90 suggesting strong reliability of the instrument. In **Table 3** we presented the computed C-Alpha Static, for factors in the study (Trochim, 2006).

The Statistical Package for Social Sciences Version 24 was used to measure the central tendency, measures of variability, reliability statistics, correlations, parametric tests and to predict the dependent factor training program effectiveness based on indepen-

dent factors multiple regression analysis carried out (IBM SPSS Statistics, 2016).

The Mean, Standard Deviation and Standard Error in mean responders on factor scale for all the nine stress causing independent factors and dependent factor Performance were estimated and presented in Table 4. The overall mean and standard deviation was estimated from the responses. The overall mean was 3.00 and standard deviation was 0.6. Based on this Occupational stress score for Low, Medium and High stress determined (Table 4 & Table 5).

For a nearly symmetric distribution, the expected range will be 6 times of standard deviation (σ) and better approximation makes it a normal distribution. For our research data the observed range is in near normal distribution and is nearly equal to the 6 times of standard distribution (Andre Francis, 2008; Annamali & Nandagopal, 2014). In our study the sources of occupational stress has 64 questions where in 20 questions are reverse keyed and range values for these questions are between 1 and 5, hence, the minimum range 64 (1 × 64) and the maximum range value is 320 (5 × 84) the range is the difference between minimum and maximum values −256 for 64 questions. After adjusting the values of reverse keyed questioned of our study the overall range is 3.42 which is near to the 6 time standard deviation (0.6).

From the above Mean, the standard deviation is added and the maximum ceiling for the higher stress is set. The difference between mean and standard deviations calculated to find out the minimum ceiling for low level of occupational stress. The level between minimum and maximum is set as medium occupational stress level.

5. Results

To assess the independent stress factors effect on the dependent factor Performance based on 10 factors—the work overload, role overload, role ambiguity, students behaviour, co-workers, school environment, school policies and ethics, social support, approaching coping and avoidance coping and the dependent factor performance, the primary data gathered through questionnaire was analyzed. The stress was determined by the independent factors and the dependent factor performance was measured by low productivity, demotivation, absenteeism, relationship with co-workers, low morale, task proficiency and personal discipline. The calculated Mean, Standard Deviation and

Table 4. Determination of the level of occupational stress mean and standard deviation (overall).

Mean	Standard deviation
$\bar{X}$ = 3.00	σ = 0.6

Table 5. Rating of the score for occupational stress.

Total rating range of the score	Level of influence
($\bar{X}$ + σ) = 3.00 + 0.6 = 3.62 (>3.60)	High level
($\bar{X}$ − σ) = 3.00 − 0.6 = 2.40 (<2.40)	Low level
2.40 to 3.60	Medium level

Standard Error Values for men and women, for the primary data collected from the respondents (n = 200, women and n = 100, men) are presented in Table 6. From the results of Table 6, it was observed that the objective to find out the source and level of stress is fulfilled and the results also indicate that the stress exists among the employees of the both the stressors and effects performance at medium level. The estimate overall SE of 0.07 and 0.08 respectively for men and women are relatively small, indicating that the means are relatively close to the true mean of the overall population.

The overall mean value of stress and mean values for all the 10 factors indicates a medium level stress and these values and falls under the range 2.40 to 3.60 effecting the employees performance moderately (overall stress = 3.0) with the stress factor Role overload scored higher (Table 6).

5.1. Factors Associated with Stress

The bivariate analysis was performed to identify the factors responsible for occupational stress among teachers. Later, most significant predictors of occupational stress were identified used multinomial logistic regression. In bivariate analysis the stress was categorized into two modes (stress/no stress). Similarly other demographic variables recoded for carrying the analysis. Like was based on the qualifications the education/highest qualification was recoded as "possess professional qualifications" and "no professional qualifications". The association of socio demographic factors with occupational stress were presented in Table 7.

The association of socio demographic factors with occupation stress results were presented in Table 7. The results indicate that 46% of Men and 54% of women teachers experienced stress, 62% less than in the age group of <34 years of experience stress

Table 6. Mean, Standard deviation and standard error in mean responders.

Dimensions	Mean	SD	SE	Level of stress as per the rate of scoring
Work overload	0.80	0.64	0.08	Medium
Role overload	0.71	0.68	0.09	Medium
Role Ambiguity	0.72	0.50	0.07	Medium
Students behavior	0.82	0.62	0.08	Medium
Co-workers	0.70	0.52	0.08	Medium
School environment	0.78	0.59	0.07	Medium
School policies and ethics	0.73	0.54	0.11	Medium
Social support	0.72	0.69	0.03	Medium
Approach coping	0.72	0.75	0.09	Medium
Avoidance coping	0.78	0.40	0.06	Medium
Performance	0.77	0.43	0.05	Medium
Overall Stress	3.02	0.62	0.07	Medium

Source: Primary data.

Table 7. Association of socio demographic factors with occupational stress.

		No Stress (N = 170)	Stress (N = 130)	Unadjusted OR	*P* value
Gender	Women (200)	130 (76.47)	70 (53.84)	1.097	0.278
	Men# (100)	40 (23.53)	60 (46.16)		
Age	Up to 34 years (186)	106 (62.35)	80 (61.54)	0.986	0.264
	>34 years (114)#	64 (37.65)	50 (38.46)		
Number of Years of Experience	Up 10 years# (175)	95 (55.88)	80 (61.54)	0.516	0.021*
	More than 10 years (125)	75 (44.12)	50 (38.46)		
Other Activities (Non-Teaching)	Women (200)	105 (61.76)	95 (73.07)	1.414	0.181
	Men (100)#	65 (38.24)	35 (26.93)		
Professional Qualification	No (180)#	100 (58.83)	80 (61.54)	0.878	0.022*
	Yes (120)	70 (41.17)	50 (38.46)		

OR: Odds Ratio, *P value < 0.05, #-Reference category.

where as 38% in the age group of >34 years. It was observed there were no statistically significant differences observed on occupational stress with relation to age, gender, and non-teaching activities. However, inexperienced teachers were having stress than experienced teachers and the results are statistically significant ($p = 0.021$), whereas the statistically significant differences were observed teachers possessing desired qualifications experience less stress when compared with the teachers not having desired qualifications (0.022).

5.2. Multivariate Analysis

Table 8 described the findings of multinomial logistic regression carried out to predict the independent factors associated with occupational stress in CBSE affiliated school teachers. The multinomial logistic regression analysis measures the effect of change in variation of one of the independent variable on the variation of the dependent variable-performance and explain the variation. The effect of different independent variables was explained in the relative log odd ratios (OR or Exp(β)). The results portray that except independent variable co-worker all the variables are significantly associated with the occupational stress and effect the performance factors task proficiency, and low morale. The relative log odds ratios has significant negative influence of independent variables Workload (OR 0.404, 95% CI 0.168 - 0.972), Role overload (OR 0.126, 95% CI 0.53 - 0.296), Role Ambiguity (OR 0.105, 95% CI 0.039 - 0.280), Students Behaviour

Table 8. Predicted probabilities from multinomial logistic regression of the influence of stress causing independent factors and coping strategies on dependent factor performance (odds ratios and 95% CI for Exp(β).

Variable		β	Std. error	Wald statistic	df	Sig.	Exp(β)	95% confidence interval for Exp(β)	
								Lower bound	Upper bound
Stress related factors and coping strategies	Intercept	42.719	5.818	53.917	1	0.000			
	Workload	−0.907	0.448	4.099	1	0.043	0.404	0.168	0.972
	Role overload	−2.073	0.436	22.606	1	0.000	0.126	0.053	0.296
	Role ambiguity	−2.255	0.501	20.259	1	0.00	0.105	0.039	0.28
	Students behaviour	−1.18	0.423	7.782	1	0.005	0.307	0.134	0.705
	Co-workers	−0.573	0.434	1.743	1	0.187	0.564	0.241	1.321
	School environment	−1.258	0.402	9.793	1	0.002	0.284	0.129	0.624
	Social support	0.325	0.132	6.062	1	0.04	1.384	0.224	0.837
	School policies & ethics	−1.349	0.406	11.040	1	0.001	0.259	0.147	0.575
	Approach coping	−1.209	0.387	9.760	1	0.012	0.298	0.129	0.216
	Avoidance coping	−1.309	0.406	10.395	1	0.001	0.270	0.148	0.345
	Task proficiency	−1.864	0.437	18.194	1	0.001	0.155	0.119	0.535
	Loss of motivation	−1.638	0.837	18.892	1	0.001	0.026	0.194	1.21
Performance (Teacher)	Low morale	−1.079	0.437	6.096	1	0.001	0.340	0.371	1.001
	Absenteeism	−1.143	0.437	6.841	1	0.287	0.319	0.132	0.323
	Relationship with co-workers	−1.764	0.437	16.294	1	0.381	0.171	0.122	0.536
	[Gender = F]	0.749	0.573	1.71	1	0.191	2.115	0.688	6.499
	[Gender = M]	0[b]	.	.	0	.	.	.	.

Reference category is performance overall b. This parameter is set to zero because it is redundant. Exp(β): Odds Ratio, *$P < 0.05$.

(OR 0.307, 95% CI 0.134 - 0.705), School environment (OR 0.284, 95% CUI 0.129 - 0.624), School policies and ethics (OR, 0.259, 95% CI 0.147 - 0.575) and Social Support (OR 1.384 95% CI 0.224 - 0.837) for Stress causing factors vs performance with overall performance as reference variable. The coping strategies Approach (OR 0.298, 95% CI 0.129 - 0.216), Avoidance (0.270, 95% CI 0.148 - 0.345) and values are significant at (P

< 0.05) level. The relative log odds indicate that task proficiency, loss of motivation and low morale are the factors effected by occupational stress. Increase in social support will decrease the stress and improves the performance (Table 8).

The β is the regression coefficient and e = 2.71828 (the base of the natural logarithm) and the results are expressed in natural logarithm of an odds ratio. This indicates for each unit increase in the independent variable Role overload the odds of being decrease in Performance from 1 to 0.126 ($=e^{-2.073} = 2.71828^{-2.073}$) verses Overall Performance as reference category and so on. Similarly for each unit increase in Approach coping strategies the likely odds of being decrease occupational stress from 1 to 0.298 ($=e^{-1.209}$) verses overall performance is reference variable with other factors kept constant. In the same way one unit increase in task proficiency the likely odds of being increase in performance from 1 to 6.44 units ($=e^{1.86}$) and so on. The results indicate the gender has insignificant influence on occupational stress and performance of the teachers.

A Wald test calculates a Z statistics, which is the ratio of the coefficient β to its standard error and the resultant Z is squared to yield Walt Statistic. Menard (1995) warns that for large coefficients, standard error is inflated, lowering the Wald statistic (chi-square) value. Agresti (2002) states that the likelihood-ratio test is more reliable for small sample sizes than the Wald test.

Therefore we reject the null hypotheses **H_{01}:** Performance of CBSE affiliated school teachers is not a function of occupational stress and coping; **H_{02}:** Occupational stress of CBSE affiliated school teachers is not significantly related to coping; **H_{03}:** Occupational stress of CBSE affiliated school teachers is not significantly related to age, gender, level of education, experience and non-teaching activities and accept the alternate hypothesis **H_{11}:** Performance of CBSE affiliated school teachers is a function of occupational stress and coping; **H_{12}:** Occupational stress of CBSE affiliated school teachers is significantly related to coping; **H_{13}:** Occupational stress of CBSE affiliated school teachers is significantly related to age, gender, level of education, experience and non-teaching activities.

6. Discussion

The primary data gathered to structured undisguised questionnaire with 89 questions which were sub-divided into 15 factors based on their characteristic grouped as stress causing factors, coping factors and performance factors. These findings include the two extremes of the Likert scale given in the analysis i.e. strongly disagree and strongly agree. The results when compared with gender indicated that there were statistically significant differences among the women and men. This is line with the similar study conducted by Yahaya et al. (2010), Annamali and Nandagopal (2014).

The research did find significant differences between the more experienced and less experienced respondents, and the teachers who possess required qualification and who do not posses required professional qualifications. The more experienced teacher with desired qualifications will experience less occupational stress and when compared to less experienced and who do not possess the required qualifications. The medium level stress exists at workplace and this needs to be addressed to further improve perfor-

mance. However given the nature and scope of the study, there are some limitations to this study.

Survey research will have some problems associated with its use as these are self-reported instruments may not be complete and reliable. However it can be reported that a strong internal consistency of the instrument was confirmed by both Cronbach's alpha and Spearman-Brown split-half reliable static at overall and at independent level using ordinal data.

A major limitation to the interpretation of the results is with the instrument i.e. survey questionnaire. The questionnaire was distributed circulating hard copies to the teachers of the CBSE affiliated schools, and we expect some biasedness because of the school environment and ethics. The researcher has no idea whether who has filled the form for same cases. The author can only make guess based on their age. The authors observed the similar answers from the hard copies received from the pilot study and final survey with insignificant differences.

7. Conclusion and Recommendations

The occupational stress is a dynamic character. This research study aimed at studying the impact of occupational stress on the employee performance at the workplace. The mean value is within the range of 2.40 - 3.60 which shows that medium level stress exists in the workplace of school teachers. The result further indicates that coping strategies are one of the methods to fight the stress. The teachers who received social support were able to cope with the stress better than the teachers with no social support. As the occupational stress is a dynamic factor, the school management needs to address this by using coping mechanisms, redesigning the work, and changing the school environment in having flexibility in implementing school ethics and policies. The health effects can be managed by ergonomics and some physical exercise, wearing flat, comfortable shoes with excellent support, taking a few minutes to rest with the feet elevated above the heart which at the end of the day can help alleviate any pressure and any pooling of blood that has occurred during the day. If possible when teaching, moving around the classroom rather than standing in one position, eating healthy food, adjusting work-life balance, controlling thoughts, emotions, and modifying lifestyle changes can be helpful to mitigate the effects of occupational stress. Yoga and meditation are the best way to address the effects of stress.

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