



Prevalence of musculoskeletal disorders in school teachers

Jyoti Kataria^{1*}, Shilpa Jain²

¹⁻² Assistant Professor, School of Physiotherapy, Delhi Pharmaceutical Sciences and Research University DPSRU, Govt of NCT of Delhi, Delhi, India

Abstract

Musculoskeletal disorders has become one of primary source of work-related health hazards. Since in present scenario due to tremendous pressure at workplace and responsibilities to fulfill financial requirements office workers tend to work under serious pressure and stress. Teachers amongst one the seriously affected group significantly affected their health and work under extensive pressure to perform at school or academic institutes. Hence primary aim is to find out prevalence of musculoskeletal disorder among school teachers such that in future selective rehabilitation programs may be generated keeping in mind most affected area. Methodology: 150 school teachers were approached out of which 120 completed the survey and hence took part in the research work. The Nordic Questionnaire was used to determine the prevalence of musculoskeletal disorders in School Teachers.

Results: Prevalence of cervical pain and shoulder pain was primarily reported being most affected zone followed by back pain which significantly affected their overall well-being.

Conclusion: As per results obtained it is concluded that health of teachers significantly affected keeping neck pain, shoulder pain and back pain as major part affected, which may be considered as serious issue and preventive measures must be taken to avoid such high prevalence.

Keywords: school teachers, musculoskeletal disorders, nordic questionnaire

Introduction

Health status of office workers significantly affected due to continuous work load and pressure at workplace. The National Occupational Research Agenda (NORA) in USA mentioned that musculoskeletal disorders related to work are very common and comprises severe consequences at the cost of work related illness in United States ^[1]. Epidemiological studies have demonstrated that factors such as gender, age, length of employment and awkward posture are associated with higher MSD prevalence rates among teachers ^[2]. Both developed and developing countries are suffering from several occupational hazards which consist of work-related musculoskeletal disorders prominently. School teachers reported to have severe health related disorders and represent musculoskeletal pain on various occasions ^[3-5]. Causes of musculoskeletal disorder are observed to be multifactorial in origin and capable to affect the work environment as well as personal life since it may lead to development of poor quality of life ^[6]. School teachers used to work for hours without getting break to fulfill the demand they have been asked for hence unknowingly putting pressure on muscles which gradually lead to development of fatigue and muscle soreness. Since age also plays important role in development of musculoskeletal disorder due to development of degenerative changes hence considered to be a major risk factor for development of musculoskeletal disorder. School task involves majorly of putting administrative task and since school teachers are asked to perform such task they tend to work in front of screen or in head down position which executes too much pressure on soft tissue supporting the

cervical spine and head and gradually lead to development of musculoskeletal disorders ^[7, 8, 9]. Nursery school teachers used to perform lot of work since they are involved with kids of certain age which required lot of effort hence they develop mechanical back pain and neck pain mostly as they work in forward flexed position. Also teachers work not only involves taking lectures but also demand a lot of other work such as preparation of lesson plan, administrative work, involvement in extracurricular activities which put them under serious stress and may contribute in development of musculoskeletal disorders. The aim of this study was therefore, to critically analyze the prevalence of MSD and possible associated risk factors in the teaching profession. The study focused on primary school teachers.

Materials and methods

Cross sectional survey was done on Primary School Teacher. 150 subjects were approached for the study. A total number of 120 subjects (including male and female) who fulfilled the inclusion criteria were included in the study. 120 School teachers were taken from a government Schools, and from a reputed private school of Delhi. Only primary school teachers of age group between 30-50yrs were included in the study, both male and females were included in the study.. Subjects were selected using convenience sampling and study information was the selection of the subjects, consent forms were given to the subjects. A signed consent was collected from the subjects. Questionnaires were then distributed to the participants, with verbal instructions to fill the questionnaire. The questionnaire, once filled, was collected personally from

the participants. Standardized Nordic questionnaire was used for data collection. The data was analysed with the help of SPSS (version 20.00) statistical software and Microsoft office 2016 was used to calculate the prevalence percentage of musculoskeletal disorders in primary School teachers was obtained.

Results

Results were calculated from the total population in percentage & graphical representation. These representations are evaluated under time & issues faced by the primary school teachers on daily basis. Time period taken are as follows:

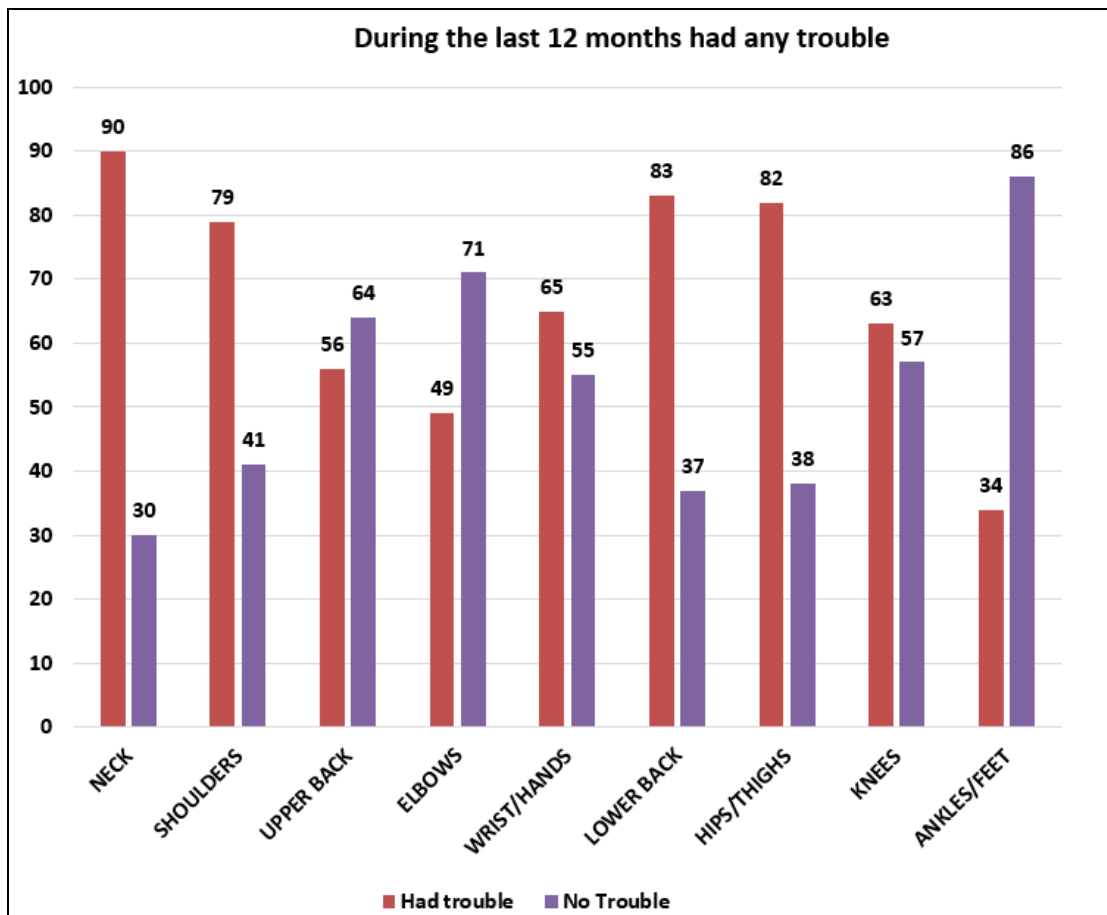
- Difficulty faced in last 12 months by school teachers

- Difficulty faced in last 12 months which affected performing daily activities
- Difficulty faced in last seven days by school teachers

Results shows school teachers were significantly affected with musculoskeletal disorders. According to body region, most affected region was shoulder and Upper back which was found most affected in last 12 months. Further neck pain prevented school teachers from carrying out normal activities during the last 12 months. Region which causes trouble in last 7 days was shoulder and neck. so over all after all results its very evident that prevalence of shoulder, neck upper back pain is very high in school teachers.

Table 1: Difficulty faced in last 12 months by school teachers

Body Region	Difficulty faced in last 12 months by school teachers				
	Total No. of Patients	Yes		No	
		No. of Patients	Percentage Of Patients	No. Of Patients	Percentage Of Patients
Neck	120	90	75%	30	25%
Shoulders	120	79	65.83%	41	34.16%
Upper Back	120	56	46.66%	64	53.33%
Elbows	120	49	40.83%	71	59.16%
Wrist/Hands	120	65	54.16%	55	45.83%
Lower Back	120	83	69.16%	37	30.83%
Hips/Thighs	120	82	68.33%	38	31.66%
Knees	120	63	52.5%	57	47.5%
Ankles/Feet	120	34	28.33%	86	71.66%



Graph 1: School teachers has any discomfort during last 12 months

Table 2: Difficulty faced in last 12 months which affected performing daily activities

Body Region	Difficulty faced in last 12 months which affected performing daily activities				
	Total No. Of Patients	Yes		No	
		No. of Patients	Percentage Of Patients	No. Of Patients	Percentage Of Patients
Neck	120	82	68.33%	38	31.66%
Shoulders	120	70	58.33%	50	41.66%
Upper Back	120	46	38.33%	74	61.66%
Elbows	120	43	35.83%	77	64.16%
Wrist/Hands	120	61	50.83%	59	49.16%
Lower Back	120	78	65%	42	35%
Hips/Thighs	120	79	65.83%	41	34.16%
Knees	120	57	47.5%	63	52.5%
Ankles/Feet	120	32	26.66%	88	73.33%

Table 3: During the last 7 days have you had trouble

Body Region	Difficulty faced in last 7 days while performing daily activities:				
	Total No. of Patients	Yes		No	
		No. of Patients	Percentage Of Patients	No. of Patients	Percentage of Patients
Neck	120	54	45%	66	55%
Shoulders	120	64	53.33%	56	46.66%
Upper Back	120	39	32.5%	81	67.5%
Elbows	120	34	28.33%	86	71.66%
Wrist/Hands	120	56	46.66%	64	53.33%
Lower Back	120	63	52.5%	57	47.5%
Hips/Thighs	120	65	54.16%	55	45.83%
Knees	120	43	35.83%	77	64.16%
Ankles/Feet	120	27	22.5%	93	77.5%

Discussion

In present study the aim was to critically analyze the prevalence of MSD and possible associated risk factors in the teaching profession. The study focused on primary school teachers. Cross sectional survey was done on Primary School Teacher.

150 subjects were approached for the study.120 school teachers were participated in the research work, both females and males were included in the research work. Results shows that shoulder, neck and upper back were most commonly affected region among school teachers. Since they tend to work in static head flexed posture hence may be a significant reason for development of cervical spine/ neck pain.

Teachers were found to have a higher risk in developing MSP in this cross-sectional survey.

Meanwhile, this study revealed a high prevalence of Musculoskeletal pain (MSP) and the level of MSP observed in present study was severe enough to interfere with school teachers daily activities and for may sometimes results in urgent need of medical help where teachers were found to consume pain killers which results in work absence. Nilufer Cetisli Korkmaz et al found that the pain was often associated by musculoskeletal system and connective tissue. However severe pain when continuously experience results in development of depression and other various kinds of psychological disorders. Pain cervical spine region is observed to be very significant among all age groups and increases with age since musculature of cervical spine and shoulder joint are closely associated with each other hence any pathology of either of the segment can affect the other part. Musculoskeletal pain becomes very common among school teachers [12]. Even in latest research done in china reported that

school teachers exhibits higher prevalence of neck pain 68.9% [13].

Vaghela P has reported majority of female school teachers 71.95% developed musculoskeletal disorders gradually as compared to males suggesting females are working under such stressful conditions which put them in development of musculoskeletal symptoms [14]. Rottermund, J et al observed backpain as one of the serious musculoskeletal disorder among school teachers followed by neck pain and due to such muscular problems teachers gradually develop limitation of physical activity as well [15].

Conclusion

School teachers reported to have high prevalence of Shoulder pain, neck pain and Upper back pain. However other joints assessed were also found to be affected but as compared to them neck pain and shoulder pain was quite serious and needs special attention

References

1. Yue et al. Neck/shoulder pain and low back pain among school teachers in China, prevalence and risk factors BMC Public Health. 2012; 12:789
2. Erick PN, Smith DR: A systematic review of musculoskeletal disorders among school teachers. BMC Musculoskelet Disord. 2011; 12:260
3. Cardoso JP, De Queiroz Batista Ribeiro I, Maria de Araújo T, Carvalho FM. José Farias Borges dos Reis E: Prevalence of musculoskeletal pain among teachers. Revista Brasileira de Epidemiologia. 2009; 12(4):1-10.
4. Maguire M, O’Connell T. Ill-health retirement of

- schoolteachers in the Republic of Ireland. *Occup Med (Lond)*. 2007; 57(3):191-193.
5. Tsuboi H, Takeuchi K, Watanabe M, Hori R, Kobayashi F. Psychosocial factors related to low back pain among school personnel in Nagoya, Japan. *Ind Health*. 2002; 40(3):266-271.
 6. Erick, Smith. A systematic review of musculoskeletal disorders among school teachers *BMC Musculoskeletal Disorders*. 2011; 12:260
 7. Allsop L, Ackland T. The prevalence of playing-related musculoskeletal disorders in relation to piano players' playing techniques and practicing strategies. *Music Performance Research*. 2010; 3(1):61-78.
 8. Atlas AP, Bondoc RG, Garrovillas RA, Lo RD, Recinto J, Yu KJ. Prevalence of Low Back Pain among Public High School Teachers in the City of Manila. *Philippine Journal of Allied Health Sciences*. 2007; 2(1):34-40.
 9. Chiu TT, Lam PK: The prevalence of and risk factors for neck pain and upper limb pain among secondary school teachers in Hong Kong. *J. Occup Rehabil*. 2007; 17(1):19-32.
 10. Validity of Nordic-style questionnaires in the surveillance of upper-limb work-related musculoskeletal disorders. Alexis Descatha,
 11. Nilufer Cetisli Korkmaz et al, Musculoskeletal pain, associated risk factors and coping strategies in school teachers *Scientific Research and Essays*. 2011; 6(3):649-657. DOI: 10.5897/SRE10.1064 ISSN 1992-2248 ©2011 Academic Journals
 12. Magdy A. Darwish et al, Musculoskeletal Pain Disorders among Secondary School Saudi Female Teachers, 2013, 7. Article ID 878570.
 13. Chong EYL, Chan AHS. "Subjective health complaints of teachers from primary and secondary schools in HongKong," *International Journal of Occupational Safety and Ergonomics*, 16(1):23-39.
 14. Vaghela NP, Parekh SK. Prevalence of the musculoskeletal disorder among school teachers. *Natl J Physiol Pharm Pharmacol*. 2018; 8(2):197-201.
 15. Rottermund J, Knapik A, Saulicz E, Myśliwiec A, Saulicz M, Rygiel KA, Linek P. Back and neck pain among school teachers in Poland and its correlations with physical activity. *Medycyna Pracy*. 2015; 66(6):771-778. <https://doi.org/10.13075/mp.5893.00121>