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Occupational Stress among Secondary School Teachers and their Coping Strategies: The Case of Central Zone of Tigray Region

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This study employed a cross-sectional survey method which intended at inspecting the current level of occupational stress, possible contributing factors and the mostly used coping strategies by central zone secondary school teachers of Tigray region. The study area consists of 1139 secondary school teachers and out of them 321 participants were taken for this study. Again, to select the sample schools, cluster random sampling and then lottery method of simple random sampling techniques were used. All BA holder teachers of the selected sample schools (except the principals and vice principals) were included in the sample size. To collect data for the study, occupational stress inventory, coping-questionnaire and stressor-questionnaire were used. To analyze the collected data, both descriptive and inferential statistics were applied. Accordingly, the result of the occupational stress inventory indicated that, all the secondary school teachers experienced high level of occupational stress. The dominant stressors were interpersonal related sources, administrative related sources and students'-parents related sources respectively. Besides, the mostly used coping strategy by more than half of the teachers was turning to religion. What is more, the result of this study also indicated that gender, work place and family size have no effect in experiencing occupational stress among the teachers. On the contrary, age and work experience have significant mean difference. Based on the findings of this study, the following recommendation was made. The educational bureaus of the central zone and the region, health professionals and other educational practitioners, in collaboration with the schools, should take appropriate measures to reduce the current level of the teachers' occupational stress and to make them use the most effective coping strategies.

Key words: occupational stress, stressors, coping strategies, teachers

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INTRODUCTION

Research findings indicate that, nowadays, the issue of psychological well-being of employees comes to be a center of attention globally more than any other times. Because, as the findings suggest, out of all the illnesses that encounter to human beings, 60-90 percent are emanated from stress-related cases, (Holeyannavar, 2009). This scholar added that occupational stress (OS) of teachers which emanates from job related stressors

becomes one of the target areas of mental health that inspires the interest and concerns of different research scholars. Accordingly, the consequences of occupational stress on the health of workers, their productivity and work motivation have received an ongoing attention since recent decades. Again, this currently given an ongoing awareness to realize the impacts of stress on the overall welfare of employees is decisive in order to develop effective coping strategies for it, (Arden, 2002, cited in Jackson, 2004).

Studies indicate that one of the growing health complications of workers that affect their work motivation, productivity and make them to become absent from their work areas is an occupational Stress (OS) that confronted them, (Gianakos, 2001, cited in Muthukrishnan, Saji Mon and Chaubey, 2011). As the studies suggest, if incongruity exists between what the workplace deserves and an individuals' ability to carry out those demands, the individuals develop an OS, which can strain them physically as well as mentally (Muthukrishnan, Saji Mon and Chaubey, 2011).

A recent report of the World Health Organization (in Leunga, S. S., Makb, Y. W., Chuic, Y. Y., Chianga, V. C., and Leea, A. C., 2009) also revealed that, globally, the psychological stress of workers become increasing through time. The consequence of this growing OS adversely impairs not only the health of the employed individuals but also for the society in general by declining the amount and quality of work and productivity when its level is high. Due to this reason, OS costs employers as much as US $200 billion per year globally. Consequently, this issue of OS among the secondary school teachers has been recognized as a devastating problem in many countries of the world. For instance, a study conducted in Hong Kong in primary and secondary school teachers shown that considerable number of teachers develop anxiety and depression problems in their work place, (Leunga et al., 2009).

In line with this, other previous studies suggested that teachers perceive their profession as a major stressful work situation compared to other professions and out of all the teachers, more than 33% of them reported that they experienced high level of OS in their work place, (Travers, 2001, cited in Morrison, 2005). Furthermore, a study which was carried out by Lindl (2001, cited in Morrison, 2005) also depicted that secondary school teachers confront a number of stressors in their daily activities that cause different levels of OS for them. These different levels of OS again affect for the teachers and for others who have an interaction with the teachers during their work days.

The nature of stressors can be physical or psychological (Cox et al., 2000a in Dollard, Winefield, and Winefield, 2003) and can cause both physical and psychological health complications on individuals. As the findings of different studies revealed, some of the possible sources of stress for the teachers that have an impact on their health are negative community attitude, heavy workload, lack of co-operation from head and colleagues, delayed and non-payment salaries, duties other than teaching, students' parents insults and assaults, political interference, students' misbehavior, poor working environment, time pressure and so on, (Gmelch, 1983 cited in Holeyannavar, 2009; & Jack and Punch, 2001, cited in Jude 2011).

It is also important to realize that as the theory of Yerkes and Dodson's (1908, as cited in Perrew´e, & Ganster, 2004) stated, individuals' responses to stress can cause positive or negative consequences on their performance. Accordingly, the two extreme levels of stress lead individuals to score low performance outcome in their profession; whereas the moderate level of stress motivates them to achieve their utmost outcomes.

Moreover, different studies which were carried out on the issue of OS in African high school teachers shown similar results with the issue discussed above. For instance, a study conducted by Mapfumo and Chitsiko (2012) in Zimbabwe revealed that majority of the participants considered teaching-learning process as a stressful and tedious job. As to the study result of these scholars, if there are problems in workload of the teachers, unsupportive behavior of heads of schools and parents, inapt interpersonal relationships among staff members, shortage of teaching aids and textbooks, difficult learners and financial problem etc., all these make the high school teachers to develop OS. Furthermore, other African study which was carried out by Asimeng-Boahene (2012) in Ghana showed that the working condition of the African teachers is inconvenient that create an OS on them and diminish their work satisfaction and motivation. Some of the factors that make the African work environment unfavorable and make the teachers to become powerless and frustrated in their work are lack of instructional materials, large sized classes, dearth of administrative support, inadequate professional training and few opportunities to grow professionally.

Individuals who experienced occupational stress might also use different coping strategies either to avoid it totally or to ameliorate it in order to minimize its negative effects in their life. In line with this statement, Curtis (2000) in his study indicated that people use different types of stress management strategies, which are believed as they have better benefits in minimizing stress like physical exercise, relaxation, behavioral modifications, cognitive therapies, biofeedback, meditations and so on.

Furthermore, studies carried out in Netherland (Bekkeretal., 2001, cited in Leungaetal., 2009) also depicted that active coping strategies and health promoting behaviors help teachers to minimize their occupational stress and enhance both their physical and

psychological well-being, which again lead them to have better performance in their work areas. This can be achieved if an appropriate help from different health professionals, educational leaders and other concerned bodies is provided for them (Holeyannavar, 2009).

Having this in mind, when we come to our country's context, Ethiopia has been a member state of the International Labor Organization and was the first African country to ratify convention No. 155 (1981) concerning occupational safety and health issue of workers in 1991; and since then, it has progressively worked towards its application and implementation (Federal Democratic Republic of Ethiopia, 2009). One of the occupational safety and health concern issues of the country is the overall well-being of its teachers including OS in order to address the quality and quantity of the nation's intended educational goal. However, in its implementation, there are a number of obstacles that hinder the successfulness of this intended goal. One of these obstacles might be an OS that encountered to teachers when they perform their daily activities, since Ethiopian secondary school teachers could not be an exception of the above mentioned world-wide OS effects. A study conducted in Ethiopia by Teshwal (2006) supported this idea and stated that the psychological well- being of employed women has been affected by an OS. Another study conducted by Girma (1995) also suggested that teachers stress is influenced by a host of work related factors that make them to become despairing in their profession; and younger teachers became more affected by the problem than their comparable groups.

Even though there are abundant research findings on the issue of OS in different specializations including high school teachers in other countries, as far as my knowledge is concerned, in Ethiopia, studies on OS among secondary school teachers are not only scant but also have low emphases from the concerned bodies. This indicates that there is knowledge gap with regard to the level of OS and coping strategies of high school teachers in our country.

STATEMENT OF THE PROBLEM

Teachers are engineers of every profession. They have an ultimate role in the actualization of school goals and overall development in this world. For that reason, those globally brilliant individuals who can lead and influence for the world and its population are teachers' products. Hence, no nation can develop in the absence of responsible and motivated teachers.

Even though the teachers carry out this decisive responsibility globally, different research findings suggested that their overall well-being and their effective performances are affecting by their experience of OS, (Adeyemo & Ogunyemi, 2005, Dorman, 2003, Van der Linde, 2000 as cited Jude, 2011).

So, in order to help teachers achieve the above mentioned decisive responsibility, assessing their current level of OS and knowing and applying the appropriate coping strategies is an increasingly important area of concern for educational sectors and administrative bodies of the schools . This helps the teachers to reduce their OS and to retain and love their professions.

In connection to this, Muthukrishnan, Saji Mon and Chaubey (2011) stated that if the extreme stress level of the employees is well recognized and minimized, its result becomes effective and the employees come to be more productive, healthy and motivated in their work areas. Accordingly, to address the above mentioned roles of teachers, the author of this study become instigated to conduct this research in central zone of Tigray region, because there is a paucity of local evidence on this issue especially in this area.

My experience and observation of the problem is the other reason that enthuse me to conduct this study. I had many contact times with some of the teachers during my community service and I observed the problem while the teachers explain their-complain continuously in meetings and in informal discussions concerning their occupational worries. Additionally, there were no awareness training programs provided by anybody else for them to prevent or minimize their occupational stress. Accordingly, having these gaps, I inspired to select this title and to conduct my study on this issue. Therefore, in this research, the following research questions had been addressed.

- ➢To what extent teachers in Tigray central zone secondary schools are currently experiencing OS?
- ➢What are the possible contributing factors to the current level of OS experienced by the teachers?
- ➢What are the coping strategies that are used by the teachers when they come across an OS?
- ➢From the contributing factors and coping strategies, which of them have the highest effect on the life of the teachers?
- ➢Is the different demographic variables of the teachers have a mean difference in experiencing an OS?

METHODS OF THE STUDY

Research Design

In this study, a cross-sectional survey research design was employed aiming to examine the current OS level experienced by Tigray central zone secondary school teachers. Because, this design is helpful for investigators to study subjects with different variables like different age levels, gender, work experience and so on at the same point in time.

Study Site

This study was conducted in central zone of Tigray region which is located to the northern part of Ethiopia. Aksum town, which is 1010 kms away from Addis Ababa, is the capital city of that central zone. At present, central zone of Tigray region has thirty governmental secondary schools which are providing educational services for the central zone society and its surroundings. All these secondary schools are, currently, providing regular educational services for more than 26,000 students, (Tigray education bureau, 2005).

Population

All the teachers of the above mentioned governmental secondary schools of central zone were the population of this study. In order to achieve the objective of this study, the author of this research obtained the list of all the secondary schools of this zone from the educational bureau of Tigray region. Accordingly, there were eight urban and twenty two rural secondary schools in the zone. In these secondary schools, there were 1139 teachers (male=832, female=307) that have from novice to 35 years work experience.

Sample Size and Sampling Technique

The sample size of this study was determined based on the size of the population. Accordingly, to obtain the sample size, first the number of sample schools that should be taken from the zone's total secondary schools has to be determined. To do this, assumed mean was obtained by a sample size determination developed by Cohen, Manion & Morrison (2000). These scholars stated that, with a confidence level of 95% and sampling error of 5, it is appropriate to take 217 samples from 500 population, 278 samples from 1000 population, 322 samples from 2000 population and so on. Based on this determination, 278 teachers were the assumed samples for this study since the number of the population was 1139, which is nearest to 1000. Besides, the average number of teachers per school was obtained by dividing the total population by the number of schools (1139/30 = 37.967). Having this data, the number of sample schools was determined by dividing the assumed sample size to the average number of teachers per school (278/37.967 = 7.322). Subsequently, to draw this seven sample schools, first I classified the zone's secondary schools in to urban secondary schools and rural town secondary schools by using cluster sampling technique. After this, I observed the population distribution in the two clusters and found that though the number of rural schools was more than twice of the urban ones, the number of teachers per school was higher in the urban schools. Therefore, in order the study have proportional sample size from the two cluster frames, I took three secondary schools from the urban school cluster and four from the rural town school cluster by using lottery method of the simple random sampling technique.

Having this reason in mind, I drew seven secondary schools as a sample and all the teachers of the selected sample schools are included in the sample size (i.e. 349 BA holder teachers). What is more, to increase validity of this study, all the principals and vice- principals of all the sample schools and diploma and MA holder teachers whom I found in the sample schools (7-dipoloma and 1-MA) were excluded from the sample size of this study. Because qualification difference and being in position might have an influence on the result of this study.

Data Collection Instruments

Description and Construction of the Instruments

To achieve the main objective of this study, I used three different data collection instruments. Accordingly, to examine the current OS level of the teachers, I adopted Occupational Stress Inventory for Teachers from Sheeja (1999 cited in Holeyannavar, 2009). I also made a thorough reading of previous studies regarding the sources of OS and grasping some common stressors to many findings. Thus, based on the idea of the research findings, I developed my own instrument of data collection for the possible contributing factors to assess their effect and magnitude on the life of the teachers. Again, concerning the coping strategies questionnaire, originally it was developed by Carver, Scheier & Weintraub (1989 cited in Myendeki, 2008) and for the purpose of this study, I adapted 38 items. The content and clarity of these items was also reviewed by different professionals. Generally, I used close-ended questionnaires to collect the necessary data for this study. The rationale to use a close-ended questionnaire is that the design is a survey where large amount of information from a relatively large sample is necessary for a dependable data.

Pilot Testing and Validation of the instruments

A pilot test was conducted on 30 participants of Aksum and wukro-marai preparatory schools and an internal consistency, Cronbach's alpha, was carried out. Accordingly, the reliability coefficient for the scale of Occupational Stress Inventory for Teachers was found to be (r = 0.823), for the contributing factors subscale(r = 0.897) and for the coping strategies subscale (r = 0.837). Thus, all the items were taken for the final questionnaire.

Regarding the issue of validation, the instruments were

reviewed by four professionals, who are instructors in Aksum University. Two of them were from measurement and evaluation and counseling units while the rest two were from language department to evaluate the content, clarity and structure of the items.

Procedure of Data Collection

Administration of the questionnaire

To collect the necessary data from the selected sample schools, I hired three data collectors and I provided them with instructions and training for two days regarding the administration protocol of the data collection procedures. After this, the data collectors including my-self divided the selected secondary schools of the zone and contacted the teachers and administered the questionnaires personally at the schools. Prior to the administration of the scales, they got the consent of the educational bureau of the zone and the principals of each of the schools regarding the data collection process. Besides, the participants were also informed that the participation was volunteer, informed about the objective and the significance of the study and importance of their co-operation for the study. The teachers were asked to fill-up all the statements by following the instructions given in each of the questionnaires. All the respondents were given assurance that their responses would be kept confidential and used for research purpose only.

Scoring

The scoring system of the three different data collection instruments of this study looks like as follows.

1. The scoring procedure of the occupational stress scale was done by using the scoring system which was established by the developer of the scale. First, the total sum of the answers for all the statements of the three point scale for every participant of this study was calculated, and then, these total scores were categorized in to the low, average and high labeling, (see table 1).
2. For the other two data collection instruments of this study, first I created indices for all the statements by grouping similar questions in to one. Accordingly, seven indices for all the statements that measure the possible sources of the OS and eight indices for those that assess the coping strategies were prepared. After I made the indices for all the statements of these sub scales, I calculated the total sum, its mean and its respective percentage value of the answers for all the point scales of all statements in every index. Thus, by using the mean value as a cut point for every index, I tried to compare the magnitude and effect of the indices, and gave an analysis for these issues.

Data Analysis Method

Raw data collected through the questionnaires was analyzed using different descriptive and inferential statistical methods, and SPSS version 20 was applied to calculate the test results of the different statistical tests. I used a chi-square test to analyze the frequency distribution of the nominal variables. I also applied mean, standard deviation and independent samples t-test to analyze the mean difference of gender and work place of the teachers regarding the dependent variable (level of OS).

One way analysis of variance was the other test carried out by the author of this research to analyze if there is a mean difference among the ratio variables of the high school teachers in experiencing an OS. In addition, to determine which condition differs from the other conditions for all the different levels of the independent variables which have statistically significant mean difference in the one way analysis of variance test; I carried out Tukey HSD test and the Student-Newman-Kuels post hoc test. For measuring the significance of all the tests, I used alpha = 0.05.

Finally, based on the responses of the teachers, I used the calculated means and their respective percentage values of every index for ranking the coping strategies and the possible contributing factors for the OS.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Demographic Characteristics of the Respondents

The demographic characteristics addressed by the questionnaire were gender, age, family size, work place and work experience of the teachers. Accordingly, the nominal variables (gender and work place of the teachers) were interpreted by using frequencies and percentages; and the scale variables (age, family size and work experience) were interpreted by using frequencies, percentages and means of the scores of the variables. In addition, a chi-square test also used here to examine the expected and observed frequencies of these nominal variables.

The composition of all the demographic variables of the entire respondents of this study is presented in table 2 and interpreted as follows.

A total of 349 questionnaires were distributed to the entire respondents of this study and 321 (91.97% of them) were properly filled and returned. As it has been indicated in table 2, 218 (67.9%) of the respondents were males while 103 (32.1%) were females.

Age is the other demographic characteristic of this study. Accordingly, as the same table depicted,

Table 1: *Scoring table for the occupational stress inventory for teachers*

Category	Range of scores
Low level of OS	0-17
Average level of OS	18-25
High level of OS	26-60

Source: Sheeja(1999), in Holeyannavar, P. (2009).

Table 2: *Demographic Variables of the Study*

Variable	Category	Frequency	percent	Total	mean	X^2
gender	male	218	67.9	321		41.199[a],df=1 Asymp. Sig=.000
	female	103	32.1			
age	18-25	63	19.6	321	33.396	
	26-39	186	57.9			
	40-65	72	22.4			
workplace	rural	160	49.8	321		0.003[a], df=1 Asymp. Sig=.955
	urban	161	50.2			
Family size	single	135	42.1	321	2.349	
	2-4family	149	46.4			
	5-8family	37	11.5			
Work experience	0-2year	36	11.2	321	10.953	
	3-5year	80	24.9			
	6-8year	65	20.2			
	9-11 year	35	10.9			
	12-14year	15	4.7			
	15-17year	16	5.0			
	18-35year	74	23.1			

out of the above mentioned total respondents, 57.9% were between the age ranges of 26-39, whereas19.6% respondents fall in the age group 0f 18-25.

As far as the work place of the teachers is concerned, out of the total respondents, 50.2% of them were from urban schools. Moreover, the chi-square test of the work place of the respondents demonstrated that the expected and observed frequency of the rural and urban participants of this study were almost identical (X^2=0.003[a], df=1, p>0.05).

The work experience of all the respondents of this study, which ranges from novice teachers to 35 years of work experience, is classified based on the current layers of teachers' development of our country which has seven layers (i.e. 'Jemari-memhir', 'Mahkelegna-memhir', 'Memhir', 'Keftegna-memhir', 'Tebabari- meri', 'Meri-memhir', and 'Keftegna-meri-memhir'). Based on this classification system, table 2 portrayed that most of the teachers (24.9%) were 'Mahkelegna' teachers followed by 'Keftegna-meri' teachers.

Level of Occupational Stress of the Teachers

The level of occupational stress in which the respondents generally experienced at their work is analyzed, presented and interpreted as follows.

Categorization of the Level of Occupational Stress of the Teachers

The labelling of the current OS level of the Tigray central zone teachers were accompanied by using the scoring

Table 3:*Categorization of the Level of Occupational Stress of the Teachers*

Label	N	%	Minimum score	Maximum score	$\bar{X}$
High OS	321	100%	27	49	38.02
Average OS	----		----	----	----
Low OS	----		----	----	----

Table 4: *Independent Samples t-test of Male and Female Teachers in Experiencing OS*

	gender	N	Mean	Std. Deviation	t-test for Equality of means		
					t	df	Sig. (2-tailed)
Experiencing OS	male	218	52.2064	4.26739	.633	319	.527
	female	103	51.8835	4.25718			

system which was established by the developer of the scale. Here, first, the total sum of the answers for all the statements of the three point scale for every participant of this study was calculated, and then, these total scores were used to categorize the teachers' OS in to low, average or high levels. To do this, it is necessary to know the minimum and the maximum scores of all the total sum of the teachers' responses as it is presented in table 3.

As it is presented in Table 3, the minimum score of the participants is 27 and the maximum score is 49. Therefore, the result of the current OS level of the secondary school teachers assessed by using Sheeja's OSIT indicated (as displayed in table 3) that all the teachers experienced high OS level in their work place, i.e. the entire scores of the teachers laid in the range that show high OS level of Sheeja's scoring scale (i.e. from 26-60).It is also interesting to realize that none of the scores laid either in the low or in the average stress level ranges. The possible reason for this might be that either the working condition of that zone be highly inconvenient, or the cost of living of this days is more difficult for the teachers. This indicates that the teachers of that zone and their profession seek a special attention in order to minimize this stress level, so that the teachers become more responsible, motivated and productive citizens in their line of work. They can also generate more competitive students whom they can play a great role in the development of our country.

Mean Differences of Male and Female Teachers in Experiencing Occupational Stress

To test whether there is a significant mean difference of male and female teachers in experiencing OS or not, the author of this research carried out an independent samples t-test, and the result and its interpretation is revealed underneath.

The assumption of equality of variance among the two groups is satisfied (Leven's test {F} = 1.048, P >0.05). So, the top row of Table 4 is used to interpret the result. Thus, the result of the independent samples t-test revealed that the mean difference between male and female participants in experiencing OS was found statistically insignificant (t=.633. df=319, p=.527, α=.05 that is p-value is greater than alpha value, two tailed). This implies that gender has no effect or both male and female teachers have the same experience of OS in their current work place. The reason that made gender to have insignificant effect in experiencing OS might be that there is no gender based treatment (affirmative action)given there and both may use similar coping strategies when they come across an OS.

Mean Differences of Rural and Urban Teachers in Experiencing Occupational Stress

To assess if there is a mean difference between the rural

Table 5: *Independent Samples t-test of Rural and Urban Teachers in Experiencing OS*

	work place	N	Mean	Std. Deviation	t-test for Equality of means		
					t	df	Sig. (2-tailed)
Occupational stress	rural	160	51.9000	4.31933	-.850	319	.396
	urban	161	52.3043	4.20423			

and urban work place of the teachers in experiencing OS, as it has been done for the gender variable, the author of this research carried out an independent samples t-test and its result is displayed in table 5.

The mean score of the rural school teachers (N = 160), as displayed in table 5, is 51.90 and their SD is 4.32; whereas the mean score of urban school teachers (N = 161) is 52.30 and SD is 4.20. Having this in mind, the result of the independent samples t-test was summarized beneath.

As far as the work place of the teachers is concerned, the assumption of equality of variance among the rural and urban school teachers is satisfied (Leven's test {F} = .043, P > 0.05). Hence, the test result of the top row of the table portrayed that work place has too little or has no effect on the OS experience of the central zone teachers (i.e. t = -.850, df=319, p=.396, two-tailed test). This might be because the living condition of the rural areas are improving, and facilities are tried to fulfill in these areas, which were present only in urban areas before like telephone, electricity, medias and so on.

Mean Differences among the Different Age Levels of the Teachers in Experiencing OS

Here, in examining the mean difference among the different age levels of the teachers concerning their OS, one way analysis of variance was applied, and the result was demonstrated in table 6A.

To analyze the test result of one way ANOVA in table 6A, the test of normality was tested. Accordingly, the skewness of OS score for the sample of this study (0.213) is within the range for normality (-1.0 to +1.0); and thus the assumption of normality required by one-way analysis of variance for skewness is satisfied. On the other hand, the kurtosis of OS score for the sample (1.126) is out of the range for normality. But, since F statistic is "robust", it is possible to calculate one way ANOVA test as the sample size of the study is large (N=321). Besides, one-way analysis of variance also assumes that the population variances should be equal. So, since the probability associated with the Levene's test (0.426) is greater than the level of significance (0.05), the null hypothesis is retained. The requirement for equal variances is satisfied.

Having the above assumptions, as it is presented in table 6A, the test exhibited that the different age groups of the teachers have statistically significant mean difference in experiencing OS. In other words, at least one of the age group levels is more exposed to OS problem than the others (F (2,318)= 3.583, P < 0.05).

In line with this, Tukey HSD and S-N-K (Student-Newman-Keuls) post hoc tests were applied among the three age group levels to determine which age group differs from the other in experiencing OS.

The test result on Table 6B depicted that teachers with the age group of 18-25 and 46-65; and with the age group of 26-39 and 40-65 have statistically significant mean difference in experiencing their OS. Accordingly, teachers with middle adulthood age rage /40-65 years/ were more exposed to high OS experience than the other two age groups. Moreover, although their mean difference is statistically not significant, teachers with the age group of 26-39 were also more exposed to high OS when they compared with the teachers who were in the emerging adulthood age group /18-25/. Therefore, based on the above test result, it is possible to infer that as the age of the teachers increases, the risk of their experiencing an OS also increases. The possible reason for this might be that either the treatment given to the teachers in their previous times was better than the current ones, or cost of living of this days is more difficult than the previous times for them.

Mean Differences of the Different Family Size Levels of the Teachers in Experiencing OS

In this sub topic, the author of this research again carried out one way analysis of variance to assess a mean difference, if any, across the three levels of the family size of the central zone secondary school teachers of Tigray region in experiencing the OS.

As it is observed in the ANOVA summary table 7, the ρ value: {0.425} (the possibility of committing an actual error) is greater than the α value (which is 0.05: the threshold of tolerance for possibility of Type-I error).

Table 6A: *One Way ANOVA Test among the Different Age Levels of Teachers in Experiencing OS*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	127.996	2	63.998	3.583	.029
Within Groups	5679.612	318	17.860		
Total	5807.607	320			

Table 6B: *S-N-K Test and Tukey HSD Test among the Different Age levels of the Teachers*

	age of respondents	N	Subset for alpha = 0.05	
			1	2
Student-Newman-Keuls[a,b]	18-25 emerging adulthood	63	51.5079	
	26-39 early adulthood	186	51.8602	
	40-65 middle adulthood	72		53.2500
	Sig.		.586	1.000

	(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	18-25	26-39	-.35228	.61605	.835	-1.8029	1.0984
		40-65	-1.74206*	.72908	.046	-3.4589	-.0253
	26-39	18-25	.35228	.61605	.835	-1.0984	1.8029
		40-65	-1.38978*	.58659	.048	-2.7710	-.0085
	40-65	18-25	1.74206*	.72908	.046	.0253	3.4589
		26-39	1.38978*	.58659	.048	.0085	2.7710

*. The mean difference is significant at the 0.05 level.

Table 7: *One Way ANOVA Test among the Different Family Size Levels in Experiencing OS*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	31.156	2	15.578	.858	.425
Within Groups	5776.452	318	18.165		
Total	5807.607	320			

Thus, it was retained that there is no significant mean difference among the different types of family size levels in experiencing OS ($F(2,318) = 0.858$, $p>0.05$). This might be due the reason that teachers with more family sizes might use better coping strategies than teachers with less family size.

Table 8A: *One Way ANOVA Test among the Different Work Experience Sub Levels of the Teachers*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	237.983	6	39.664	2.236	.040
Within Groups	5569.625	314	17.738		
Total	5807.607	320			

Table 8B: *Tukey HSD and S-N-K Test Results among the Different Sub-Groups of Work Experience*

	work experience of respondents	N	Subset for alpha = 0.05
			1
Student-Newman-Keuls[a,b]	15-17 year experience	16	50.5625
	9-11 year experience	35	51.3143
	3-5 year experience	80	51.4500
	0-2 year experience	36	51.6111
	12-14 year experience	15	52.0000
	6-8 year experience	65	52.5385
	18-35 year experience	74	53.3919
	Sig.		.118
Tukey HSD[a,b]	15-17 year experience	16	50.5625
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	3-5 year experience	80	51.4500
	0-2 year experience	36	51.6111
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	18-35 year experience	74	53.3919
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Mean Differences among the Different Work Experience Sub Levels of the Teachers in Experiencing OS

The other demographic variable of this study / i.e. the work experience of the teachers/ has been calculated in this sub topic by using one way analysis of variance test. Accordingly, the result of this test and its interpretation is given beneath.

All the assumptions which are required by ANOVA test were satisfied for the work experience variable result which is displayed in table 8A. Thus, as it is clearly presented in the table, the teachers categorized in the different seven sub-groups of work experience have statistically significant mean difference in experiencing their OS ($F(6,314) = 2.236$, $P < 0.05$). This shows that the samples are not random samples from population that have the same mean.

Once more, the Tukey HSD and S-N-K test results among the different sub-groups of the work experience of the teachers in table 8B indicated that as the work experience increases, the OS level of the teachers also increases, though the increment of the scores was not straight and the test results was not significant. For instance the mean score for the novice teachers was 51.6, for those that have from 3-5 work experience was 51.5, and the largest mean score of all the work experience sub-groups (53.4) was the mean that belongs to the group with 18-35 years of work experience.

The reason that might make the experienced

Table 9: *Means and their Respective Percentage Value of Each Index of the Stressors*

	N	Mean	Value in % $<\bar{X}$	Value in % $>\bar{X}$	Indexes rank in their high effects
Orgnal stressors index	321	54.8785	43.3	56.7	2
Env'tal stressors index	321	13.3084	50.8	49.2	5
Interpersonal stressors	321	18.9315	41.1	58.9	1
Home-work interface	321	15.3178	46.4	53.6	4
Student related stressors	321	11.1651	51.4	48.6	7
Personal stressors index	321	11.3988	51.1	48.9	6
Student-parents stressors	321	6.567	45.8	54.2	3

teachers to have high level of OS is that, due to the routine behavior of the work and the low income that teaching have, the teachers might despairing; or cost of living of this days might be more difficult than the previous times. This despairing could happen because some of them teach for a long period of time in the profession and saw that their life cannot be changed to a better status by this job, and the novice might also observe the living condition of the experienced ones.

Possible Contributing Factors for the Current OS Level of the Secondary School Teachers

The second objective of this study was targeted on assessing the possible contributing factors for the current level of OS of Tigray central zone secondary school teachers. Accordingly, based on the information of different literature findings, the author of this study developed a five point scale questionnaire that has 39 items. At this point, for the sake of analysis, the author created seven indices for the 39 items by grouping similar items that measure the same issue in to one index. Here, what I did was that I summed up all the answers of all the statements in every index for all the five point scales together and calculated their respective mean values, and then I demonstrated the results of the indices in table 9.

The mean value of the total sum scores and their percentage values of all the items in every index are clearly presented in table 9. Thus, based on this data, the author of this research tried to compare the degree of the stressors using the percentage values which are above and below the mean of every index, by using the mean value of every index as a cut of point.

Accordingly, as it is displayed in the above table, interpersonal related activities were the first ranked stressor for the secondary school teachers, which accounts the highest percentage value in comparison to the other stressor indices. Out of the responses given for this index, 58.9% of the central zone's secondary school teachers experienced OS difficulties due to interpersonal related problems with different members of the schools' communities like poor /or lack/ of inter-personal relationships with co-workers and supervisors, conflicting demands from colleagues and superiors, having to cover for absent teachers and lack of social support from supervisors or administrative bodies etc. All this lead them to develop poor or isolated relationship with others, which might concern them more while they perform their daily missions of the teaching learning endeavors. The possible reason for this might be that the teachers become despairing (or they prefer to be alone) either due to the inconvenient work environment they have or due to the routine behavior of the work and its low level of income.

Next to the above mentioned interpersonal problem, the other major source of OS for more than half of the central zone secondary school teachers was organizational /administrative/ related deeds. The same table above displayed that 56.7% of the participants showed high OS level for the stressors that emanated from administrative related activities. According to the response of the participants, these administrative related stressors were activities like lack of opportunities for professional improvement, being assigned with tasks to accomplish with in tight time deadlines, non-participatory administration system, inadequate and delayed salary and inadequate disciplinary policy of the schools. Besides, the teachers were also worried with activities like not having adequate autonomy to make decision on different tasks which are related to them, unfair and vague promotion system of the organizations, pressure to accomplish additional tasks other than teaching, dearth of additional reward to motivate employees, improper supervision of the administrative bodies and following these their fear of future job uncertainty were ranked in the second level by them. The reason that made the

Table 10: *Means and their Respective Percentage Values of Every Index of the Coping Strategies*

	N	Mean	Value in % $<\bar{X}$	Value in % $>\bar{X}$	Indexes rank in their high effects
Plan full coping index	321	21.5389	46.4	53.6	4
Confrontive coping index	321	11.3458	51.4	48.6	6
Avoidance coping index	321	22.0000	56.7	43.3	8
Social help coping index	321	15.2586	48.9	51.1	5
Self-control coping index	321	11.7414	42.4	57.6	2
Give up coping index	321	9.5763	45.2	54.8	3
Religion coping index	321	8.8941	37.1	62.9	1
Reappraisal coping index	321	6.2336	56.1	43.9	7

teachers stressed with this stressor might be that the administrative bodies of the schools don't have an open and collaborative work behavior with their teachers.

Student-parents related activities were again the third ranked stressor for 54.2% of the secondary school teachers, whereas 45.8% showed an occupational stress below the mean of this index. According to the response of the participants, these student-parents related stressors were activities like lack of cooperation on the part of students' parents, that is, parents do not have active participation in the teaching learning process in the schools and they do not actively attend their children's movement and academic status. In addition, negative attitude of students' parents towards the teachers was the other current suspicions for the teachers while they perform their professional missions. This might come to be a stressor for the teachers due to the reasons that the student-parents might not have good awareness about their responsibility and contribution for the effectiveness of the educational goals, and the educational practitioners and leaders of that society do not work cooperatively to create good awareness among the society regarding this issue. Thus, all these and other related activities of the parents might deteriorate the motivation of the teachers in actualizing their responsibility of achieving quality of education in that zone.

Additionally, the other fourth ranked stressor for more than half of the participants of this study was the stressor that emanated from the home-work-interface related activities. According to the result of table 9, while 46.4% of the participants of this study reported that they were not affected by the home-work-interface stressors, more than half of them (53.6%) described that they have a great problem with this issue. For that reason, activities like incompatible demands from your different personal and organizational roles, dearth of family support, conflict of responsibilities and roles at work and home, poor family living condition, and leading large family size were some of the home-work-interface related activities. The major reason that made the teachers to become stressed with this index might be the low economic level of their family (their home) which interferes with the professional responsibility of the teachers, which is expected to be achieved.

Coping Strategies Used by the Secondary School Teachers when they come across an OS

Identifying the coping mechanisms in which the secondary school teachers used when they are under OS and forwarding some effective coping strategies was the other major target of this study. To achieve this objective, the author of this research adapted a four point scale questionnaire that has 38 items, based on different literature findings. Accordingly, for the sack of analysis, the author created eight indexes for the these items by grouping similar items in to one index and this grouping system was made based on the result of different research findings /especially the Lazarus and Folkman model of problem-focused and emotion-focused coping mechanisms/. I also tried to sum up all the answers of all the statements in every index for all the four point scales together, and then calculated the mean of each index that serve as a cut of point for comparison of the indices to see their magnitude. Accordingly, I demonstrated the results of the coping indices in table 10.

Table 10 presented the means, their respective percentage values and the ranks for every index of the coping strategies in its magnitude usage for the teachers.

Thus, as far as the coping strategies is concerned, in comparison with the other coping indices, the first ranked coping strategy for the participants when they come across an OS was turning to religious events. As the response of the teachers, during stress times, most of the teachers (62.9%) engaged in religious activities /turned to religious events/ like praying more than usual, try to seek God's help or they try to put their trust in God more than any other stress free times in order to escape from their

OS. However, less than half of the respondents (37.1%) of this study did not support this idea and they said that they don't turned to religious events at all when they become under OS. The possible reason that made for more than half of the teachers to rely on this coping strategy as their best method might be due to the internalization of the power of religion, i.e. due to the teachers' strong belief that there is one super natural power that can solve their problems.

Emotional self-control was the second ranked coping strategy for the teachers. As the result in table 10 indicated, next to religious index, more than half of the secondary school teachers (57.6%) used emotional self-control coping strategies like forcing themselves to wait for the right time to do something, make sure not to make matters worse by acting too soon and keep themselves from getting distracted by other thoughts or activities by controlling their emotion. Here, the teachers prefer not to tackle the problem directly and this might be due to the reason that the teachers become despairing in their work areas and believe that there is no solution for their problems.

Based on its magnitude of usage, the third ranked coping strategy for the teachers to get away from their problem was give-up coping strategy. As the same table revealed, out of all the participants, 54.8% depicted that give-up coping was the third worthy strategy to get away from their problems; and they used activities like admitting to themselves that they couldn't deal with it and quit trying, accepting it as it cannot be changed or generally they just give-up for the problem and stop from trying to reach their goals. The reason for this might also be that the teachers do not have an anticipation that their problem can be solved /improved and totally their motivation is almost dying.

The other worthy coping strategy in which 53.6% of the teachers used to minimize their OS was plan full coping strategy. In this strategy, during stress times, the teachers used plan full activities like trying to come up with a strategy /make a plan of action/ about what to do regarding the problem, or they tried to change their challenging experience to an opportunity.

What's more, social support was the other coping strategy which was used by more than half of the secondary school teachers next to the above mentioned ones. At this point, during their stress times, the teachers tried to share /discuss/ their problems with others whom they believe that they can bring concrete solution for it; ask people who have had similar experiences what they did in order to get an experience of solving the problem; and tried to get emotional support from friends, coworkers or relatives. Furthermore, it is also important to note that less than half of the participants reported as they did not do these activities at all.

CONCLUSIONS AND RECOMMENDATIONS

Based on the above findings, the author of this research draws the following conclusions and possible recommendations.

CONCLUSIONS

After thorough analysis and interpretation had been carried out, the following conclusions are drawn.

- ❖ The finding of this study indicated that all the central zone secondary school teachers experienced high level of OS in their work place.
- ❖ The dominant sources of stress for more than half of the teachers appear to be interpersonal related activities, administrative related stressors, students' parents related stressors and home-work interface in that order.
- ❖ Religious related coping, emotional self-control related coping, give-up coping, plan full coping and social related coping strategies are the most used coping strategies respectively.
- ❖ Regarding the mean differences, the advanced testes indicated that gender, work place and family size have no effect in experiencing OS.
- ❖ But, age and work experience of the teachers have a statistically significant mean difference; that is, as the age and work experience of the teachers' increases, the risk of OS also increases.

RECOMMENDATIONS

All of the general secondary school teachers of central zone of Tigray region experienced high level of OS in their current work place. Accordingly:-

- ❖ The educational bureaus of the central zone and the region, stakeholders and others will need to take actions in collaboration with the schools like social and stress management trainings, fair promotion, and so on in order to enhance the interpersonal relationship skill and the work motivation of the teachers.
- ❖ The teachers association, the schools principals, counselors and leaders of that zone need to work cooperatively in the schools and in the community to create favorable environment for the development of good relationship among the teachers; among the teachers and students' parents and to make the students' parents active participants in the teaching learning activities.
- ❖ The administrative bodies of the secondary schools of that zone need to make

participatory and conducive environment for learning in order the teachers actively participate in tasks and decisions which are related to them.

- ❖ It is essential if counselors of the schools and other health workers need to help the teachers by creating awareness about effective coping methods like counseling services and behavioral modifications.
- ❖ It is better if stress management programs and encouragement services are provided to the older and more experienced teachers in order to improve their problem.
- ❖ Government and Ministry of education also need to give a special attention to the health of the teachers if a remarkable outcome of the educational policy will have to exist.

SUGGESTIONS FOR FURTHER RESEARCH

For investigating more and more validated and qualified research results, it is better if future studies include:

1. All elementary, general secondary and preparatory school teachers in their sample, and make comparison between them in experiencing OS.
2. Strategies to enhance the occupational stress of the teachers.
3. Different instruments that help for triangulation (both quantitative and qualitative instruments).

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