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Co-Relation of Chronic Neck Pain with Function and Quality of Life in Professional Tailors

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ABSTRACT :

Introduction - Work-Related Musculoskeletal Disorders (WRMSDs) are increasingly common, caused by long hours, repetitive tasks, and poor posture, leading to chronic neck pain. These disorders affect physical function and mental health, significantly impacting overall quality of life.

Purpose-The present study was conducted to establish co-relation of chronic neck pain with function and quality of life in professional tailors .

Methods - 336 male and female tailors between 28 to 48years were included in the study. Demographic data along with work experience and hours were obtained. Pain , disability and quality of life was evaluated using NPRS, NDI and WHO QOL Bref.

Results- The study included 336 participants (185 females, 151 males) with an average age of 38.1 years. The data revealed that neck pain intensity (NPRS) was positively correlated with neck disability (NDI) and negatively affected physical, psychological, social, and environmental health domains.

Conclusion- This study shows that neck pain, measured by the NPRS, is closely linked to increased disability and negatively affects physical, mental, social, and environmental well-being. These findings highlight the wide impact of neck pain on quality of life.

Keywords: Neck Pain, Tailors, Disability, Function, Quality Of Life.

Introduction :

Over the last few decades, Work Related Musculoskeletal Disorders (WRMSDs) have become incresasingly prevalent worldwide.[1] According to the World Health Organization, occupational musculoskeletal problems are a major global health concern.[2] Musculoskeletal disorders were found to be the primary cause of disability adjusted life years (DALYs) in the 2016 Global Burden of Disease report.[3] Musculoskeletal disorders related to the workplace arise when there is an imbalance between an individual's physical capabilities and the demands of their job.[2] Work-related musculoskeletal disorders (WRMSD) are a collection of excruciating conditions brought on by excessive, repetitive usage of the body's structures, which damages the bones, muscles, joints, ligaments, tendons, nerves, bursa, and blood vessels. [4] WRMSDs can also be referred to as repetitive strain injuries, repetitive motion injuries, cumulative trauma disorders, soft tissue disorders, and over injuries.. [3,11] One of India's biggest industries is the textile sector. With over 35 million jobs offered nationwide, it is the nation's second-largest industry. Many people are at risk of developing musculoskeletal disorders related to their jobs because of circumstances as long work hours and low pay. [5] A worker's continuous posture of sitting, with arms flexed abducted and head and trunk flexed forward, is contributing to the high incidence of musculoskeletal disorders at work. [6] The duration, frequency, and intensity of neck pain are constantly increasing as a result of an inactive and exhausting lifestyle, which may result in stiffness and tension in certain neck areas. [1] Posture attained during the course of work has been an important cause for these WRMSD. [9] Every professionals experience these WRMSD but recent evidence on its prevalence in employees associated with professional tailoring has gained a high number. [1] Many of the tailors are at risk of developing WRMSD due to repetitive task, forceful exertion, and inappropriate posture. Due to their long working time on low level table in seated position causes their upper spine to have exaggerated curve due to leaning posture over the machine for prolonged time, this alignment leads to neck pain over a course of years. [9] Along with pain and activity limitation , work related musculoskeletal disorders have also been found to be associated with high psychological demand , stress, depression, anxiety and job dissatisfaction ,all these factors are proven to effect quality of life significantly.[10] Literature search in professional tailors show paucity in correlating chronic neck pain with function and quality of life. So the current study aims to establish co-relation of chronic neck pain with function and quality of life in professional tailors.

Method :

336 tailors from Belagavi were included in the study using convenience sampling. The study was approved by institutional ethical committee. Tailors were approached and included according to the criteria. Study included both male and female tailors of age group of 28 to 49 years, who are practicing the profession since 5years and more, working for 5hrs or more per day. participants were excluded if they had pre-existing disability and diagnosed with cervical spondylosis. Participants were included in the study with a written inform consent and were evaluated for demographic data including years of experience and duration of working hours.

Outcome Measures :

The study used following outcome measures to assess Pain , Function And Quality Of Life

Numeric Pain Rating Scale (NPRS)
Participants were evaluated for pain using Numeric Pain Rating Scale , were participant has to point the pain on a scale of 0 to 10, were 0 is considered as no pain and 10 being the worst pain.

Neck Disability Index (NDI)
Neck function was assessed using Neck Disability Index , which is the valid questionnaire used to asses functioning of neck in managing activity of daily living. It consist of 10 items which include pain , personal care, lifting, reading, headaches, concentration, work, driving , sleeping and recreation. Each item are scored from 0(no difficulty) to 5 (severe difficulty).

WHO Quality Of Life Bref Questionnaire (WHOQOL-BREF)
It's a self-administered survey with 26 questions about how people perceive about their health and wellbeing. It covers four domains physical health, psychological health , social relationship and environment. Physical health domain encompasses aspects such as an individuals energy level and fatigue in relation to daily activities, as well as experiences of pain and discomfort. It also included components like sleep , rest and ease of movement and the persons ability to navigate their environment and carry out everyday tasks. Psychological health domain covers aspects such as self confidence , satisfication with physical and body image along with both positive and negative emotions. It also encompasses aspects of thinking , learning , concentration , spirituality and personal beliefs. In social health domain it addresses the quality and satisfication of personal relationship and social support. The environmental health domain emphasizes personal safety , the quality and comfort of ones home and the sufficiency of financial resources . it also includes access to healthcare and social services , the availability of recreational and leisure activities and the characteristics of physical environment , such as pollution, noise and climate. Additionally , it considers the accessibility and convenience of transportation

Statistical analysis :

The data was subjected to statistical analysis using SPSS 29.0.2 analysis included descriptive statistics such as mean, standard deviation and co-relation of chronic neck pain with function and quality of life in professional tailors was done using pearsons correlation and signed rank test.

Results :

336 subjects were enrolled in the study. The data analysis produced conclusions both by gender and for 336 the entire group collectively for descriptive statistic(Table 1) and co-relation analysis was conducted for the group as the whole(Table 2).
The study included 185 female (55.1%), 151 male (44.9%) average age was 38.1 years (6.2 SD). 148.4cm(7.9 SD) is the average height . The average weight was 62.7 kg (9.5 SD), the average BMI was 28.6 kg (4.5 SD). The length of neck pain ranged from three months to seventeen years, with a mean of 2.8 (three.0 SD).The subjects working hours varied from 5 to 14 hours, with an average of 8 hours (1.2 SD).The subject's experience ranged from five to thirty years, with a mean of 13.2 (6.0 SD). On NPR, the average pain was 4.7 (1.2 SD), with a minimum of 2.0 and a maximum of 7.0. The average neck disability index was 19% (4.2 SD), with a range of 4% to 24%. (Table 1)
The physical domain score was 65.3% (15.7 SD) on average, with scores ranging from 31% to 100%. Average psychological domain scores was 61.6% (SD: 16.6%), ranging from 38% to 98%.average score for social domain was 71.6% (13.2 SD), with a range of 31% to 100%. Scores for environmental domain variate from 44% to 100%, with an average of 68.2% (14.8% SD).

The study comprised 151 male participants with an average age of 38.3 years (6.4 SD) and an average height of 148.9 cms (7.9 SD). The subject's mean weight was 62.5 kg (9.8 SD) with a BMI of 2.3 kg/m2 (4.4 SD). The subject's neck pain duration ranged from 3 months to 17 years, with a mean of 2.9 (3.1 SD). The subjects' experience ranged from 5 years to 30 years, with an average of 13.3 years (5.9 SD) . The subject's neck pain ranged from 2 to 7 on the NPRS, with an average of 4.7 (1.2 SD). The neck disability index varied from 4% to 24% with an average of 18.8% (4.4 SD).
With an average of 64.4% (15.9), the physical health domain scores range from 44% to 94%. Psychological domain ranging from 44% to 94%, the average score was 61.6% (16.5 SD). Average of 70.7% (13.8 SD) across the social domain, with a range of 44% to 100%. With an average score of 68.8% (14.2 SD), the environmental domain had a range of 44% to 94%. (Table 1)

The study comprised 185 female participants, with an average age of 38.0 (6.1SD) and a mean height of 148.1 cm (8.0SD). The mean BMI was 28.8 kg/m2 (4.6 SD) and the average weight was 62.8 kg (9.3 SD). The average duration of neck pain was 2.8 (3.0 SD) and ranged from 3 months to 17 years. The work duration ranged from six to fourteen hours, with an average of 8.2 (1.1 SD) hours. On the NPRS, neck pain varied from 2 to 7 with an average of 4.7 (1.3 SD).Neck Disability Index scored average of 19.2% (3.9 SD) and ranging from 4% to 24%

Score For Physical Health Ranged From 31.0 To 98 with average of 66.1 % (5.4 SD). Psychological Domain Scores Varied From 38.0% To 98.0%, With 61.7% (16.8 SD) Throughout The Range. Average Social Domain Scores Was 72.4% (12.8 Sd), Ranging From 31% To 100%. The Environmental Domain Received An Average Score Of 67.7% (15.2), With A Range Of 44% To 100%.

Co-Relation Of Pain With Function And Quality Of Life(TABLE 2)

NPRS and NDI (%) The correlation coefficient between the Neck Pain Rating Scale (NPRS) and Neck Disability Index (NDI) percentages is 0.165, indicating a positive correlation. The p-value associated with this correlation is significant at 0.025 ($p < 0.05$), suggesting that the correlation is unlikely to have occurred by chance.

This positive correlation suggests that as the neck pain intensity (NPRS) increases, the percentage of neck disability (NDI) also tends to increase among the study participants.

NPRS and Domain 1 (Physical Health): Correlation coefficient: -0.224 Interpretation: A negative correlation between NPRS and Domain 1 scores, indicating a slight relationship between neck pain intensity and physical health.

NPRS and Domain 2 (psychological Health) Correlation coefficient is 0.274 Interpretation: A negative correlation between NPRS and Domain 2 scores, suggesting a relationship where higher neck pain intensity is affects the psychological wellbeing.

NPRS and Domain 3 (social relationship): Correlation coefficient is 0.154Interpretation: A negative correlation between NPRS and Domain 3 scores, indicating a relationship where higher neck pain intensity has a effect on social relationship.

NPRS and Domain 4 (Physical Health) Correlation coefficient is -0.281 Interpretation: A negative correlation between NPRS and Domain 4 scores, suggesting a relationship where higher neck pain intensity is associated with environmental health.

TABLE 1-

Descriptive Statistics

	Mean	SD
Male n=151		
AGE	38.3	6.4
HEIGHT (KG)	148.9	7.9
WEIGHT (KG)	62.5	9.8
BMI	28.3	4.4
NECK PAIN SINCE	2.9	3.1
(PHYSICAL HEALTH) DOMAIN 1	64.4	15.9
(PSYCHOLOGICAL) DOMAIN 2	61.6	16.5
(SOCIAL)DOMAIN 3	70.7	13.8
(ENVIRONMENT)DOMAIN 4	68.8	14.2
DURATION OF WORK (HRS)	8.2	1.3
EXPERIENCE YEARS	13.3	5.9
NPRS	4.7	1.2
NDI (%)	18.8	4.4
Female n=185		
AGE	38.0	6.1
HEIGHT (KG)	148.1	8.0
WEIGHT (KG)	62.8	9.3
BMI	28.8	4.6
NECK PAIN SINCE	2.8	3.0
(PHYSICAL HEALTH) DOMAIN 1	66.1	15.4
(PSYCHOLOGICAL) DOMAIN 2	61.7	16.8
(SOCIAL)DOMAIN 3	72.4	12.8
(ENVIRONMENT)DOMAIN 4	67.7	15.2
DURATION OF WORK (HRS)	8.2	1.1
EXPERIENCE YEARS	13.0	6.1
NPRS	4.7	1.3

NDI (%)	19.2	3.9
Total n=336		
AGE	38.1	6.2
HEIGHT (KG)	148.4	7.9
WEIGHT (KG)	62.7	9.5
BMI	28.6	4.5
NECK PAIN SINCE	2.8	3.0
(PHYSICAL HEALTH) DOMAIN 1	65.3	15.7
(PSYCHOLOGICAL) DOMAIN 2	61.6	16.6
(SOCIAL)DOMAIN 3	71.6	13.2
(ENVIRONMENT)DOMAIN 4	68.2	14.8
DURATION OF WORK (HRS)	8.2	1.2
EXPERIENCE YEARS	13.2	6.0
NPRS	4.7	1.2
NDI (%)	19.0	4.2

Table 2

CORELATION OF PAIN WITH FUNCTION AND QUALITY OF LIFE

		NPRS	NDI (%)	(PHYSICAL HEALTH) DOMAIN 1	(PSYCHOLOGICAL) DOMAIN 2	(SOCIAL)DOMAIN 3	(ENVIRONMENT)DOMAIN 4
NECK PAIN SINCE	Pearson Correlation	.236**	.122*	-0.005	0.037	-.116*	-0.015
	Sig. (2-tailed)	0	0.025	0.928	0.499	0.033	0.777
	N	336	336	336	336	336	336
NPRS	Pearson Correlation	1	.165**	-.224**	-.274**	-.154**	-.281**
	Sig. (2-tailed)		0.002	0	0	0.005	0
	N		336	336	336	336	336
NDI (%)	Pearson Correlation		1	-.189**	-.226**	-.240**	-.202**
	Sig. (2-tailed)			0	0	0	0
	N			336	336	336	336
(PHYSICAL HEALTH) DOMAIN 1	Pearson Correlation			1	.769**	.610**	.663**
	Sig. (2-tailed)				0	0	0
	N				336	336	336
(PSYCHOLOGICAL) DOMAIN 2	Pearson Correlation				1	.619**	.786**
	Sig. (2-tailed)					0	0
	N					336	336
(SOCIAL) DOMAIN 3	Pearson Correlation					1	.627**
	Sig. (2-tailed)						0
	N						336

(*)- significant at 5% level of significance (0.05)

(**)- significant at 1% level of significance (0.01)

Discussion :

Since India's largest manufacturing sector is the textile industry. so the health of tailors, who are the industry's pillars, should be given enough priority. The health risks that tailors face increase over time as a result of numerous factors, including years of employment, working hours, and ergonomic considerations.[5]

The current study involved 366 tailors to establish co-relation of chronic neck pain with function and quality of life in professional tailors.

our study included participants who had wide range of experience ranging from 5 years to 30years which resulted to neck pain due to their long working hours and awkard posture attained during work. similarly Tesfaye Hambisa Mekonnen et.al found that work experience was significantly associated with neck and/or shoulder pain among self-employed tailors in Ethiopia. [12]

In the present study major associated factors for cause of neck pain in tailors was highly repetitive work, long working hours and improper posture .Gebremedhin H.Biadgo et.al concluded that tailors working greater than 8hours per day have significant association with neck pain.[13] our study included participants who are working more than 5hrs a day , in which more than 60% of participants works for more than 8hrs per day are more prone to experience neck pain.

Nipa V. Patel et.al found that 91% among 100 tailors experienced neck pain among which 67% had activity limitation. Our study also showed a positive co-relation of neck pain and neck disability as neck pain increases neck disability also tends to increase resulting in activity limitation.[6] A study conducted by Avani K Ghediya to determine prevalence of mechanical neck pain in Gujarat workers in ahemdabad using Neck Disability Index it determined that among 115 garment workers, 43.47% had mild , 13.91% had moderate and 0.86% had severe neck pain.[14]

Majdi Hashem et.al conducted a study to assess the influence of musculoskeletal pain on quality of life of adult individuals concluded that musculoskeletal pain can influence physical , psychological , social and lifestyle health related elements. [15] similarly our study showed a moderate negative co-relation between pain and physical , psychological , social relationship and environmental health.

So the study found a significant co-relation of chronic neck pain with function and quality of life in professional tailors.

Conclusion :

In conclusion this study shows that neck pain, measured by the NPRS, is strongly linked to increased disability and has negative effects on many areas of quality of life, such as physical, mental, social, and environmental well-being. These results reveal how neck pain can impact various aspects of a person's life and emphasize the need for well-rounded management approaches that consider not just the physical pain but also the wider quality of life issues faced by those affected.

Limitations :

The current study only focused on subjective assessment of the individual , where objective assessment of the individual and work place is necessary to be considered.

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