



A STUDY ON THE IMPACT OF WORK-RELATED MUSCULOSKELETAL DISORDERS ON QUALITY OF LIFE IN WORKING FEMALES

Physiotherapy

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ABSTRACT

Background- The assessment of health-related quality of life (QOL) is used widely as an outcome of health care system and health care interventions. Considering the health of the young professional females affects the individual growth and socio-economic growth of the country, we aimed to assess the prevalence of Musculoskeletal Disorders (MSDs) and its impact on health-related quality of life of professional females in Delhi and NCR.

Method- 300 females of age 27-35 years who were fulfilling the inclusion criteria were selected for study and out of which 270 consented to participate in the study. Kuppaswamy scale was employed to set a Socio-Economic Status (SES) baseline. To record musculoskeletal disorders, the Nordic Musculoskeletal Questionnaire was employed. Health related Quality of life was checked by SF-36 scale. Descriptive statistics and multi regress analysis were used.

Result- 100% subjects were affected by musculoskeletal disorders in one or more body region. Major MSDs affected the body regions: lower back(72.9%), neck(64.4%), upper back(51.8%), knees(41.5%), shoulder(32.5%). Among eight dimensions of health related quality of life, mean score of social functioning was highest (80.74), followed by physical functioning (79.68), emotional wellbeing (74.38) and mean score of physical role limitation (57.96) and general health (57.37) were lowest.

Conclusion- The present study reports 100% prevalence of musculoskeletal disorders in professional females in one or other body region which is also affecting their quality of life.

KEYWORDS

Work-related Musculoskeletal disorders, Health-related Quality of Life, Kuppaswamy scale, Nordic musculoskeletal questionnaire, SF-36 scale

INTRODUCTION

In the last decade concept of health transformed into a comprehensive practice where emphasis is given to a more holistic approach. Newer aspects of quality of health is considered an important part of a health assessment. At the same time the demography of society has changed in a way that men and women both share equal responsibility in earning money as well as taking turns in household work. After globalization, women are bagging more and more job opportunities and share the equal economy in the society¹. This is encouraging women to be the part of economy². A survey done in November, 2015 discovered that over the next 40 years, India is projected to add 424 million working age adults^{2,3}. If India can increase women's labour force participation by 10% (68 million more women) by 2025, India could increase its GDP by 16%^{4,5}. A working woman who works out of the house or does job to satisfy her economic and social status often complains of musculoskeletal pain which decreases their working efficiency⁴. These overburdens sometimes lead to ignorance of body ergonomics which in turn lead to work related musculoskeletal disorders⁶. Musculoskeletal disorders (MSDs) are identified as injuries to the human support system of muscles, tendons, ligaments, blood vessels, nerves, joints, and bones^{6,7}. Work-related musculoskeletal disorders are among health problems in work places of industrially developed and developing countries, which are caused by work cumulative trauma disorders (WCTDs)^{8,9}. Work-related musculoskeletal disorders are a major concern of workers, employers, and governmental organizations in many industrialized countries due to the high prevalence and enormous cost associated with these disorders^{8,10}.

Working hours of job with more than 8 hours daily has a significant relationship with disabilities caused by work-related musculoskeletal disorders¹⁰. Musculoskeletal conditions affect more than 1.7 billion people worldwide and have the 4th greatest impact on the overall health of the world population, considering both death and disability¹¹. It is supposed that the job is one of the most effective factors on women's quality of life⁴. Health-related quality of life is multidimensional and incorporates domains related to physical, mental and emotional, and social functioning¹². Marital status, socio-economic status, age, lower level of education and income were risk factors related with musculoskeletal disorders¹³.

METHODOLOGY

The study was a cross-sectional study conducted in Delhi, NCR. 300 females were approached in which 270 consented to participate. Females aged 27 to 35 years¹ participated in this study and were set to inclusion criteria with marital status, primigravida and no pregnancy at

the time of this study, work experience of 5-10 years, upper middle class as per Kuppaswamy socio-economic scale, 8 hours of work⁷ and normal BMI as per WHO¹². To record musculoskeletal disorders, the Nordic Musculoskeletal Questionnaire has employed. The questionnaire includes neck, shoulder, lower back, elbow, hands, upper back, hips, knees and feet to record regional pain. Response recorded in dichotomized alternative yes or no for above mentioned part of body pain over the past months or days and functional impairments.

Health related Quality of life was checked by SF-36 scale. This scale consists of 36 questions under 8 items. These items are physical functioning, role limitations due to physical problems, role limitations due to emotional problems, bodily pain, social functioning, mental health, vitality and general health perceptions. The items were scored on nominal or ordinal scale. The Scores had a range of between 0 and 100, with a higher score indicating a better health related quality of life.

RESULTS

Analysis of prevalence and severity of musculoskeletal disorders according to different regions of the body for last 12 months and 7 days.

The mean age group of subject is 29.5±2.5

The last 12 months MSD prevalence was 100 % distributed in one or more body region but predominant in lower back (72.9%), neck (64.4%), upper back (51.8%), knees (41.5%), shoulder (32.5%), ankle/feet (27.03%), wrist/hand (19.2%), hip/thighs (9.25%), and elbow (5.55%). The last seven days MSD prevalence was 100 % distributed in one or more body region but predominant in lower back (45.9%), neck (37%), upper back (31.4%), knees (20.7%), shoulder (16.6%), ankle/feet (12.6%), wrist/hands (9.6%), hip/thighs (4.4%), and elbow (2.6%). From the descriptive analysis it indicated that 100 % respondents are affected by MSDs in one or more body region. The severity of MSDs last 12 months respondents indicated that they were prevented from carrying their normal activities with lower back (34.8%), neck (23.7%), upper back (16.7%), knees (14.8%), shoulder (11.9%), ankle/feet (10%), elbow and wrist/hand (5%) and hip/thighs (2%). (Table 1)

Among eight dimensions of quality of life, mean score of social functioning followed by physical functioning (79.68), emotional wellbeing (74.38) and functioning is highest (80.74) which is depicting that social functioning is most affected among other dimensions of quality of life, mean score of physical role limitation and

general health are lowest. (Table 2)

Table 1 - 100% prevalence of MSDs in one or other region during last 12 months, during last 7 days and functional impairment during last 12months

BODY REGION	LAST 12 MONTHS				LAST 7 DAYS				FUNCTIONAL IMPAIRMENT			
	YES		NO		YES		NO		YES		NO	
	N	%	N	%	N	%	N	%	N	%	N	%
Neck	174	64.4	96	36	100	37	170	63	64	23.7	206	76.3
Shoulder	88	32.5	182	67	45	16.6	225	83	32	11.9	238	88.1
Elbow	15	5.55	255	94	7	2.6	263	97	1	0.37	269	110
Wrist/hand	52	19.2	218	81	26	9.6	245	91	16	5.9	254	94
Upper back	140	51.8	130	48	85	31.4	185	69	45	16.7	225	83.3
Lower back	197	72.9	73	27	124	45.9	146	54	94	34.8	176	65.1
hips/thighs/buttocks	25	9.25	245	91	12	4.4	258	96	5	1.85	265	98.1
Knees	112	41.5	158	59	56	20.7	214	79	40	14.8	230	85.1
Ankle/feet's	73	27	197	73	34	12.6	236	87	27	10	243	90

Table - 2 Mean score and Standard Deviation of eight dimension of SF-36

SCALE	MEAN	SD±
Physical functioning	79.685	27.882
Role limitation(physical health)	57.963	49.385
Role limitation(emotional health)	68.765	46.374
Energy/fatigue	65.278	20.966
Emotional well being	74.385	18.915
Social functioning	80.741	19.783
Pain	65.009	20.442
General health	57.38	24.24

DISCUSSION

Present studies shows prevalence of musculoskeletal disorders is 100% distributed in one or other region in the study but out of all the regions, the lower back have higher prevalence, among all professional females. The working environment, psychological factors and job stress have negative impact on the low back pain at every age group mentioned in the study. Low back pain have noteworthy relationship with psychological and physical stress^{14,15,16}. Excessive physical work and Static postures have been directly related to the low back pain¹⁷. This negative impact may be the reason of discomfort at work in 34.8% LBP complaints since last 12 months. Socio-economic burden plays a major role in the musculoskeletal disorders in most of the countries. Females who have the burden of work and family have decrease Quality of Life¹⁸. Stressful working environment, lack of social support from colleagues and family has a negative impact on MSDs. The results shows that females who were less socializing complaint more of Low Back Pain¹⁹.

Musculoskeletal pain is responsible for poor quality of life and decreased productivity. Musculoskeletal disorders/pain is very common and every fourth person suffers from it. Subjects in productive age groups, women and those who are obese are at special risk. Low back pain and neck pain have the strongest relationship with sickness absence^{10,20}. But the result of present study does not relate with this relationship, females' in spite suffering from MSD did not take leave from work. In a previous publication the lower back was shown to be the body part that has the highest prevalence of musculoskeletal disorder in the aluminium industry. These findings support previous studies that showed a relationship between physical risk factors and low back pain/neck pain was associated generally with low HRQOL at both physical and mental level¹¹.

Present study shows that musculoskeletal disorders impacts HRQOL. Certain factors may cause work-related MSDs such as awkward postures, duration of work/number of hours per day, nature of job, design of workstation, instrumentation used, psychological stress and frequency of trauma²¹.

Results supports that females majorly suffers from neck and back pain at work²³. The symptoms are more seen in working women, at work

because of repetitive activity, poor ergonomics and at home, having less opportunity to relax and exercise²⁴.

The extent of enhancement in quality of life related with progression in physical activity was considerable²⁵. Present data of the study reports decrease in physical functioning, social functioning, and the role limitation (due to physical functioning and emotional wellbeing) which is strongly co-related with lesser amount of physical activity they carry out.

The results of the present study is in accordance with the study done in 2012 by Kerman Saravi et al, comparing HRQOL of employed women and housewives in southeast Iran argued that one reason for low physical functioning among employed women might be due to work-related stress because of low job condition, high job demands and low work related social support⁴.

To eradicate the MSDs from workstations, thorough risk assessment and ergonomic assessment seemed to be essential. Upgrading the company guidelines according to physical and psychological load of the workplace, changing work patterns, use of safety equipment, individual ability and physical workload of particular occupation should be kept in mind²⁶.

Considering the results of the study, improvement in quality of life of employed women can also possibly attained through inclusive social support, and increased confidence, recreation intervals between working hours, physical exercise at work is practiced in the workplace with sessions of 10–20 minutes targeted mainly to the muscles and body location most requested during working hours²⁷, prevention of abnormal loading on body structures.

CONCLUSION

The present study reports 100% prevalence of musculoskeletal disorders in professional females in one or other body region which is also affecting their quality of life.

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