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Study on Occupational Health Status of Secondary Level Teachers Teaching in Government School of Kathmandu District

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Abstract

Introduction: Occupational health hazards of teaching includes ill health, poor physical posture and confusion that plays a vital role in triggering other diseases which are associated with musculoskeletal, cardiovascular, gastrointestinal, vocal cord, skin and other health problems. Most of the teachers develop occupational health problems after being enrolled into this profession, identification of such problems should be carried out in the initial phase of the profession. **Objective:** To access the health status of teachers in terms of age, gender, health problem and types of health problem. To access the association between gender, years in profession and health problem. **Methodology:** Cross-sectional study was conducted among teachers of selected secondary level Government school of Kathmandu i.e. 50 schools. Sample size of 270 was calculated. Random sampling was used for school selection. Response rate was 95.5 % i.e. 258 samples were collected. **Result:** Majority of the teachers i.e. 69% were facing some kind of health problem. Respondents who were above 30 years were found to have different kinds of health problems. Significant association between teaching for more than 10 years and health problem was observed among Males (72.7%, $P < 0.05$) and females (82.5%, $P < 0.05$). **Conclusion:** The proportion of health problem was slightly higher among male teachers than in female teachers. It is necessary to improve the work standards and quality of life of teachers, through establishment of routine health checkups and strong coordination between District Education office and District Public Health office.

Keywords: Occupational Health, Occupational disease, Occupation, Teachers, Secondary School

Introduction:

According to World Health Organization and International Labor Organization. As noted by Lie, A., Baranski, B., Husman, K. and Westerholm, P. (2002) occupational health is the promotion and maintenance of the highest degree of physical, mental

and social well-being of workers in all occupations by preventing departures from health, controlling risks and the adaptation of work to people, and people to their jobs.

Mesaria, S. and Jaiswal, N. (2015) stated that school

is an integral part of society which is responsible for determining the way for future generation. Teachers are the main role-player who help in shaping young children to morally valued and cultured adults and they have their overall physical and mental development responsibility. According to Erick, P. and Smith, D. (2013) teachers sometimes utilize their physical and mental capacity to the fullest which results in unwanted stress and physical and mental health problems. They get insufficient time to recover from these, which ultimately causes lifelong health issues. The role of teacher is not only to teach students but also to maintain class discipline, built lesson plans, evaluate overall performance of the students, dictate students, other works such as check note books, take students for field visit and sports activities, due to these burdens of activity, teachers suffer from physical and psychological health issues.

Occupational health hazards of teaching includes ill health, poor physical posture, confusion etc that plays a vital role in triggering other diseases which are associated with musculoskeletal, cardiovascular, gastrointestinal, vocal cord related, skin related and other health problems Manikandan (2012). As given by Nagra, V. and Kaur, H. (2014) Other problems related to teaching profession are depression, blood pressure, anger, irritability, eye related, respiratory, constant negative thoughts, neurological, etc. Attention should be paid to employee's health which includes physical, spiritual, psychological and emotional factors, for all this to be achieved consideration of occupational health factors should be given upmost priority. Zadeh M.N. and Fakhri S.L. (2011) states that most of the teachers develop occupational health problems after they have been enrolled in their profession, identification of such problems should be carried out in the initial phase of their profession.

In Nepal almost 20000 workers have experienced accident at their workplace, this resulted in nearly 200 deaths as cited in the article by Gautam, P.R. and Prasain, N.J. (2011). Monitoring, recording,

reporting and evaluation of occupational health safety and formulation of policy is very poor. Establishment of safe and environmental friendly facility, hazard free workplace and insurance scheme for workers will help in increasing the productivity and efficiency of the workers which ultimately lead to development of the nation. As stated by Gautam, P.R. and Prasain, N.J. (2011) there is an urgent need to safeguard the health of workers which can be done through designing safe work system to reduce risk, engineering controls, organizational and administrative methods, personal protective equipment and proper segregation of work time or routine.

Occupational Health of teachers teaching the secondary level in government school of Nepal is an important issues since it deals with the occupational health status of the teachers and the different kind of health problems they are facing due to their occupation. As teachers are the guardians of the students, their health status directly affects the health of the students. So, to find out the actual health condition of the teachers, such kind of study is very important and needs to be done. Teachers are the role model of students. Their health status affects the health of students who are the building blocks of nation. (Note-This study was conducted in 2013 AD September – October)

Objectives:

1. To access the health status of teachers in terms of age, gender, health problem and type of health problem
2. To access the association between gender, years in profession and health problem

Research question:

1. What is the health status of Teachers teaching in Public School of Kathmandu District?
2. What is the association between gender, years in profession and health problem?

Limitations.

This study was not conducted using the randomization sampling technique so it has a very low generalizability. The sampling technique is purposive and the study design was cross sectional, which in itself isn't the robust design. The sample size in terms of age, sex, and ethnicity were not in proportional manner. Also the study questionnaire are more knowledge based testing rather than finding the prevalence of occupational diseases.

Methodology:

A Cross-sectional study was carried out with the purposive sampling, on selected secondary level Government school of Kathmandu Districts which accounted of 50 schools. Using population of school teachers as 903 and Error 5%, sample size of 270 was calculated. Random sampling (Lottery Method for school selection), and simple random sampling method was used for respondent selection). Finally, the response rate was 95.5 % i.e. 258 samples were collected. Semi structured questionnaire was used as a tool for data collection and data was collected by self-administered method. The questionnaire was pre-tested. Participants of the pre-test were not included in the study. Other staffs of school like administrative staffs, security guards, office helpers and teachers outside from the Kathmandu valley were also excluded. Confidentiality of the information obtained was maintained and assured to all the participants during the process of data collection.

Data analysis:

The collected data were edited and coded. Data was analyzed by using the statistical package for social sciences (SPSS) version 16 and Micro soft Excel. Chi square test was used to know the level of significance. Level of significance was $p < 0.05$.

Result:

In Kathmandu valley there are 153 secondary level schools which have approximately 903 secondary level teachers. Through random sampling method 54 schools were selected out of which 270 samples

were given self-administered questioners to fill. From the 270 teachers who received questionnaire 258 completed and returned the questionnaire. This equates to 95.5% response rate.

The study found that majority of the respondents were males 193 (74.8). Age of the respondents also indicates that there are high number of teachers who are more than 30 years of age, which is approximately 232 (90.0%) teachers who are more than 30 years. Teachers from Brahmin ethnic group were found to be in high number that is 175 (67.8%) followed by Cheetri 45 (17.4%), Janajati 34 (13.2%) and Dalits 4 (1.6%).

Majority i.e. 169 (66.0%) of the teachers had done their Master's degree while 72 (28.1%) teachers had completed their bachelor's degree. 120 (47.6%) teachers had income level of NRs. 20000 to 25000 whereas 90 (35.7%) teachers had income level of NRs. 15000 to 20000. Teachers having work experience of more than 10 years were 172 (66.67%) where as teachers having work experience of less than 10 years was found to be 86 (33.33%). (Refer Table 1). Maximum respondents, 178 (69.0%) said that they were suffering from health problem. (Refer Table 2).

It was seen that irrespective of gender, respondents who were above 30 years were suffering from health related problems, and large number of females who were above 50 years were facing health problems i.e. (90.9%). (Refer Table 3)

Males were observed to have different health problems than compared to females. Likewise in terms of age group, respondents who were above 30 years were found to have different kinds of health problems in higher number. (Refer Table 4) Chi square test was used to observe the association between gender, health status and years in profession. Significant association between teaching for more than 10 years and health problem was observed among Males (72.7%, $P < 0.05$) and females (82.5%, $P < 0.05$). Similarly for both the sex significant

association was observed between more than 10 years of teaching and health problem, where 69.0%, ($P < 0.05$) of the teachers were having health problem. (Refer Table 5)

Table 1: Socio demographic data

Indicator	(N)	(%)
Gender		
Male	193	74.8
Female	65	25.2
Age		
20 to 29	26	10
30 to 39	91	35.3
40 to 49	105	40.7
50 and above	36	14.0
Ethnicity		
Bhramin	175	67.8
Chettri	45	17.4
Janajati	34	13.2
Dalit	4	1.6
Educational Status		
Intermediate	9	3.5
Bachelors	72	28.1
Masters	169	66.0
M Phill / PhD	6	2.4

Monthly Income		
15000 – 20000 NR	90	35.7
20000 – 25000 NR	120	47.6
25000 – 30000 NR	31	12.3
More than 30000 NR	11	4.4
Years in Profession		
10 years and less	86	33.3
More than 10 years	172	66.7

From the socioeconomic table it seems that at the time of study i.e., 2013 AD, September-October, the monthly income range of the teachers was about NRs. 20,000-25,000 and most of participants had more than 10 years of teaching experience. Majority of the respondents were from the Brahmin ethnic group whereas the dalits and janajati had low sample size. Most of the respondents were in the age group of 40-49 years. While the number of participants of 20-29 age groups were few. Moving to the gender, majority of the respondents were male. Majority of the respondents had a qualification of master’s degree.

Table 2: Health Status of the respondent

Health problems	N	(%)
Present	178	69.0
Absent	80	31.0
Total	258	100.0

Table 3: Prevalance of disease with, Age, Gender and Health problem

Age In years	Gender	Health problems		Total
		Present	Absent	
20 to 29	Male	7 38.9%	11 61.1%	18 100.0%
	Female	3 37.5%	5 62.5%	8 100.0%
	Total	10 38.5%	16 61.5%	26 100.0%
30 to 39	Male	50 68.5%	23 31.5%	73 100.0%
	Female	14 77.8%	4 22.2%	18 100.0%
	Total	64 70.3%	27 29.7%	91 100.0%
40 to 49	Male	54 70.1%	23 29.9%	77 100.0%
	Female	21 75.0%	7 25.0%	28 100.0%
	Total	75 71.4%	30 28.6%	105 100.0%
50 and above	Male	19 76.0%	6 24.0%	25 100.0%
	Female	10 90.9%	1 9.1%	11 100.0%
	Total	29 80.6%	7 19.4%	36 100.0%

Table 4: Prevalence of health problems with Age, Gender and type health problem suffered by the respondent.

Type of health problem Suffered	Gender		Age in Years			
	Male	Female	20 to 29	30 to 39	40 to 49	50 and above
Respiratory	37 67.3%	18 32.7%	3 5.5%	20 36.4%	20 36.4%	12 21.8%
Cardiovascular	9 69.2%	4 30.8%	0 .0%	4 30.8%	6 46.2%	3 23.1%
Gastrointestinal	20 83.3%	4 16.7%	1 4.2%	6 25.0%	12 50.0%	5 20.8%
Neurological	8 72.7%	3 27.3%	0 .0%	4 36.4%	4 36.4%	3 27.3%
Psychiatric	10 76.9%	3 23.1%	2 15.4%	7 53.8%	4 30.8%	0 .0%

Dermatology	9 90.0%	1 10.0%	0 .0%	8 80.0%	1 10.0%	1 10.0%
Bone and Joints	32 60.4%	20 38.5%	3 5.8%	20 38.5%	23 44.2%	6 11.5%
Stress and stress related problems	42 85.7%	7 14.3%	3 6.1%	20 40.8%	20 40.8%	6 12.2%
ENT	52 65.0%	28 35.0%	5 6.2%	34 42.5%	31 38.8%	10 12.5%
Throat and vocal problem	42 70.0%	17 28.8%	5 8.5%	24 40.7%	24 40.7%	6 10.2%
Eye related problem	32 72.7%	12 27.3%	2 4.5%	9 20.5%	21 47.7%	12 27.3%
Total	130	49	10	64	75	29

Analysis

From the above data we can tell that male teachers are at higher risk of having health problems. This may be due to other confounding variables and lower sample size of females. From the table, all of the diseases have high prevalence in male like eye related problems, throat and vocal problems, respiratory, cardiovascular, gastrointestinal, Neurological, Psychiatric, Dermatological, bone and joints etc. From the table, it becomes clear that the teachers in

the age group between 30-49 years have high rate of disease prevalence. The major reason behind this may be due to high exposure to the risk factor, higher sample size at this group and the other associated variables and compounding variables. The 50 plus age group have shown low prevalence of occupational disease, which may be due to lower samples and may be due to other factor like lower sample size and confounders.

Table 5: Association between Gender, Years in Profession and Health problem

Gender	Health Problem	Exposure to teaching Environment (In terms of years)		Total	χ^2 Value	P Value
		10 years and less	More than 10 years	130 67.4%		
Male	Present	34 55.7%	96 72.7%	63 32.6%	5.477	0.016 (**)
	Absent	27 44.3%	36 27.3%	193 100.0%		
	Total	61 100.0%	132 100.0%	48 73.8%		
Female	Present	15 60.0%	33 82.5%	17 26.2%	4.033	0.044 (**)
	Absent	10 40.0%	7 17.5%	65 100.0%		
	Total	25	40	178		

	Present	49 57.0%	129 75.0%	178 69.0%	8.706	0.003 (**)
Combined	Absent	37 43.0%	43 25.0%	80 31.0%		
(Male and Female)	Total	86 33.3%	172 66.7%	258 100.0%		

(** P value is less than 0.05)

A) In Male Teachers:

We wish to test the hypothesis by using chi-square as a test tool to find out whether there is an association between health problem and the years of exposure in categories among male teachers i.e. greater than 10 years and less than 10 years. At this case the null hypothesis will be -There is no association between the years of teaching exposure and the occupational disease, whereas the alternative hypothesis is- There is association between the years of exposure and the occupational disease. The p- value at this case is found to be 0.016 which is less than 0.05. Which means we reject the Null hypothesis and accept the alternative hypothesis. Hence it is verified that the occupational disease prevalence is higher in those male teachers having more than 10 years of teaching exposure.

B) In Female Teachers:

We wish to test the hypothesis by using chi-square as a test tool to find out whether there is an association between health problem and the years of exposure in categories among female teachers i.e. greater than 10 years and less than 10 years. At this case the null hypothesis will be, there is no association between the years of teaching exposure and the occupational disease, whereas the alternative hypothesis is, there is association between the years of exposure and the occupational disease. The p- value at this case is found to be 0.044 which is less than 0.05. Which means we reject the Null hypothesis and accept the alternative hypothesis. Hence it is verified that the occupational disease prevalence is higher in those female teachers having more than 10 years of teaching exposure.

Discussion:

In the present study it was found that of the total 258 respondents 74.8% of them were male and 25.2% were female, whereas a study done conducted by Chong et al., 2010 revealed that number of males were less 27.9% then compared to females 72.1%. While a study in Nepal by Kayastha, D.P. and Kayastha, (2012) revealed that number of males were 80.6% than compared to females 19.4%. The prevalence of health complaints was found to be very high: 93.75 percent of the respondents reported they were or had been suffering from at least one type of health complaint. It is an comparatively serious public health issue whereas a survey conducted in Kathmandu had revealed that 70 percent of the school teachers suffered from one or more diseases (Bishwokarma, 2012). A study conducted by Pahadi TN in Banke district have shown that 10 most frequently reported health complaints among the teachers were tiredness (93.75%), eyestrain (78.75%), anxiety (75.0%), voice disorder (75.0%), sleep problems (71.25%), shoulder pain (71.25%), neck pain (66.25%), headache (62.5%), sadness/depression (53.75%), and lower-back pain (53.75%).

Age of the respondents also indicates that there are high number of teachers who are more than 30 years of age, approximately 90% teachers are more than 30 years old whereas only 10 % teachers are less than 30 years of age. A similar figure was seen in a study conducted by Chong, L.E. and Chan, H.A. (2010) and Erick et al., (2013) where about 80% respondents were above the age of 30. According to WHO, health is a state of complete physical, mental and social wellbeing and not merely

the absence of disease. Health determines the overall capability of human being. This study is also focused in the general health status of the teachers. The respondents were asked if they had suffered from any kinds of health related problems, maximum number of respondents that is 69% told that they were suffering from health problem while the remaining 31% told that they had not suffered from any kinds of health related problems. This indicates that there are high numbers of teachers who are suffering from at least one kind of health related problems. These health problems has resulted in their performance issues as they could not give their full effort while teaching the students.

The study revealed that the number of female teachers i.e. 73.8% suffering from any one kind of health related problem was slightly higher than the male teachers i.e. 67.4%, a similar result was also seen in a study conducted by Hingnekar, H.R. and Ahmed, N.D. (2014) where health related problems was seen in 60% and 64% of the male and female respondents respectively.

Of those 69% respondents who had suffered from health problems, 19.4% of the respondents suffered from ENT, likewise 14.6% suffered from throat and vocal problem, 13.3% of the respondents which is similar to the study carried out by Smith et al.,(1997), suffered from respiratory problem, 12.9% suffered from Bone and joint problem , 11.9% suffered stress and stress related problem, 10.7% suffered from Eye related problem and other common health issues were Gastrointestinal, cardiovascular, Neurological Psychiatric and Dermatology problems. In a study conducted by Chong et al., (2010) out of 24 Item severities scale for musculoskeletal problem, the mean was 7.98, whereas out of 21 Item severity scale for Gastrointestinal, the mean was 4.97 and out of 15 Item severity scale for Eye problem, the mean was 4.15.

While accessing the correlation between age, gender and health we observed that there was no significant difference between gender, age and health problem

(Refer table 4). Nevertheless, with the increment in age, the teachers started to suffer from at least one health related problem. For the age group of above 50 years, female teachers had higher number of health issues as compare to their male counterparts. In respect to the type of health problem suffered, more male teachers suffered from at least one type of health related problems as compared to the female teachers. With the increment in age the prevalence of health problem also increased. Larger numbers of health problems were seen in participants between the age of 30 to 49 years. Health problems like, Dermatology, Gastrointestinal, Stress and related factors, were higher among male teacher, while other problems like Bone and joints problem, respiratory and Ear Nose Throat (ENT) was higher among female teachers.

Association between Gender, Health Status and Years in Profession having significant difference was observed in the study (P value < 0.05). In both genders, health problems was present in those who had 10 years or more working experience. The proportion of health problem was higher among males then females.

Conclusion:

Majority of the teachers i.e. 69% were suffering from at least one health related problem. Significant association related to teaching for more than 10 years and health problem was observed among Males (72.7%, $P < 0.05$) and females (82.5%, $P < 0.05$). It is necessary to improve the work standards and quality of life for the teachers. Awareness program, workshops and trainings program regarding Occupational Health should be provided to the teachers. Strong coordination between District Education office and District Public Health office should be established in order to improve the health status of the teachers teaching in secondary level government schools. Regular health check up in the workplace is equally important to screen the disease and treat it in time. Teachers teaching in the secondary level Government school were only selected for this study. Although this isn't the robust study design,

this study can give some insight on the occupational disease prevalence in teachers teaching in the secondary level Government school within the Kathmandu valley. Healthy universities and healthy colleges are the basic requirements to promote the health of the teachers.. Promotion of healthy work environment in schools, colleges and universities across the country should be given top priority for the protection and promotion of teachers' health. Appropriate health promotion programmes targeted at teachers should be developed. The results of this study demands teacher friendly universities and colleges, which is the most neglected part of public health in Nepal. The instructors working in the TVET sectors may also have such problems of occupational diseases, so we may have to conduct a similar research in the TVET sector too.

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