Research Paper

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Musculoskeletal Problems Faced by Women Bank Employees of Ludhiana City

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The assessment of occupational health problems is one of the common field of study of ergonomics. Occupational health problems among the VDT users are one of the important factors now a days. Further, working on computer for longer hours is one of the most important factors responsible for musculoskeletal problems, because the computer user is constrained due to sitting in the same position for extended period of time with repetitive movements of eyes, head, arm and fingers only. The problems can range from minor ache that last less than a few hours to persistent tendon problems that can last for years. Retaining a fixed posture for long periods of time causes muscle fatigue and leads to pain and injuries (Grandjean 1988). Symptoms related to musculoskeletal problems such as persistent pain, feeling of tingling, numbness, swelling and stiffness if not treated early can result in chronic pain or permanent disability. Therefore, musculoskeletal problems faced by respondents were assessed by observing:

a) Symptoms indicating musculoskeletal problems
b) Regional pain distribution felt by respondents

a) Symptoms indicating musculoskeletal problems

Various symptoms indicating musculoskeletal problems with relation to different body parts were analyzed and are presented in Table 1

Neck: It was found that a large majority of respondents felt pain and stiffness in neck followed by disturbed sleep (39.16%) as the major symptoms. Very less number of respondents were having symptoms like popping or grinding on movement of neck (13.33%) and muscle spasm (9.16%). Life and Pheasant (1984) also reported that the main area of concern among computer users is neck pain or discomfort. Often times, VDT operators bend the neck in various positions to see the screen or read the material they are typing. Therefore, looking up at the screen, bending the neck forward and twisting the neck to the side have been associated with the development of neck and shoulder disorders.

Shoulder: It was observed that half of the respondents felt pain or stiffness while moving shoulder and swelling over shoulder (30.83%) as the main symptoms for shoulder. Only 4.16 per cent respondents felt burning sensation in their shoulder region.

Lower back: For lower back, major symptoms felt by respondents were aching or stiffness along spine till the tail bone (64.16%), chronic ache after sitting or standing for extended period (26.66%), weakness/pain in legs (21.66%) and numbness or tingling in toe or feet fingers (20.83%). Very less number of respondents (12.50) felt inability to stand straight without having support. This is the symptom usually appears in severe cases or if earlier symptoms of pain or stiffness are not taken seriously.

Upper back: Table 1further shows that for upper back region, pain was the main symptom felt by 44.16 per cent of respondents followed by frequent headache (35.00%), disturbed sleep (25.83%). Whereas, morning back stiffness as symptom was felt by very less number of respondents (9.16 per cent).

Upper arm: For upper arm also, pain while moving arm/shoulder was the main symptom felt by 33.33 per cent of respondents followed by muscle weakness (16.66%). Whereas, joint stiffness (7.50%) and swelling (2.50%) were least felt symptoms as far as upper arm was concerned.

Elbow, lower arm and wrist: It can be seen from Table 1 that body parts like elbow, lower arm and wrist were not much affected due to working on computer as less number of respondents (0.83% to 15.00%) felt various symptoms like pain/strain, swelling and stiffness in these parts.

Hands: As far as hands are concerned, pain was felt by 50.83 per cent of respondents followed by itching and tickling feeling in forearm/hands (10.83%). A very less number of respondents (3.33%) felt swelling in hands which may be the rare symptom appear in severe cases.

Fingers: The results shown in Table 1 indicate that pain in the fingers was also felt by 38.33 per cent of respondents while working on the computers followed by popping sensation or excessive sweating of fingers (13.33%). This may be due to the reason that hands and fingers are continuously used while working on keyboards and moreover respondents had less opportunity to take breaks from using computer either through a change of activity or a rest. Therefore, some relaxing exercises of hands and fingers are required to relax the muscles.

Legs: Table 1further reveals that pain and swelling were also felt by 58.33 per cent of respondents followed by numbness (27.50%) and tingling in feet (9.16%) as the respondents had to sit on the chair for extended period of time and they continuously work on the computers and moreover absence of foot rest could also be the reason for pain and swelling in the legs as legs did not get proper support.

Table 4.6: Musculoskeletal problems faced by respondents at their workstation N=120

Body parts	Symptoms indicating musculoskeletal problems	Percentage	Z
Neck	Pain and stiffness in the neck	89.16	23.00**
	Pain radiates from neck to right/ left hand	26.66	2.00*
	Muscle spasms of neck or headache	9.16	-3.66^{NS}
	Popping or grinding on movement of neck	13.33	-2.22^{NS}
	Disturbed sleep due to pain	39.16	6.38**
Shoulder	Pain or stiffness while moving shoulder	50.00	10**
	Swelling over affected area	30.83	3.61**
	Burning sensation	4.16	-5.27 ^{NS}

Body parts	Symptoms indicating musculoskeletal problems	Percentage*	Z
Lower back	Aching or stiffness anywhere along spine, from the base of the neck to the tail bone	64.16	14.72**
	Chronic ache in the lower back, especially after sitting or standing for extended period	26.66	2.22*
	Inability to stand straight without having support	12.5	-2.50^{NS}
	Numbness or tingling in toe or feet fingers	20.83	0.27^{NS}
	Weakness/pain in legs	21.66	0.55^{NS}
Upper back	Frequent Headache	35.00	5.00**
	Morning back stiffness	9.16	-3.66^{NS}
	Neck pain/shoulder pain	44.16	8.05**
	Disturbed sleep	25.83	1.94^{NS}
Upper arm	Pain in moving the arm or shoulder	33.33	4.44*
	Joint stiffness	7.50	-4.16^{NS}
	Muscle weakness	16.66	-1.11^{NS}
	Swelling	2.50	-5.83^{NS}
Elbow	Wrist/ elbow strain which will go off after a short period of rest	8.33	-3.8 ^{NS}
	Morning stiffness of the elbow with persistent aching	1.66	-6.11^{NS}
	Symptoms aggravated by activity	4.16	-5.27 ^{NS}
Lower arms	Swelling, redness in the forearm.	0.83	-6.38^{NS}
	Stiffness and restriction of movement.	19.16	-0.27^{NS}
	Pain and stiffness when moving the hand, wrist or stretching the hand and fingers.	18.33	-0.55^{NS}
Wrist	Pain over affected area	18.33	-0.55^{NS}
	Pain reproduced when grasping an object	1.66	-6.11^{NS}
	Weakness over the affected area	10.83	-3.05^{NS}
	Stiffness/numbness in hand, thumb and index finger	15.00	-1.66^{NS}
Hands	Pain/weakness in muscles of the hand	50.83	10.27**
	Swelling in hands	3.33	-5.55^{NS}
	Itching, tickling feeling in forearm/hand	10.83	-3.05^{NS}
Fingers	Finger stiffness, particularly in the morning	38.33	6.11**
	Excessive sweating, coldness of fingers	13.33	-2.22 ^{NS}
	Popping sensation while moving the fingers	13.33	-2.22^{NS}
Legs	Pain and swelling in legs	58.33	12.77**
	Numbness in legs	27.50	2.50*
	Tingling in feet or toe fingers	9.16	-3.61^{NS}

•Multiple responses

NS-Non significant

*significant at 5% level of significance **significant at 1% level of significance

These Findings are also in line with those of Snehlatha (2007), Dadwal *et al* (2011) and Das and Ghosh (2010) who also observed that a large majority of computer users felt persistent pain or stiffness in their neck, lower back, legs, wrist, palm, shoulder and fingers. Tingling was another symptom felt by computer users due to improper workstation design.

2 Regional pain distribution felt by respondents

The results of 1 shows that pain was the main symptom felt by respondents which can be first indication of musculoskeletal problems. Therefore, pain as a symptom felt by respondents was also assessed and presented in Fig 1. It shows that the major parts showed the symptom of pain/strain were in neck (89.16%), lower back (64.16%), legs (58.33%), hands (50.83%), shoulder (50.00%) and lower back (44.16%). Whereas, less affected parts included upper arm (33.33%), lower arm (19.16%) and elbow (8.33%).

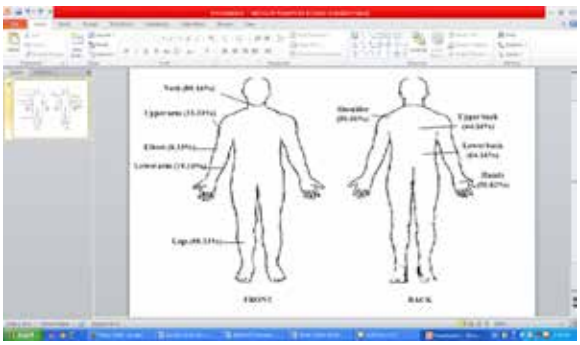

Fig 1: Regional pain distribution felt by respondents (N=120)

Therefore, it can be concluded that among the upper extremities of the body, neck and shoulder was the prime one, in which the respondents suffered maximum discomfort feeling. So, it has been suggested that as pain is the first symptom and should not be ignored and treated on the priority basis to avoid further aggravation of situation.

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