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SCIENCE TEACHERS' TEACHING EFFECTIVENESS, OCCUPATIONAL STRESS, AND COPING STRATEGIES: BASIS FOR INTERVENTION PROGRAM

JENNIFER G. DE VERA

Institution : Institute of Graduate and Professional Studies
Lyceum-Northwestern University
Dagupan City

Abstract : This study assessed the Science teachers' teaching effectiveness, occupational stress and coping strategies as basis for intervention program in Mangatarem I & II Districts, Schools Division Office I Pangasinan during the school year 2023-2024 in terms of the level of occupational stress of the Science teachers; stress levels of the Science teachers when they are grouped according to age; teaching experience; and civil status; potential sources of occupational stress of teachers; and coping mechanisms. The data gathered were properly coded, recorded, tallied, tabulated and interpreted using the SPSS for windows. Frequency counts and percentages were used for descriptive analysis. The study found out that stress experienced by the Science teachers is at normal level. The teachers are not easily affected by the difficulties that they encounter in relation to their job. Seemingly, they have a high level of stress tolerance. Generally, age, number of years of teaching experience, and civil status of Science teachers do not significantly affect the teachers' level of occupational stress. The primary sources of stress experienced by the teachers in order of prevalence are large class sizes, excessive paperwork or documentation, and inadequacy of resources, materials and equipment to do the job. In contrasts, the least prevalent sources of stress experiences and ranked last among the indicators are increased level of competition among colleagues, colleagues undermining competence or personality, and not airing of personal opinion. The proposed recommendations were based on the teachers' level of stress. The researcher recommended that Science teachers should be made aware of the specific work-related sources of stress for possible change and assistance along these areas. A "stress awareness" drive by incorporating topics on stress in the social orientation subject is encouraged. The normal level of stress among the teachers should be maintained in all aspects. Regular assessment of stress level should be conducted for preventive measures. Policies that will encourage more social interaction between administrators and teachers should be created and workshops and retreats on the subject of heightening awareness on stress management should also be held. Reward and recognition systems that will strengthen work ethics of teachers should be created. The proposed recommendations should be implemented in the school to keep stress at a bearable level. In terms of further research, it is recommended that the same study may be replicated in other districts to validate findings of the present research or to explore and evaluate the other variables or factors that may affect the stress experiences of the teachers and their coping mechanisms.

Keywords: occupational stress, coping mechanism

INTRODUCTION

Economic development and education share a deep connection that shapes the progress of nations. According to Schultz (2008), the level of economic development a country achieves is intricately tied to the quality of its educational system. This implies that a well-educated population paves the way for significant economic advancement. In the current global landscape, investing in human capital has emerged as a crucial element for enhancing international competitiveness. For instance, countries like Finland and South Korea have prioritized education by consistently producing highly skilled professionals who contribute to their economic growth.

To establish a globally competitive educational framework, it is essential to focus on nurturing educators who possess not only intellectual prowess but also a strong commitment to their profession. Ho (2006) emphasized the importance of continuous development for teachers and learners alike. This means adapting to evolving pedagogical techniques and technological

advancements to meet the demands of the future. It is imperative to recognize that despite the rapid changes in technology and communication, the core of education remains centered around the human element – the teacher. Therefore, empowering educators with the necessary skills and knowledge is fundamental in shaping the educational landscape for generations to come.

The life of an individual revolves around the constant interaction between his work responsibilities and the company he is a part of. Work holds a significant place in the fabric of human existence, as it serves as a means for sustenance and survival. A person's daily routine is predominantly occupied by work-related activities, highlighting the crucial role that work plays in shaping one's lifestyle and overall well-being.

In the realm of work, stressors are an unavoidable reality that individuals encounter on a regular basis. These stressors can manifest in various forms, such as demanding deadlines, challenging projects, or interpersonal conflicts within the workplace. The human response to such stressors is often characterized by emotional and physical reactions, which can have detrimental effects on both mental and physical health.

Elementary school teachers play a vital role in the development of children. They introduce children to the basics of numbers, language, science, and social studies. They use games, music, artwork, films, slides, computers, and other teaching technology to teach basic skills. Elementary school teachers take the time to model and instill good habits and a curiosity for learning. Stress is a part of the fabric of life. Nothing can isolate stress from human beings as evidenced from various researches and studies. Stress can be managed but not simply done away with. Defining stress is a very complex matter, which is the subject of different analyses and continuous debate among experts. Beyond the details of this debate, a general consensus can be reached about a definition of stress, which is centered around the idea of a perceived imbalance in the interface between an individual, the environment and other individuals. When people are faced with demands from others or demands from the physical or psycho-social environment to which they feel unable to adequately respond, a reaction of the organism is activated to cope with the situation.

The nature of this response depends upon a combination of different elements, including the extent of the demand, the personal characteristics and coping resources of the person, the constraints on the person in trying to cope and the support received from others. Okebukola and Jegede (2009) defined occupational stress as a condition of mental and physical exertion brought about as a result of harassing events or dissatisfying elements or general features of the working environment. This definition coincides with a research conducted by Levi (2006) who posited that stress is cost by a multitude of demands(stressors) such an inadequate fit between what we need and what we capable of, and what our environment offers and what it demands of us. Also, Kyriacou (2007) defined teacher stress as the experience by a teacher of unpleasant emotions such as tension, frustration, anger and depression resulting from aspects of his work as a teacher.

From the point of view of Levine and Ursin (2001), stress is a part of an adaptive biological system, where a state is created when a central processor registers an informational discrepancy. In essence, stress can be considered as any factor, acting internally or externally, that makes it difficult to adapt and that induces increased effort on the part of the person to maintain a state of equilibrium both internally and with the external environment. In congruence, Steinberg and Ritzmann (2000) affirmed that stress is an underload or overload of matter, energy or information input to, or output from, a living system.

Borg (2000) has also conceptualized teacher stress as a negative and potentially harmful to teachers' health. The key element in the definition is the teacher's perception of threat based on the following three aspects of his job circumstances. 1. that demands are being made on him. 2. that he is unable to meet or has difficulty in meeting these demands, and 3. that failure to meet these demands threatens his mental/physical well being.

According to the Department of the National Institute of Occupational Safety and Health in Cincinnati, U.S.A. (2009), job stress can be defined as the harmful physical and emotional responses the occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury. From a discussion document presented by the Health and Safety Commission of London, U.K. (2009), stress is the reaction people have to excessive pressures or other types of demand placed on them.

Education industry is one of the business organizations that offer services in terms of molding and crafting youngsters into good citizens of the country. It is the kind of business where individuals learned good values and various techniques and strategies that they can use as they start their own personal endeavor in life. These values, techniques and strategies are usually imparted to the students in all educational institutions through teaching methods that every teacher uses when conducting the lessons. Teaching is a very challenging job in which the teachers' performance is wrapped up in her/his personality. It requires a unique talent and sense of vocation if the teacher has to perform her/his role exceptionally well.

A very good teaching performance usually results when one teaches with enthusiasm, competence, effectiveness and with dedication to the profession. The teacher has to do dual tasks. One is instilling knowledge and the other one is breaking down the barriers that blocked during the process of inculcating such knowledge. Such concerns demands that those teaching the students must be creative and practice it diligently and faithfully. It is a mere fact that teachers are one of the key factors in the teaching-learning process. They perform a very vital role in molding the youth for the good of their family, community, and the entire society.

In a UNESCO study, Increasing Teacher Effectiveness," Lorin argues students who are assigned ineffective teachers have lower gains in academic achievement than those who are taught by a sequence of several highly effective teachers. Commenting on factors that impact on teachers ' effectiveness, Prof Dylan William of the Institute of Education, University of London recently singled out professionalism, clear thinking, expectations and leadership skills. He also cited stronger emphasis on selection of teachers and their quality teacher education. But in recent months there has been public debate on recruitment, training and promotion of teachers.

The issue is that whereas teacher development needs to be viewed as a lifelong process, more emphasis should be put on professional development rather than acquisition of certificates that cannot be directly used towards student achievement. In a comprehensive review of the school-based learning programs in 2008, TSC noted a decline in the performance of subjects taught by teachers undertaking those courses. "Inadequate preparation and absenteeism among teachers on the programs has increased," states the Report on School Based Learning Programs (2008). According to the report most teachers attending those courses failed to mark examinations and prepare report forms. Nevertheless, ineffectiveness of teachers is amplified by lack of resources to meet educational requirements of their students, especially those from poor backgrounds. According to the Teachers Service Commission (TSC), most of the cases reported for disciplinary actions are either absenteeism or negligence which is highly related to the level

of stress among the teachers. According to the report on discipline cases between 2003 and 2008, there were 6439 cases out of which over 50% of them are direct effects of stress among the teachers.

Statement of the Problem

This study sought to assess the level of Science teachers' occupational stress and coping mechanisms in relation to their effectiveness in Mangatarem I & II Districts, Schools Division Office I Pangasinan during the school year 2023-2024 as basis for intervention measures.

Specifically, it sought to answer the following sub-problems:

1. What is the profile of the Science teachers in terms of the following:
   1.1 age
   1.2 sex
   1.3 civil status
   1.4 length of service
2. What are the existing causes of occupational stress of the Science teachers and what level of extent are they?
3. What is the stress level of the Science teachers when they are grouped according to:
   2.1 age
   2.2 sex
   2.3 civil status
   2.4 length of service
4. What are the coping strategies of Science teachers in dealing with stress?
5. Is there a significant relationship between the profile of the Science teachers and their level of occupational stress?
5. Based on the findings, what intervention measures can be proposed for the Science teachers to address the problem on stress as they handle their duties and responsibilities?

METHODOLOGY

Research Design

Since the objective of the study is to determine and analyze occupational stress among Science teachers, the researcher utilized the descriptive survey method of research. Such method was employed because it involved description, recording, analysis, and interpretations of existing conditions.

The study included the level of occupational stress of the Science teachers; stress levels of the Science teachers when they are grouped according to age; teaching experience; and civil status; potential sources of occupational stress of Science teachers and their coping mechanisms.

Sources of Data

It was conducted in Mangatarem I & II Districts Schools Division Office I Pangasinan.

Instrumentation and Data Collection

To gather the needed data, the researcher personally administered a self-constructed questionnaire. The questionnaire was formulated based on the ideas and insights taken from the different authorities as reflected in the related literature as well as suggestions and recommendations given by the members of research committee. The original draft was refined according to the corrections and suggestions.

The questionnaire was composed of three parts. Part one dealt with the level of occupational stress of the Science teachers.

Part II dealt with the stress levels of the Science teachers when they are grouped according to age, sex, length of service, teaching experience, and civil status.

Part III dealt on the potential sources of occupational stress of Science teachers.

Part IV dealt on the coping strategies of Science teachers.

After permission granted to conduct the study, the researcher consulted various school authorities in the gathering of information pertinent to the research. Population of faculty teaching in different schools subject for study was taken from the official records available at the Department of Education, District Offices.

The researcher personally administered the questionnaire after proper coordination had been made with the different school principals. Administration of the questionnaire was mostly be done during the vacant periods of the researcher to facilitate data gathering and retrieval. However, in some schools, the faculty members requested more time in answering the questionnaire, hence, retrieval was made through the school research coordinator or through the link that was provided.

Tools for Data Analysis

To derive valid and accurate results, appropriate statistical measures were employed.

The gathered data was tallied, categorized, and subjected to descriptive and inferential statistical analyses. The statistical processing was conducted using SPSS v.16. Percentage, weighted mean, t-test, and One-way Analysis of Variance (ANOVA) was used to treat the data.

To answer sub-problem number 1 on the level of occupational stress of the Science teachers, average weighted mean was used.

To answer sub-problem 2, on the stress levels of the Science teachers when they are grouped according to age; sex, length of service, teaching experience; and civil status, t-test, and One-way Analysis of Variance (ANOVA) was used to treat the data.

To answer sub-problem 3, potential causes of occupational stress of Science teachers, average weighted mean was used.

To answer sub-problem 4, coping mechanisms of Science teachers, average weighted mean was used.

RESULTS AND DISCUSSION

This chapter deals in the presentation, analysis and interpretation of the data gathered relative to sub-problems in the study.

Profile of the Science Teachers

Table 1. Profile of the Science Teachers

Profile	Frequency	Percentage
Age		
20-35	23	41
36-50	21	38
51-65	12	21
Total	**56**	**100**
Sex		
Male	21	38
Female	35	62
Total	**56**	**100**
Highest Educational Attainment		
MAEd/MEd	34	61
With Ed.D./Ph.D. units	12	21
Ed.D./Ph.D.	10	18
Total	**56**	**100**
Length of Service		
1-5 years	20	36
6-10 years	16	29
11-15 years	11	20
16 & above	9	16
Total	**56**	**100**

As could be observed significantly from the table, there are more young teachers than the middle aged or very old teachers. This finding is in conformity with their teaching experience of 6-10 years. They have stayed not so long with the teaching profession.

As depicted in the table, it is evident that the participation of Science teachers in professional development activities is commendable. Specifically, all Science teachers have engaged in division training, showcasing their dedication to enhancing their teaching skills and knowledge. Moreover, a significant portion, 21 out of 56 teachers, which represents 38%, have also taken part in national level seminars such as the K to 12 Curriculum workshops. This demonstrates their proactive approach towards staying updated with the latest educational trends and methodologies.

The data clearly show that majority of the respondents attended training to upgrade themselves professionally. Their attendance could be attributed to their desire for personal and professional growth.

According to Peterson, et.al. (2009), adequate staff development must be provided for the teachers. They stressed that in-service training is needed for the implementation of new curricular reform since new roles require new skills, habits and attitudes.

Science Teachers' Level of Occupational Stress

Table 2. Science Teachers' Level of Occupational Stress

Indicators	WM	DE
1. Even over minor problems, I lose my temper and do Embarrassing things like yell or kick garbage can.	2.75	MH
2. I hear every piece of information or question as Criticism of my work.	2.99	MH
3. If someone criticizes my work, I take it as a personal attack.	2.75	MH
4. My emotions seem flat whether I'm told good news or bad news about my performance	3.05	MH
5. To avoid going to work I'd even call I'm sick when I'm feeling fine.	2.35	MH
6. I feel powerless to lighten my work load or schedule, even though I've always got too far much to do.	2.87	MH
7. I respond irritably to any request from my fellow teachers.	2.73	MH
8. On the job and off, I get highly emotional over minor accidents.	2.73	MH
9. I tell people about sports or hobbies that I'd like to do but say I never have time because of the hours I spend at work	2.89	MH
10. I work overtime consistently, yet never feel caught up	3.06	MH
11. If I even eat lunch, I do it at my desk while working.	3.11	MH
12. I see time as my enemy.	3.66	H
13. I can't tell the difference between work and play: it all feels like one more things to be done.	3.87	H
14. Everything I do feels like a drain on my energy.	3.8l	H
15. I feel like I want to pull the covers over my head and hide.	3.90	H
16.I blame my family- because of them, I have to stay in this job and location.	3.34	MH
17.I have ruined my relationship with fellow teachers whom I feel I compete against.	3.28	MH
AWM	**3.13**	**MH**

Legend

Rating	Mean Rating	Descriptive Equivalent
5	4.21-5.00	Very High
4	3.41-4.20	High
3	2.41-3.40	Moderately High
2	1.81-2.40	Normal
1	1.00-1.80	Low

Table 2 presents the mean values of the items and the overall mean obtained by the respondents. As shown, the stress level of the Science teachers is "moderately high" as shown by the computed overall mean (3.13). This implies that the respondents typically experience stress in the workplace but they generally able to withstand the pressure brought about by the stressful circumstances. This is also reflected in the mean values of the specific items with majority indicating a "moderately high" level. However, comparing the magnitudes of the ratings, the four statements with the highest values are; "I see time as my enemy"(3.66)," I can't tell the difference between work and play: it all feels like one more things to be done"(3.87), "Everything I do feels like a drain on my energy"(3.81). I feel like I want to pull the covers over my head and hide with 3.90. It can be observed that these items bear close relation with one another. The teachers appear to be working longer hours, taking on higher level of responsibilities and exerting more strenuously to meet rising expectations about occupational performance.

2. Level of Occupational Stress of Science Teachers

Table 3a. Level of Occupational Stress of Science Teachers According to Age

Indicators	21-30	31-40	41 & ABOVE	Fcv	Remarks
1. Even over minor problems, I lose my temper and do Embarrassing things like yell or kick garbage can.	1.64	1.69	1.83	1.507	NS
2. I hear every piece of information or question as Criticism of my work.	2.08	1.88	2.04	1.913	NS
3. If someone criticizes my work, I take it as a personal attack.	1.63	1.74	1.81	1.020	NS
4. My emotions seem flat whether I'm told good news or bad news about my performance	2.03	2.03	2.08	.126	NS
5. To avoid going to work I'd even call I'm sick when I'm feeling fine.	1.29	1.32	1.39	.719	NS
6. I feel powerless to lighten my work load or schedule, even though I've always got too far much to do,	1.81	1.91	1.87	.241	NS
7. I respond irritably to any request from my fellow Teachers.	1.63	1.70	1.78	.913	NS
8. On the job and off, I get highly emotional over minor accidents.	1.63	1.70	1.78	.993	NS
9. I tell people about sports or hobbies that I'd like to do but say I never have time because of the hours I spend at work	1.92	1.84	1.90	.199	NS
10. I work overtime consistently, yet never feel caught up	1.98	2.07	2.08	.264	NS
11. If I even eat lunch, I do it at my desk while working.	2.17	1.96	2.19	1.625	NS
12. I see time as my enemy.	2.10	1.69	1.96	3.248	P<.05
13. I can't tell the difference between work and play: it all feels like one more things to be done.	1.76	1.77	1.98	2.182	NS
14. Everything I do feels like a drain on my energy.	1.83	1.72	1.94	1.937	NS
15. I feel like I want to pull the covers over my head and hide.	1.80	1.49	1.72	3.665	P<.05
16.I blame my family- because of them, I have to stay in this job and location.	1.41	1.29	1.36	.561	NS
17.I have ruined my relationship with fellow teachers whom I feel I compete against	1.24	1.25	1.32	.552	NS

Table 3a presents a comparison on the level of occupational stress when the respondents are grouped according to age. As observed, there is no significant difference on the overall level of stress of the teachers when compared according to age as evidenced by the insignificance of the computed F-value. This means that the overall stress level of the teachers across the three (3) age groups are the same. The observed differences are only due to chance. Specifically, however, there is a significant difference among the means of 3 age groups in the item "I see time as my enemy" ($p<.05$) with the 21-30 years age group obtaining the highest mean. This means that the young adult group is the most stressed when it comes to dealing with time. People in this age group are sometimes too idealistic and want to accomplish many things at almost the same time. When they are unable to accomplish their objectives because of time constraint, then time becomes a source of stress. There is also a significant difference among the means of the three groups in the item, "I feel like I want to pull the covers over my head and hide" ($p<.05$) with the 21-30 age group obtaining the highest mean. This implies that again the young adult age group is the most stressed they would like to escape from the day-to-day activities that bring about stress.

Table 3b. Level of Occupational Stress of Science Teachers According to Civil Status

Indicators	S	H	MB	MPE	S/A	W	Fcv	R
1. Even over minor problems, I lose my temper and do Embarrassing things like yell or kick garbage can.	1.60	1.73	1.76	1.80	2.00	1.50	.77	NS
2. I hear every piece of information or question as Criticism of my work.	1.85	1.95	1.92	2.06	2.27	1.90	1.04	NS
3. If someone criticizes my work, I take it as a personal attack.	1.50	1.82	1.58	1.88	1.91	1.90	2.46	P<.05
4. My emotions seem flat whether I'm told good news or bad news about my performance	1.90	2.05	1.95	2.11	2.27	2.50	1.54	NS
5. To avoid going to work I'd even call I'm sick when I'm feeling fine.	1.17	1.32	1.19	1.46	1.64	1.50	2.95	P<.05
6. I feel powerless to lighten my work load or schedule, even though I've always got too far much to do,	1.81	2.00	1.82	1.85	2.55	1.90	1.47	NS
7. I respond irritably to any request from my fellow Teachers.	1.48	1.82	1.64	1.80	2.18	1.80	2.23	P<.05
8. On the job and off, I get highly emotional over minor accidents.	1.52	1.73	1.81	1.72	2.36	1.60	2.53	P<.05
9. I tell people about sports or hobbies that I'd like to do but say I never have time because of the hours I spend at work	1.83	1.91	1.91	1.87	2.27	1.80	.55	NS
10. I work overtime consistently, yet never feel caught up	2.10	2.27	1.84	2.11	2.36	1.90	1.54	NS
11. If I even eat lunch, I do it at my desk while working.	2.02	1.86	2.07	2.19	2.36	2.00	.66	NS
12. I see time as my enemy.	1.88	1.91	1.96	1.86	2.09	1.90	.20	NS
13. I can't tell the difference between work and play: it all feels like one more things to be done.	1.73	1.91	1.95	1.86	2.09	1.90	.46	NS
14. Everything I do feels like a drain on my energy.	1.73	1.91	1.95	1.86	2.09	1.90	.46	NS
15. I feel like I want to pull the covers over my head and hide.	1.58	1.73	1.65	1.68	2.00	1.30	.93	NS
16.I blame my family- because of them, I have to stay in this job and location.	1.29	1.36	1.23	1.42	1.45	1.10	1.07	NS
17.I have ruined my relationship with fellow teachers whom I feel I compete against	1.19	1.32	1.19	1.33	1.73	1.10	2.05	NS

Note : R- Remarks; S –Single; H- Head of the Family; MB-Married-Sole Bread Winner; MPE – Married- Partner is Employed; S/A- Separated/Annulled; W –Widow/Widower

Table 3b indicates the perceived level of occupational stress of Science teachers when grouped according to civil status. As shown, the differences among the overall means are not significant as evidenced by the computed F-value (1.58). This means that the stress level of the teachers across civil status is the same. The observed differences are only due to chance. Specifically however, a significant difference is gleaned across civil status in the item "If someone criticizes my work, I take it as a personal attack ($p < .05$), "I respond irritably to any request from my fellow teachers" ($p < .05$) "To avoid going to work, I'd even call I'm sick when I'm feeling fine ($p < .05$), and "On the job and off, I get highly emotional over minor accidents" ($p < .05$) with the "separated" obtaining the highest mean in all the aforementioned items. This implies that the "separated/annulled" teachers who experience criticism from their colleagues are perceived to have a higher occupational stress level. This apparently so because the "separated" feel that they are a failure in terms of their family relationships, hence, criticizing them will only add to the frustrations that they have already experienced. They are also annoyed by requests coming from other teachers. They feign sickness for their absences, and are highly emotional when faced with minor constraints. Sekaran (2005) said that work- family conflict has been found to be related to job, life, marital and family satisfaction and symptoms of mental and physical well being.

Table 3c. Level of Occupational Stress of Science Teachers According to Teaching Experience

Indicators	Below 10	11-20	Over 20	Fcv	Remarks
1. Even over minor problems, I lose my temper and do Embarrassing things like yell or kick garbage can.	1.69	1.76	1.85	0.76	NS
2. I hear every piece of information or question as Criticism of my work.	2.03	2.00	1.92	0.53	NS
3. If someone criticizes my work, I take it as a personal attack.	1.67	1.83	1.73	1.18	NS
4. My emotions seem flat whether I'm told good news or bad news about my performance	2.02	2.07	2.08	0.19	NS
5. To avoid going to work I'd even call I'm sick when I'm feeling fine.	1.33	1.33	1.42	0.53	NS
6. I feel powerless to lighten my work load or schedule, even though I've always got too far much to do,	1.99	1.81	1.79	1.66	NS
7. I respond irritably to any request from my fellow Teachers.	1.72	1.73	1.75	0.03	NS
8. On the job and off, I get highly emotional over minor accidents.	1.68	1.74	1.79	0.45	NS
9. I tell people about sports or hobbies that I'd like to do but say I never have time because of the hours I spend at work	1.90	1.91	1.83	0.21	NS
10. I work overtime consistently, yet never feel caught up	2.08	2.06	2.04	0.04	NS
11. If I even eat lunch, I do it at my desk while working.	2.13	2.06	2.18	0.34	NS
12. I see time as my enemy.	2.05	1.77	1.90	2.83	NS
13. I can't tell the difference between work and play: it all feels like one more things to be done.	1.82	1.87	1.96	0.50	NS
14. Everything I do feels like a drain on my energy.	1.88 1	1.81	1.86	0.19	NS
15. I feel like I want to pull the covers over my head and hide.	1.69	1.68	1.58	0.48	NS
16.I blame my family- because of them, I have to stay in this job and location.	1.37	1.32	1.34	0.14	NS
17.I have ruined my relationship with fellow teachers whom I feel I compete against	1.22	1.31	1.34	1.06	NS
AWM	**1.78**	**1.77**	**1.78**	**0.03**	**NS**

As shown in Table 3c, there is no significant difference among overall means when the teachers are grouped according to years of teaching experience. This means that teaching experience has not caused any variation on the stress levels of the teachers. Results of previous studies however reveal that new teachers are often more stressed than those who are already teaching for a longer period of time. This is due to the fact that they have to adjust to a new environment and that during their early years of teaching, they have to grapple on how to deal with their co-teachers and the roles and obligations that they have to abide being as members of the teaching profession.

3. Causes of Occupational Stress of Science Teachers

Table 4 shows the causes of occupational stress according to the respondent-teachers. Based on the mean, the top five (5) causes of stress are large class sizes, excessive paper work and documentation, inadequacy of resources materials and equipment to do the job, handling discipline problems in the classroom, and inadequate pay and incentives. It obtained an average weighted mean of 2.78 which is moderately high.

Table 4. Causes of Occupational Stress of Science Teachers

Indicators	Mean	DE	Rank
Large class sizes	3.13	MH	1
Excessive paperwork or documentation	3.04	MH	2
Inadequacy of resources, materials and equipment to do the job	3.00	MH	3.5
Handling discipline problems in Classroom	3.00	MH	3.5
Inadequate pay and incentives	2.97	MH	5
Having to monitor attendance and behavior of students	2.95	MH	6
Teaching poorly motivated students	2.94	MH	7
Unnecessary changes that have disrupted the work flow	2.90	MH	8
Overloaded curriculum content in own Subject	2.89	MH	9
Presence of additional assignment from normal work	2.86	MH	10
Parental contract and family Interventions	2.85	MH	11
Lack of time for discussion and Reflection	2.84	MH	12
Insufficient time to get things done	2.79	MH	13.5
Technological development	2.79	MH	13.5
Poor physical condition at work place	2.78	MH	15
Pressure to meet assessment targets	2.77	MH	16.5

Conflicting job demands and unclear job expectations	2.77	MH	16.5
Additional delegated responsibilities by superiors	2.75	MH	18
Overlapping of personal priorities and professional demands	2.74	MH	19
Lack of planned work program in different school activities	2.73	MH	20
Attendance to non-job related activities after work	2.68	MH	21.5
Inadequate or poorly defined discipline process	2.68	MH	21.5
Lack of group support in time of work crises	2.65	MH	23
Insufficient supervisor support in time of crises	2.63	MH	24
Lack of recognition by superiors	2.60	MH	25
Limited professional involvement and Stimulation on the job	2.58	MH	26.5
School policies are unclear and irrelevant	2.58	MH	26.5
Personal opinion not aired	2.55	MH	28
Colleagues undermining competence or Personality	2.52	MH	29
Increased level of competition among Colleagues	2.51	MH	30
AWM	**2.78**	**MH**	

Legend

Rating	Mean Rating	Descriptive Equivalent
5	4.21-5.00	Very High
4	3.41-4.20	High
3	2.41-3.20	Moderately High
2	1.81-2.40	Normal
1	1.00-1.80	Low

This finding conforms to the popular notion that teachers have too high a workload and it is the most common and frequent source of worries. Such finding also supports the contention of some researchers that structural rather than interpersonal factors are responsible for teacher stress. The major sources of stress for teachers are structural. As an example, they pointed out that reducing class size would have a significant effect on two of the major stressors reported by teachers, disruptive student behaviour and the physical working environment. In other words, organizational structures determine the extent of the impact on teachers of the interpersonal stressors inherent in their role. Kinman (2011) stated that in the public elementary sector the causes of stress are overwhelmingly reported to be structural rather than interpersonal.

Table 5. Coping Mechanisms Used by Science Teachers

Coping Mechanisms	M	SD
Distancing	1.93	.41
Confrontive	1.84	.52
Planful Problem Solving	1.43	.58
Self Controlling	1.37	.52
Seeking Social Support	1.07	.70
Accepting Responsibility	.89	.59
Positive Reappraisal	.80	.64
Escape/Avoidance	.61	.59

Note. Relative scores scale 0 = not used at all or does not apply 1 = used somewhat, 2 = used quite a bit, 3 = used a great deal

The survey instrument included inquiries based on the Ways of Coping questionnaire (WAYS). Respondents selected how often they had used the coping mechanisms listed to deal with the stressful teaching event they had previously identified. Each of the coping mechanisms fell into one of eight predefined categories or methods of coping. Overall raw scores indicating the sum of answers for all items in a specific coping mechanism were calculated. To create accurate comparisons, raw score results in each of the eight categories of coping mechanisms were converted to relative scores by calculating individual means for each specific mechanism (WAYS Scoring manual). Relative scores are reported on a scale from 0 - 3, with higher scores indicating more frequent use of that coping mechanism.

Recommendations

1. Teachers should be made aware of the specific work-related sources of stress for possible change and assistance along these areas.
2. A “stress awareness” drive by incorporating topics on stress in the social orientation subject is encouraged.
3. The normal level of stress among the teachers should be maintained in all aspects.
4. Regular assessment of stress level should be conducted for preventive measures.
5. Policies that will encourage more social interaction between administrators and teachers should be created and workshops and retreats on the subject of heightening awareness on stress management should also be held.
6. Reward and recognition systems that will strengthen work ethic of teachers should be created.

7. Research should be conducted into the role that using different coping mechanisms plays in teacher stress levels and quality of teaching.

8. Research should be conducted into time management among Science teachers and its effect on stress level and coping.

9. Research should be conducted to determine why teachers who are older are more likely to employ positive reappraisal as a method of coping.

10. The proposed recommendations should be implemented in the school to keep stress at a bearable level.

11. In terms of further research, it is recommended that the same study may be replicated in other district to validate findings of the present research or to explore and evaluate the other variables or factors that may affect the stress experiences of the teachers.

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