

A Study on Work Related Neck Pain among Bank Employees in Kolkata, India

Sourav Chakraborty¹, Debasish Sinha², Sita Chatterjee³, Mausumi Basu⁴, Raghunath Misra⁵

ABSTRACT

Introduction: Varying prevalence of Work Related Neck Pain has been reported in different occupational groups. Employees of Bank industries are subjected to various physical demands, prolonged sitting and standing postures which may lead to neck pain.

Material and Methods: An observational cross sectional study was conducted among 270 Bank employees of selected Nationalised banks from June-July 2018 using a pre designed pre tested structured questionnaire. Statistical analysis plan: For Descriptive statistics: mean± SD, for categorical variables: frequency(n) & proportion(%), to test association: chi square test.

Results: About 47.41% suffered from WRNP. Significant association were found between WRNP and higher age, education below graduation, duration of employment, bad posture, environment, mental stress, job pressure) and ergonomics of work station, height of monitor screen, distance from mouse to edge of table etc.

Conclusion: Sensitization of all bank employees about WRNP and its effects, training programme for good working posture and improvement of working environment may be addressed.

Keywords: Work Related Neck Pain, Bank Employees, Ergonomics of Work Station.

INTRODUCTION

Work-related neck pain (WRNP) is defined as neck pain that is caused or aggravated (or both) by work or the working environment. It is one of the most common patient complaints in the general population and especially among workers who use computer extensively at their workplace.^{1,2,3,4,5}

Varying prevalence of WRNP has been reported in different occupational groups.

It is a known fact that the etiology of work related neck pain is multidimensional and determined by individual, physical and psychosocial factors.⁶ Apart from the working ergonomics, a wide range of individual risk factors such as age, gender, smoking, alcohol consumption, physical activity and psychosocial risk factors are associated with the development and persistence of WRNP.

Most studies of WRNP are conducted in developed and industrialized countries, and there is very little information on the working population of middle and low-income countries like India.⁷

In Ahmedabad city, among office employees working with Video Display Units, prevalence of self reported non specific neck pain was found to be 47%.⁷ Another study at Delhi among desk job workers reported that one-year prevalence of

neck pain and WRNP were 43.3% and 28.3% respectively.⁸ Jobs that lead to chronic neck pain are those that require repetitive work, typically at computer keyboards. These jobs are primarily in administrative offices, post offices, and banks. In these positions, there is overuse and misuse of the neck and shoulder muscles.⁹

Employees of Bank industries are subjected to various physical demands, prolonged sitting and standing postures which may lead to neck pain. However there is paucity of literature on studies about prevalence of WRNP in Indian Banks.¹⁰ There is dearth of study regarding WRNP among Bank employees in India including Kolkata.

With this background, this study was done to assess the prevalence of Work Related Neck Pain (WRNP) among Bank employees in Kolkata and to determine the association between individual, & work related factors and WRNP among those Bank employees.

MATERIAL AND METHODS

Present observational epidemiological study, cross sectional in design was done on Bank employees selected Nationalised Banks in Kolkata for 2 months in 2018. Multistage randomised sampling method was followed for sampling.

Study tool

1. A predesigned, structured, pretested questionnaire was used for the study.
2. Ergonomic requirements for office work with visual display terminals (VDTs)¹¹

Study technique

1. Administration of questionnaire to bank employees
2. Work place assessment

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Inclusion criteria:

- 1) Desk job worker of Nationalised bank, spending at least 50% of their working hour at desk with a computer
- 2) Employed in the current position for at least one year
- 3) Available during data collection period
- 4) Who gave informed written consent

Exclusion criteria

1. Spinal deformities or diseases (eg, cervical spondylosis, arthritis)
2. Employees suffering from neck injury
3. Underwent neck/spinal surgery
4. Not willing to participate in the study

Sample size

Sample size was calculated using the appropriate formula. Considering the prevalence of WRNP as 28.3%⁸ among desk job workers; a sample size of 253 was calculated with Confidence Level of 95%; power of 80%; and allowable error of 20%. After adding 5% non response rate, final sample size was 266.

Stage 1: From 19 Nationalised Bank of India, 10% (2) banks were selected by simple random sampling method. These two banks were

- a. central bank of india (CBI)
- b. State bank of india (SBI).

Stage 2: From those 2 Banks; “three (3)” and “fifteen (15)” branches in Kolkata city were selected respectively, by simple random sampling technique (proportionately with number of branches, as the total no of branches of CBI and SBI in Kolkata are 66 and 301 respectively). Thus the total no of branch were eighteen (3+15=18).

Stage 3: Considering average 15 desk job workers in a Branch; 18X15=270 participants were interviewed. We enlisted 294 bank employees, out of which 270 fulfilled the inclusion criteria.

Study variables:**1. Exposure variables:****a. Socio-demographic factors:**

Age, Gender, Marital status, Residence, Formal education

b. Work related factors:

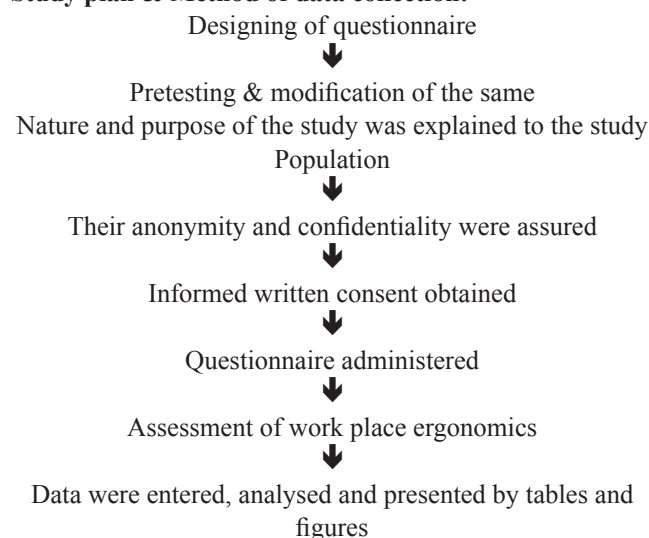
- 1) Individual factors: Smoking, Alcohol use, Domestic activity, Leisure time
- 2) Work related physical factors: Duration of employment, years at current job, working hours / week, working days/week, physical tiredness at the end of the day, posture, movements, computer use (hours/day), breaks during work, climatological conditions (size of the room, noise, lighting, air, temperature)
- 3) Work related psychosocial factors: Mental tiredness, job pressure, job satisfaction, autonomy at work, social support
- 4) Work place ergonomics assessment: using checklist as per ‘Ergonomic requirements for office work with

visual display Terminals (VDTs)¹¹- observations were categorized as 'good' and 'poor' (in terms of work chair, work desk, height of computer screen, screen distance, distance of keyboard, mouse, document holder).

2. **Outcome variables:** Number of days suffering from Work related neck pain during preceding 12 months.

Ethical issue

- (i) Ethical clearance from Institutional Ethics Committee (IEC) of IPGME&R was obtained.
- (ii) Permission from Bank Authority.
- (ii) Written informed consent from every study population.

Study plan & Method of data collection:**Quality control**

- Optimize response rates
- Pretesting of the questionnaire
- Minimal Response Questionnaire for the non-responders

Working definitions

Work-related Neck Pain (WRNP): Neck pain aggravated at the end of the working day in absence of any other apparent causes of neck pain on history and clinical examination for 2 weeks or more during the preceding 12 months.

Smoking Habit

- a) Smoker – An adult who has smoked 100 cigarettes in his or her lifetime and who currently smokes cigarettes (CDC)
- b) Former smoker: An adult who has smoked at least 100 cigarettes in his or her lifetime but who had quit smoking at the time of interview.
- c) Never smoker: An adult who has never smoked, or who has smoked less than 100 cigarettes in his or her lifetime.

Health status: Self rated status of health taken in 5 point scale, the health status has been divided into

- a) Very good/ good/average – ‘GOOD’.
- b) Poor/very poor- ‘POOR’.

Duration of time in domestic activities (cleaning, child caring, cooking, gardening etc):

- a) <1 hour

b) ≥ 1 hour

Duration of time spend on hobbies (handicrafts, music instrument playing, computer games):

a) < 1 hour

b) ≥ 1 hour

Work related

Among computer users, working time in Computer during the preceding month;

a) $< 50\%$ of time

b) $\geq 50\%$ of time

Breaks during work- means hour of continuous work before taking breaks when working at desk; categorized as 5-10 minutes break after continuous work of:

a) \leq one hour – ‘fully enough’;

b) one hour – ‘not enough’

Influence on work load- means the extent the subjects were able to influence their own work load in terms of amount and tempo of their tasks; five level variable ranged from (a) Very little; (b) some; (c) equivocal; (d) much; (e) very much; categorized as:

a) No influence: (a) & (b)

b) Can influenc: (c), (d), & (e)

Physical work environment: lighting conditions, temperature, quality of the air, size of the working room, and acoustic conditions in the work environment; data collected in 5 point scale as:

very poor (1), poor(2), average(3), good(4), very good(5) for each factor of work environment; average of scoring is categorized as:

a) 3 as ‘good’

b) ≤ 3 as ‘poor’.

Mental stress: means the situation when a person feels tense, restless, nervous, anxious and are unable to sleep at night because his mind is troubled all the time in these days: scoring done individually as:

none(5)/little(4)/some(3)/fairly much(2)/much(1).

Then average was taken:

a) Absent: < 3

b) Present: ≥ 3

Mental strain: they percept tension in their work place, Data taken in 5 point scale:

a) Absent - Never/Rather seldom

b) Present - Sometimes/Rather often/Continued

Job pressure felt as working place categorised as:

a) very much as- ‘much’

b) not so much/not at all-‘less’

Job satisfaction: in current place of work; taken in 5 point scale.

a) not satisfied – Neutral/dissatisfied/ very Dissatisfied

b) satisfied – Very satisfied/ satisfied

For computer user, Data were taken on:

Viewing distance means distance between the eyes and the middle point of the screen (cm);

categorized as:

a) 50 to 70 cm as ‘GOOD’

b) < 50 & > 70 as ‘POOR’.

Height of screen means distance between the upper edge of the screen and the horizontal level of the eyes; categorized as:

a) ≥ 10 cm as ‘GOOD’

b) < 10 as ‘POOR’.

Distance between key board & edge of the desk:

a) ≥ 15 cm as ‘GOOD’

b) < 15 cm as ‘POOR’

Distance between mouse & edge of the table:

a) ≥ 15 cm as ‘GOOD’

b) < 15 cm as ‘POOR’

Deviation of mouse from mid-line of body means deviance between the middle point of the mouse and the middle line of the body; categorized as:

a) ± 30 cm as ‘POOR’

b) ≤ 30 cm.as ‘GOOD’.

Work place ergonomics assessment: Using checklist as per Ergonomic requirements for office work with visual display terminals¹¹-(in terms of work chair, work desk, height of computer screen, screen distance, distance of keyboard, mouse, document holder) observations will be categorized as:

a) very poor/poor/average as-‘POOR’

b) good/very good as-‘GOOD’

STATISTICAL ANALYSIS

Data were double checked and entered in Microsoft Office Excel 2010 (Microsoft Corp., Redmond, WA, USA). Software for statistical analysis:SPSS version 20.0 (Chicago, IL, US).

Descriptive statistics: For continuous variable: mean \pm SD, for categorical variables:frequency(n) & proportion(%)

Analytical statistics (test association): chi square test. Results were expressed in terms of odd’s ratios (ORs); with 95% Confidence Intervals (CI). P value of < 0.05 considered as significant.

RESULTS

An observational study, cross sectional in design was conducted among 270 bank employees in Kolkata to know the prevalence of work related neck pain and it’s determinants.

The results were as follows-

Table 1 demonstrated distribution of the study population as per their sociodemographic variables. About 42% were > 50 years of age, 96% were males, majority (80%) were hindu, married ($> 80\%$)& resident of urban area($> 80\%$), about 61% were graduate followed by post graduate & above(22%),regarding designation majority were officers, and their average income was Rs.21000/.

Figure 1 showed distribution of the study population according to prevalence of work related neck pain which revealed that almost half (47.41%) suffered from WRNP.

Individual factors, work related physical factors, work related psychosocial factors, and work place ergonomics were revealed in Table-2. Regarding work related individual factors, 21.48% were current smokers, 26.67% consumed

Variables	Male N (%)	Female N (%)	Total N (%)
Age group (in years)			
21-30	12 (75.00)	04(25.00)	16 (05.93)
31-40	56 (62.22)	34(37.78)	90 (33.33)
41-50	42 (84.00)	08(16.00)	50 (18.52)
>50	110(96.49)	04(03.51)	114 (42.22)
Religion			
Hindu	176(81.48)	40(18.52)	216(80.00)
Muslim	40(83.33)	08(16.67)	48(17.78)
Others (Christian, Parsi)	04(66.67)	02(33.33)	06(02.22)
Residence			
Urban	186(82.30)	40(17.70)	226(83.70)
Rural	34(77.27)	10(22.73)	44(16.30)
Marital status			
Married	194(84.35)	36(15.65)	230(85.19)
Single (Unmarried, Widow, widower, divorcee)	26(65.00)	14(35.00)	40 (14.81)
Formal Education			
Secondary	26(100.00)	00(00.00)	26(09.63)
Higher Secondary	18 (90.00)	02 (10.00)	20 (07.41)
Graduate	134(81.71)	30(18.29)	164 (60.74)
Post Graduate & above	42 (70.00)	18 (30.00)	60 (22.22)
Designation			
Sub staff	40(60.61)	26 (39.39)	66 (24.44)
Single Window Operator(SWO)	38 (86.36)	06 (13.64)	44 (16.30)
Officer	142 (88.75)	18 (11.25)	160 (59.26)
Total	220(81.48)	50 (18.52)	270(100.00)

Table-1: Distribution of the study population as per sociodemographic variables(N=270)

alcohol, self-rated health status stated as good by 45.93%, 60.74% used <1 hour /day for domestic activity, 66.67% spend<1 hour/day for hobbies. So far work related physical factors are concerned, half (50.37%) are employed in Bank for >15 years, 25% are employed in the current position >15 years, 58% work >8 hours/day, 91% spend >50% of time in computer work,56% work in same posture for>2 hours,45% took break after continued work of>1 hour, more than 70% felt physical tiredness at the end of the day,75% had no control over work load, and 47% rated their physical environment as good. Work related psychological factors revealed that though 46% had mental stress, 72.59% were satisfied with their job and 56% had autonomy at work.

Regarding workplace ergonomics assessment, only 41% had good viewing distance, 75% had good height of monitor screen,62% had good distance between keyboard and edge of the desk, 52% had good distance between mouse and edge of the table, and self rated good ergonomics of work station told by 70% of the study population.

Table 3 depicted Distribution of the study population according to the duration of work related neck pain which demonstrated that 61% had WRNP since last 2weeks to 1 month,26.57% had since last 1 month to 3 months and rest 12.50% had for >3 months.

Association of WRNP with respect to selected factors were described in Table 4. Significant association were found between WRNP and individual factors (higher age, education below graduation), work related physical factors

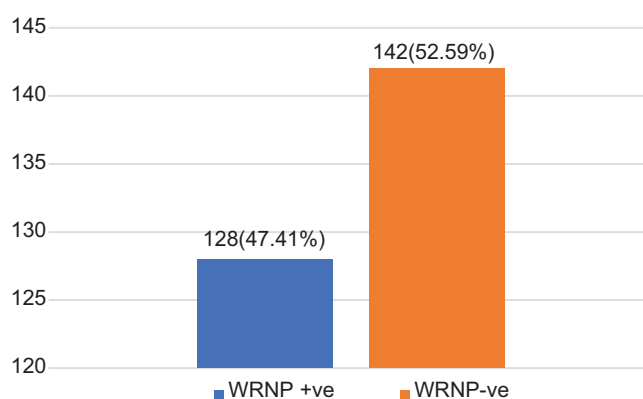


Figure-1: Distribution of the study population according to prevalence of work related neck painn (N=270)

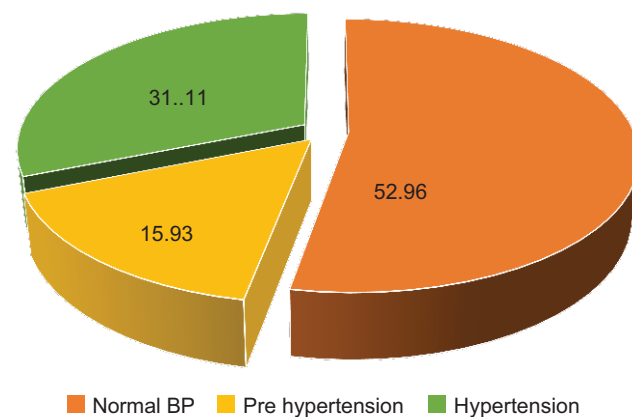


Figure-2: Pie diagram showing the distribution of the study population according to Blood Pressure (N=270)

Category	Frequency (n)	Percentage (%)
Individual factors		
Smoking habit		
Current smoker	58	21.48
Past smoker	42	15.56
Non- smoker	170	62.96
Alcohol consumption		
Yes	72	26.67
No	198	73.73
Health status (self rated)		
Very good	36	13.13
Good	124	45.93
Average	92	34.07
Poor	18	06.67
Time used for Domestic activity		
<one hour	164	60.74
>=one hour	106	39.26
Time spend for hobbies		
<one hour	180	66.67
>=one hour	90	33.33
Work related physical factors		
Duration of employment (years)		
<5	16	05.92
5-10	70	25.93
11-15	48	17.78
>15	136	50.37
Duration of current job(years)		
<1	22	08.15
1-5	48	17.78
6-10	102	37.78
11-15	30	11.11
>15	68	25.18
Working hours per day		
6-8	114	42.22
>8	156	57.78
% of Time spent in computer work		
<50	24	08.89
>=50	246	91.11
Work with same posture for >=2 hrs		
Yes	152	56.30
No	118	43.70
Short period of movements during Computer work		
Yes	156	57.78
No	114	42.22
Physical tiredness at the end of the day		
Yes	190	70.37
No	80	29.63
Breaks after continued work of		
<1hour	98	36.30
1 hour	52	19.26
>1 hour	120	44.44
Control over work load		
No influence	202	74.81
Can influence	68	25.19

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Category	Frequency (n)	Percentage (%)
Physical work environment (self rated)		
Very poor	04	01.48
Poor	20	07.41
Average	86	31.85
Good	128	47.41
Very good	32	11.85
Work related psychosocial factors		
Mental stress		
Absent	146	54.07
Present	124	45.93
Mental strain		
Absent	70	25.92
Present	200	74.08
Job pressure		
Much	116	42.96
Less	154	57.04
Job satisfaction		
Satisfied	196	72.59
Not satisfied	74	27.41
Autonomy at work		
Present	150	55.56
Absent	120	44.44
Social support from co-employees		
Yes	218	80.74
No	52	19.26
Work place ergonomics assessment		
Viewing distance		
Good (50-70 cm)	110	40.74
Poor(<50/>70cm)	160	59.26
Height of monitor screen		
Good(>10cm)	202	74.81
Poor(<=10cm)	68	25.19
Distance between key board & edge of the desk		
Good(>=15cm)	168	62.22
Poor(<15cm)	102	37.78
Distance between mouse & edge of the table		
Good(>=15cm)	140	51.85
Poor(<15cm)	130	48.15
Distance from mouse to Midpoint of body		
Good (-30 to +30)	116	42.96
Good (-30 to +30)	154	57.04
Ergonomics of work station (self rated)		
Good	190	70.37
Poor	80	29.63

Table-2: Distribution of the study population according to individual factors, work related physical factors, work related psychosocial factors, and work place ergonomics(N=270)

Duration	Number(n)	Percentage(%)
2 weeks-1 month	78	60.93
1 month-3 months	34	26.57
More than 3 months	16	12.50
Total	128	100.00

Table-3: Distribution of the study population according to the duration of work related neck pain(N=128)

Factors	Category	WRNP Present	WRNP Absent	Total	odds ratio, (95%CI)	chi square, P value
Gender	Male	102(46.36)	118(53.64)	220(81.48)	0.79(0.43-1.47)	0.52,0.47
	Female	26(52.00)	24(48.00)	50(18.52)		
Age(in years)	>40	60(56.60)	46(43.40)	106 (39.26)	1.84(1.12-3.01)	5.92,0.01*
	<=40	68(41.66)	96(58.54)	164 (60.74)		
Education	Below graduation	30(65.22)	16(34.78)	46(17.04)	2.41(1.24-4.67)	7.05,0.00*
	Graduation & above	98(43.75)	126(56.25)	224 (82.96)		
Working time spent in computer work	>=10	56(65.12)	30(34.88)	86(31.85)	2.90(1.70-4.94)	15.87,<0.00*
	<10	72(39.13)	112(60.87)	184 (68.15)		
Neck in forward bending posture	<50%	08(33.33)	6(66.67)	24 (08.89)	1.90(0.78-4.61)	2.09,0.1482
	>=50%	120(48.78)	126(51.22)	246(91.11)		
Work with same posture for>=2 hours	Yes	82(57.7)	60(42.3)	142(52.59)	2.43(1.49-3.98)	12.84,0.00*
	No	46(35.9)	82(64.1)	128(47.41)		
Short periods of movements during computer work	Yes	84(55.26)	68(44.74)	152(56.30)	2.07(1.27-3.39)	8.61,0.00*
	No	44(37.28)	74(62.72)	118(43.70)		
Break after continued work of	Yes	64(41.03)	92(58.97)	156(57.78)	0.54(0.33-0.88)	6.04,0.01*
	No	64(56.14)	50(43.86)	114(42.22)		
Control over work load	<=1 hour	66(44.00)	84(56.00)	150(55.56)	1.36(0.84-2.20)	1.57,0.21
	>1 hour	62(51.67)	58(48.33)	120(44.44)		
Physical Environment	No influence	98(48.51)	104(51.49)	202(74.81)	1.19(0.68-2.07)	0.39,0.53
	Influence	30(44.12)	38(55.88)	68 (25.19)		
Mental stress	Poor	66(60.00)	44(40.00)	110(40.74)	2.37(1.44-3.89)	11.81,0.00*
	Good	62(38.75)	98(61.25)	160(59.26)		
Mental strain	Absent	52(35.62)	94(64.38)	146 (54.07)	2.86(1.74-4.69)	17.73,<0.00*
	Present	76(61.29)	48(38.71)	124(45.93)		
Job pressure	Absent	40(57.14)	30(42.86)	70(25.92)	0.70(0.41-1.19)	1.68,0.194
	Present	108(54.00)	92(46.00)	200(74.08)		
Work place ergonomic assessment	Much	72(62.07)	44(37.93)	116(42.96)	2.86(1.73-4.71)	17.53,<0.00*
	Less	56(36.36)	98(63.64)	154 (57.04)		
Viewing distance	Good	50(45.4)	60(54.6)	110(40.74)	1.14(0.70-1.85)	0.28,0.59
	Poor	78(48.7)	82(51.3)	160(59.26)		
Distance between key board & edge of the desk	Good	80(39.6)	122(60.4)	202(74.81)	3.66(2.02-6.62)	19.59,<0.00*
	Poor	48(70.5)	20(29.5)	68(25.19)		
Distance between mouse & edge of the table	Good	62(36.9)	106(63.1)	168(62.22)	3.13(1.87-5.23)	19.67,<0.00*
	Poor	66(64.7)	36(35.3)	102(37.78)		
Distance from mouse to midpoint of body	Good	44(31.4)	96(68.6)	140(51.85)	3.98(2.40-6.61)	29.78,<0.00*
	Poor	84(64.6)	46(35.4)	130(48.15)		
Ergonomics of work station	Good	62(53.45)	54(46.55)	116 (42.96)	0.65(0.40-1.06)	2.98,0.08
	Poor	66(42.86)	88(57.14)	154(57.04)		
statistically significant(P value<0.05)	Good	68(35.79)	122(64.21)	190(70.37)	5.38(2.99-9.67)	34.71,<0.00
	Poor	60(75.00)	20(25.00)	80(29.63)		

Table-4: Association of WRNP with respect to selected factors (N=270)

(duration of employment, bad posture, environment), psychosocial factors (mental stress, job pressure) and work place ergonomics (ergonomics of work station, height of monitor screen, distance from mouse to edge of table etc.) Moreover we have studied blood pressure level of the study population which showed in Figure 2(31% had hypertension).

DISCUSSION

In the present study the prevalence of work related neck pain was 47%, which was almost similar to study by Jensen² (46%), Cagnie et al⁶ (45.5%), and Shah et al⁷(47%). However it was higher than study by Brandt et al¹, & Darivemula et al⁸ (28.3%), and lower than study by Sillanpaa et al⁴ (63%) & Kaur et al¹⁰ (21.2%).

Different WRNP prevalence in different studies as compared to the present study might be attributed to variable duration of work on computers by various group of employees. Moreover comparison of prevalence rates are difficult because different definitions of musculo-skeletal discomfort and prevalence times were used. The body parts used also different (hand/ wrist, forearm/wrist, hand/fingers, fingers, etc.).

A study by Brandt et al¹ among Danish computer workers revealed that the prevalence of moderate-to-severe pain in the neck and right shoulder was 4.1% and 3.4%, respectively, and the 1-year incidence for no or minor baseline symptoms was 1.5% and 1.9%, respectively.

Another study by Jensen² among computer users of 11 Danish companies and Institutions showed that, at baseline the prevalence of neck symptoms for more than 7 days in the last year was 44.7%, and at follow-up the prevalence of neck symptoms was 46.4%.

Study by Siilanpaa et al⁴ at two large occupational health centres located in the city of Tampere among full-time visual display unit (VDU) users described that for the 12 month prevalences of musculo-skeletal symptoms in the neck, shoulders, elbows, lower arms and wrists, and fingers were 63,24, 18, 35 and 16%, respectively.

Cagnie et al⁶ conducted a study among office workers in ten companies at Belgium, which demonstrated that the 12 month prevalences of neck pain in office workers was 45.5%.

Study by Shah et al⁷ at Ahmedabad revealed the prevalence of neck pain among computer operators was 47%.

Darivemula et al⁸ conducted a cross sectional study among Group C workers at All India Institute of Medical Sciences (AIIMS), New Delhi in the year 2012 which stated that one-year prevalence of neck pain and WRNP was 43.3% and 28.3% respectively.

Kaur et al¹⁰ done a study on LBP among bank employees of Punjab which depicted that the point, 12 month and lifetime prevalence of LBP was 37.6%, 34% and 21.2% respectively.

This study reported almost similar prevalence of WRNP in both gender whereas Tampere⁴, Belgium⁶, and Delhi study⁸ showed higher prevalence among females as compared to males and Punjab study¹⁰ showed greater prevalence in

males compared to females.

More prevalence of WRNP was seen in age group of >40 years in our study, which was in line with Belgium study⁶ and Punjab study.¹⁰

Significant associations were found between neck pain and education in the present study but not in Belgium study.⁶

Poor perception of breaks during working hours along with work place related factors like poor posture,height of monitor screen, distance between mouse & edge of the table, distance between key board & edge of the desk were identified as independent determinants of WRNP in this study as well as Denmark¹, Mexico³, Belgium⁶, Ahmedabad⁷, Delhi⁸, Mumbai⁹, and Punjab study.¹⁰

Computer use for more than 4-6 hours was one of the important predictor of WRNP in the present study, similar to Belgium⁶, Delhi⁸, Mumbai⁹, and Punjab.¹⁰

However, in Tampere⁴, there was no association between the duration of daily work with a computer and pain or the duration of daily mouse use and pain.

Workers' rating of the ergonomics of their workstations as poor was associated with an increased prevalence of pain in Tampere⁴ and this study.

A positive association was found between work related psychosocial factors with neck pain in Mexico³, Belgium⁶ and the present study.

Like other studies, our study also had some limitations-Possibility of recall bias could not be ruled out, Data from only two banks were collected, Time constraint, and Cross sectional study design.

Implication

Work related neck disorders are one of the common problem among office workers, especially who use computer intensively like bank employees. The global trend is to use computer for long hours daily, due to increased computer-based tasks at work and during leisure activities. Work related neck pain has been less studied than pain in other regions. Several factors like individual, work related factors are responsible for this. India is a middle-income developing country. The importance of this kind of studies becomes more obvious when it is considered that some reports indicate that the greatest increase in the prevalence of musculo-skeletal disorders in the next decade will be in middle-/low-income countries. This study will help to spread awareness about WRNP and its long term deleterious outcome, to detect the factors associated with it, so that specific working environmental modification, and early medical measures can be uptaken as a preventive step.

CONCLUSION

The present study revealed that the prevalence of work related neck pain was 47% among bank employees in Kolkata.

Significant association were found between WRNP and individual factors (higher age, education below graduation), work related physical factors(duration of employment, bad posture, environment), psychosocial factors(mental stress, job pressure) and work place ergonomics(ergonomics of work station, height of monitor screen, distance from mouse

to edge of table etc.)

Sensitization of all bank employees about WRNP and its effects, training programme for good working posture and improvement of working environment may be addressed. This will improve the health status and efficiency of the employees and increase the productivity.

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