

Influence of Work Factors on Occurrence of Musculoskeletal Discomfort in Desk Top Publishing Operators in Guntur City

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Abstract:

Introduction: The long periods of working at a computer as most of Desk top publishing (D.T.P.) operators do, can cause musculo skeletal problems.

Aim & Objectives: 1. To assess the prevalence of musculoskeletal discomfort in D.T.P operators. 2. To study the work factors influencing the occurrence of musculoskeletal discomfort in D.T.P operators.

Materials and Methods: study design: cross sectional study. A sample of 200 D.T.P operators were randomly selected from Guntur district of A.P.

Result: The prevalence of musculoskeletal discomfort in study group was 78%. It was found that there was a gradual increase in musculoskeletal discomfort as the number of hours spent for working on computers daily increased.

Conclusion: A significant proportion of D.T.P operators were found to be having musculoskeletal discomfort and this denotes that the occupational health of the people working in the computer field needs to be emphasized as a field of concern in occupational health.

Keywords: D.T.P, M.S.D

I. Introduction

The ever increasing use of computers in various fields has led to raise in musculoskeletal problems related to their operation. Intense computer work puts stress & strain on muscles as well as joints because of continuous & repetitive nature of movements. Individual factors, prolonged incorrect postures, poor work station design & social environment can lead to development of symptoms of musculo skeletal discomfort (M.S.D)¹. If these symptoms are ignored & if no preventable measures are taken, cumulative trauma disorders such as myalgia, myofascial & nerve entrapment syndromes, tendinitis, epicondylitis & synovitis can develop². This study is a small endeavour to bring out the prevalence of M.S.D. among D.T.P operators and influence of work factors in M.S.D. occurrence.

Aim And Objectives

- 1) To assess the prevalence of M.S.D in D.T.P. operators.
- 2) To study the work factors influencing the occurrence of M.S.D in D.T.P operators.

II. Material And Methods

Study Design : Cross sectional study; **TYPE OF STUDY** : Qualitative study

Study Setting : Guntur city; **STUDY PERIOD**: JULY 2014 TO DECEMBER 2014

Study Subjects : D.T.P. operators

Sample Size : $4PQ/L2 = \frac{4 \times 25 \times 75}{6.13 \times 6.13} = 199.59 \sim 200$

(Prevalence obtained by study conducted by ARMSTRONG et al,³)

III. Methodology

Arbitrarily, Guntur city is divided into 4 parts, from the centre. The sample size of 200 is equally distributed among 4 quadrants, i.e. 50 respondents per quadrant. From each quadrant, 50 D.T.P. operators were randomly selected & interviewed at their work place. Pretested questionnaire was filled after obtaining their verbal consent. Other relevant information was gathered through personal inspection of work station. MSD was considered when one or more of the following symptoms were reported by respondents.

- 1) Neck or shoulder stiffness / pain
- 2) Tingling / numbness in hands, thumbs or fingers during work
- 3) Hand or wrist pain

- 4) Backache
- 5) leg cramps, leg stiffness, numbness in ankles & feet
- 6) Reduction in strength of hands & difficulty in grasping objects.

Inclusion Criteria:

- 1) The subjects should be working in D.T.P. job for the past 6 months.
- 2) They should be working on computers for at least 3 hours/day or 15 hours/week.

Exclusion Criteria:

- 1) Experience with D.T.P. work for less than 6 months.
- 2) Subjects of age less than 20 years.

Statistical Analysis:

- 1) Percentages, Proportions and Chi square test.

Ethical Consideration:

- 2) Verbal consent obtained.
- 3) Confidentiality maintained.

Results: Table 1: Shows magnitude of occurrence of musculoskeletal discomfort for gender wise. Out of 200 study subjects examined 156(78%) were having musculoskeletal discomfort. Females experienced significantly more (86.8%) musculoskeletal discomfort when compared to males (74.11%). It was statistically significant ($P < 0.05$).

Table 1: Magnitude Of Occurrence Of MSD By Gender Wise

SEX	MSD PRESENT		MSD ABSENT		TOTAL	
	n	%	n	%	n	%
MALES	103	(74.11)	36	(25.89)	139	(100)
		(66.02%)		(81.81%)		(69.5%)
FEMALES	53	(86.8)	8	(13.11)	61	(100)
		(33.97%)		(18.18%)		(30.5%)
TOTAL	156	(78%)	44	(22%)	200	(100%)

Table 2: Shows study variables and its association with musculoskeletal discomfort:

Prevalence of musculoskeletal discomfort seen significantly more (83.60%) among respondents who are working >48 hours / week than those who are working <48 hours (69.23). It was statistically significant ($P < 0.02$).

Prevalence of musculoskeletal discomfort is seen significantly more (86.17%) among respondents who are working more than 6 years than those who are working less than 6 years (70.75). It was statistically significant. ($P < 0.01$).

DURATION OF WORK		MSD PRESENT		MSD ABSENT		TOTAL	
		n	%	n	%	n	%
<48 HOURS/WEEK		54	(69.23)	24	(30.76)	78	(100)
			(34.61%)		(54.54%)		(39%)
>48 HOURS/WEEK		102	(83.60)	20	(16.39)	122	(100)
			(65.38%)		(45.45%)		(61%)
<6 YEARS (*AVERAGE DURATION : 6 YEARS)		75	(70.75)	31	(29.24)	106	(100)
			(48.07%)		(70.45%)		(53%)
>6 YEARS (*AVERAGE DURATION : 6 YEARS)		81	(86.17)	13	(13.82)	94	(100)
			(51.92%)		(29.54%)		(47%)
BREAKS inbetween working hours	YES	108	(73.46)	39	(26.53)	147	(100)
			(69.23%)		(88.63%)		(73.5%)
	NO	48	(90.56)	5	(9.43)	53	(100)
			(30.76%)		(11.36%)		(26.5%)

Table 2: Shows study variables and its association with musculoskeletal discomfort:

The prevalence of M.S.D is seen significantly more (90.56%) who are not taking BREAKS in between working hours when compared to those who are taking breaks (73.46%). It was statistically significant ($P < 0.02$)

IV. Discussion

The Present study is undertaken in Guntur city, Guntur District of A.P. on 200 D.T.P. OPERATORS aged 20 years and above, to assess the prevalence of M.S.D and its association with work factors. In the present study the prevalence of M.S.D is found to be 78%. Musculoskeletal discomfort was greater among female study subjects. The males outnumbered females in the ratio 7:3. My study observations correlated with that of DEMURE et al⁴ and KARLQUIST et al⁵. The Prevalence of musculoskeletal discomfort seen significantly more among subjects who are working >48 hours / week. My study observations correlated with that of DEMURE B et al⁴, KARLQUIST LK et al⁵, MING et al⁶. However ORTOZ et al did not observe such association in their study⁷. In the present study the prevalence of musculoskeletal discomfort seen significantly more among subjects who are working for more than 6 years. The prevalence musculoskeletal discomfort seen significantly more among subjects who are not taking breaks in between working hours. This study observations correlated with that of DEMURE B et al⁵ and KORHONEN T et al⁸.

V. Conclusions

IN this study as many as 78% of the study subjects had one or more M.S.D symptoms.

Higher prevalence of M.S.D. seen in female study subjects, and in those respondents who are working more number of hours on computers, who have job experience of more than 6 years and among those who are not taking breaks in between working hours.

VI. Recommendation

- 1) Working hours should be punctuated by regular breaks, with ½ hour break after every 3 hours work.
- 2) They should take an off in the middle of the week
- 3) The D.T.P operators should be educated regarding posture and usage of proper chair design. .

Limitations

- 1) This study was undertaken only in one study setting.
- 2) Investigative studies should be done at different places to make it universal.
- 3) Longitudinal studies must be carried out in different local settings in India.

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