

Posture Discomfort due to Laptops among College going Students

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ABSTRACT: Laptop computer are used vividly by all sections of societies. It has become almost an integral part in specially student life. This study identified and assesses the postures adopted of different purposes of laptop use; one sixty students (80 boys and 80 girls) were interviewed and observed using their laptop in various postures. The results indicate that significant difference between boys and girls were observed in posture adopted i.e. study neck neutral, slouching forward, slouching backward and laying on stomach. Mostly boys and girls spend more time in academic and work related purpose and very few laptop users use laptop accessories. To reduce the postural discomfort among students, proper orientation regarding the postures to be used has to be given.

KEYWORDS: Laptop, Postures, College going Students.

I. INTRODUCTION

The use of laptop computers in educational environment is increasingly prevalent. The size and portability of laptops make these powerful, yet practical devices easy to handle and bring many benefits to students. Shears (1995) and McDonald (1995) reported that laptops provide flexibility in the learning process and that students appear to enjoy using them.

Laptop computer users frequently assume inconvenient postures when using laptops. These postures include lying on the floor, using desks that are not designed for computers, and placing the laptop on one's lap. The fact that a laptop keyboard and monitor are attached and do not adjust independently of one another may force a user to choose between comfortable hand/wrist or head/neck postures. This puts the laptop user in awkward or unhealthy postures that may lead to discomfort or injury (Rafael et.al 2007).

Straker *et.al* (1997) suggest that a laptop user would assume a posture for use that would compromise their typing posture either by increased neck flexion in order to see a lower screen and/or by increased shoulder and elbow flexion, to reach a higher keyboard. This is further supported by Harbison *et.al* (1995), who found that laptop users required an increased forward head inclination to adequately use the computer due to its lack of adjustability.

The forward head inclination posture adopted by all laptop user subjects in Harbison and Forrester's (1995) study, was more than 30 degrees greater than the recommended neck posture as outlined in Australian Standard 3590.2 (1990). The mean head inclination angle ranged from 44.0 to 49.6 degrees depending on the location of use. In contrast to this ergonomists have stated that the head and neck should not be bent forward by more than 15 degrees otherwise fatigue will be experienced (Grandjean 1987).

II. OBJECTIVE OF THE STUDY

The aim of the study was to investigate the use of laptop computers by University students to identify and assess the postures adopted for laptop use, recreational, academic or work related purposes, the length of time laptop was used, and use of laptop accessories.

III. METHODOLOGY

Subjects

One sixty students (80 boys and 80 girls) of the Universities in Lucknow were identified as respondents in the study who in the age group of 20 to 35 years.

Design

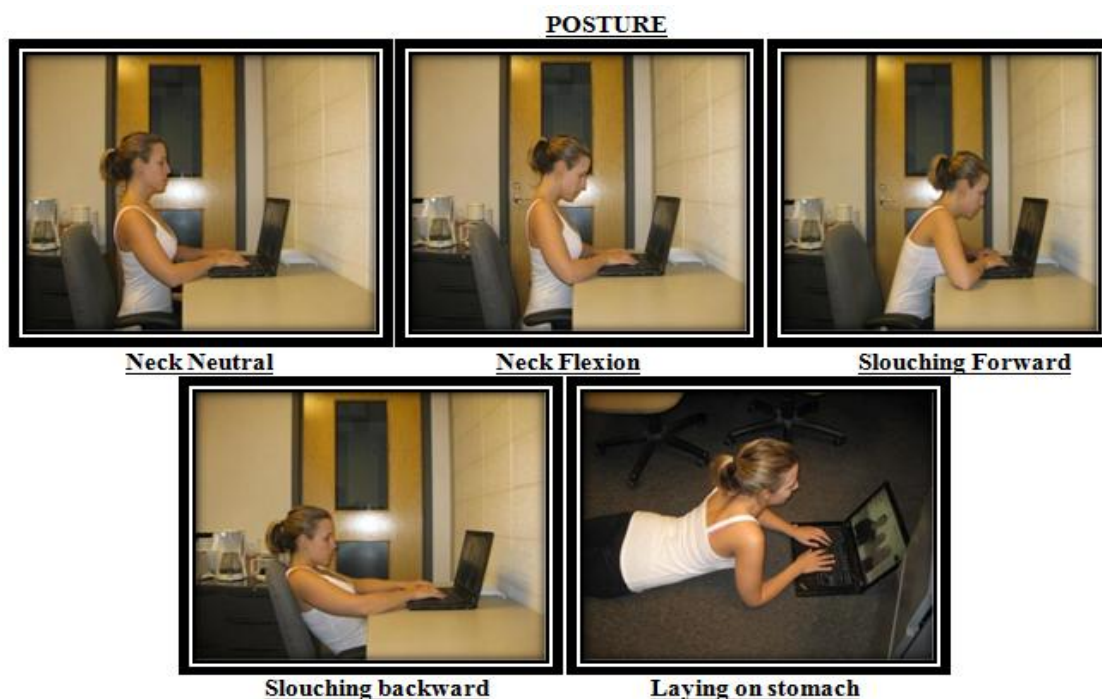
A cross sectional design was used where each subject performed a set task using different posture adopted for laptop users.

Sampling

Multistage Random sampling was followed in the present study.

Tools and Techniques used

The postural assessment was done using student laptop use and neck pain risk questionnaire (SLUNPRO) developed by Gray, D.(2011) were used to study the postural discomfort while using laptop was recorded.



Source: - Assessing the risks associated with neck pain in student laptop users

IV. RESULT AND DISCUSSION

Table.1 Distribution of the respondents of the Postural discomfort while using the Laptop based on the type of work:-

	Recreational						Academic						Work related					
	Boys		Girls				Boys		Girls				Boys		Girls			
Posture	M	SD	M	SD	t	sig	M	SD	M	SD	t	sig	M	SD	M	SD	t	sig
Neck Neutral	0.47	0.49	0.33	0.50	2.61	.180	1.35	0.93	1.08	0.98	6.01	0.15	0.91	1.37	1.39	1.50	13.86	.000*
Neck Flexion	0.21	0.40	0.27	0.44	3.47	.064	0.93	0.99	1.16	0.98	1.43	.232	0.94	1.39	1.18	1.46	3.44	.065
Slouching Forward	0.22	0.41	0.31	0.47	8.19	.005*	0.83	0.99	0.86	0.99	.100	.752	1.16	1.47	1.31	1.50	1.70	.193
Slouching Backward	0.54	0.50	0.41	0.50	.06	.415	0.67	0.95	0.69	0.93	.108	.743	0.45	1.08	0.81	1.29	12.10	.001*
Laying on stomach	0.82	0.39	0.32	0.74	6.19	0.14	0.32	0.74	0.42	0.80	1.99	.160	0.79	1.32	1.26	1.48	14.67	.000
Time /Week	1.75	0.58	1.79	.650	.654	.420	6.59	0.61	6.58	.522	2.39	.124	10.79	0.655	10.78	0.61	.239	.625
External mouse	0.28	0.45	0.34	0.48	1.77	.185	0.42	0.50	0.46	0.51	1.21	.273	0.42	0.50	0.54	0.51	1.79	.182
External monitor	0.21	0.41	0.23	0.46	.54	.460	0.27	0.45	0.27	0.46	.003	.954	0.24	0.44	0.33	0.49	5.49	.020

Form the above table it is evident that students while performing recreational activities usually adopted a posture of lying on stomach among both boys and girls (0.82) and girls (0.7) whereas very few boys and girls adopt neck flexion and slouching forward. Almost 50 percent of boys ($\mu=0.54$) and girls ($\mu=0.4$) adopt slouching backward posture.

Students while performing academic activities usually adopt neck neutral posture ($\mu=1.35$ & 1.0) followed by neck flexion ($\mu= 0.93$ & 1.16) and slouching forward ($\mu=0.83$ & 0.86). The academic activities are done by the students almost in an exert posture. Almost same is the case with the work related activity where in maximum followed slouching forward ($\mu=1.31$ (girls) & $\mu= 1.16$ (boys) followed by neck flexion and neck neutral postures.

Almost equal numbers of girls ($\mu=10.78$) and boys ($\mu= 10.79$) use laptop for work related activities and academic purposes ($\mu=6.59$ & 6.58).

It may also be noted that external mouse and external monitor were used by few respondents for any of the activities.

V. CONCLUSION

From the above result it was concluded that mostly students adopted a posture of lying on stomach for recreational activities. Mostly boys and girls adopted a posture of neck neutral and neck flexion for academic activities and mostly boys and girls adopted a posture slouching forward for work related activities.

Mostly boys and girls spend more time in work related and academic purposes. It is also noted that very few laptops users use laptop accessories for different types of work. To reduce the postural discomfort among students, proper orientation regarding the postures to be used has to be given.

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