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Awareness among Women Regarding Musculoskeletal Disorders and Role of Physical Activity

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ABSTRACT

Background: Musculoskeletal (MSK) pain is very common in both developed and developing countries with estimate of prevalence ranging from 11-60%. In India, prevalence of Musculoskeletal Disorders (MSDs) was 60% to 100% in selected housewives. Women are also at high risk of developing MSDs as they also do several works at home or working place or at both in which many works include high repetitions, awkward posture, strenuous activity. So, many extrinsic and intrinsic factors combine together and results in MSDs. Movement associated with a structured and planned type of physical activity i.e. exercise, increases an individual's strength, flexibility, and endurance, which eventually improves postural control, the capacity to resist muscle fatigue, muscle recuperation time, and everyday performance. Physical fitness and exercise have been recommended for lowering WRMSD risk and to improve muscular capabilities and efficiency.
Aims and Objectives: The aim of the study was to find out awareness among Indian women regarding the MSDs and role of Physical activity.
Method: The study design was a cross-sectional study. A self-administered questionnaire was prepared, it consisted of 12 questions. Questionnaire was disseminated to women through online communication system with attached link. 100 women (age group 20-50years) took part in the survey. The data was analyzed by using Microsoft Excel 2019.
Results: From the 100 respondents 41 were housewives and 59 were working women. Awareness among women on MSDs was 68% and about role of Physical activity was 85.75%.80% women were doing regular 20-30minutes physical activity.
Conclusion: More than half of women were aware about MSDs where as in good amount women having knowledge about the role of Physical activity. Result showed that awareness among housewives compare to working women is poor to fair and good amount of working women think that physical activity can prevent MSDs and are performing physical activity on daily basis as compare to housewives.

Keywords: Awareness, Musculoskeletal disorders (MSDs), Physical activity, Women

INTRODUCTION

The World Health Organization defines musculoskeletal disorders (MSDs) as "disorders of the muscles, tendons, peripheral nerves or vascular system not directly resulting from an acute or instantaneous event".[1] Health problems range from discomfort, minor aches and pains, to more serious medical conditions which require time for recovery.[2] Musculoskeletal (MSK) pain is very common in both developed and developing countries with estimate of prevalence ranging from 11%-60% which is the 4th

greatest impact resulting on health of the world population, considering both death and disability. [3]-[4]

A number of studies have found that the mechanisms leading to work-related musculoskeletal pain are multifactorial. The MSDs pain can be attributed to numerous risk factors like prolonged static postures, repetitive movements, suboptimal lighting, poor working positioning, genetic predisposition, mental stress, physical condition, and age. [5]-[6] In India, the prevalence of MSDs among the adult population was found to range between 6.92% to 76.8%.[7]

The previous studies suggested that the prevalence of musculoskeletal pain among women are more common than men. The prevalence of injuries among women in the United States was 79%, Ontario and Quebec in Canada were reported as 65% and 50%, respectively.[4] In India, prevalence of MSDs was 60% to 100% in selected housewives. [8-9]

Movement is dependent on the interrelationships of the body's systems (e.g., circulatory, musculoskeletal) and is the result of the interactions of an individual, a task, and an environment. [10]-[11] Consequently, Physical activity, which is the movement of skeletal muscle that requires the use of energy,[12] may be limited by an individual's physical abilities or functional capacity to complete the demands of a task. Sustaining an awkward posture increases the work and energy expense of the muscles; therefore, the time to fatigue a muscle is shortened.[13]

Physical inactivity, also known as sedentary behavior, can have detrimental effects on an individual's health and is associated with an increased risk for chronic conditions, such as heart disease and osteoporosis.[14] Unfortunately, the health benefits of exercise can be negated by a high amount of sedentary behavior, such as sitting. In addition, prolonged sitting can heighten musculoskeletal discomfort and potentially increase WRMSD risk.[15]

In contrast, movement associated with a structured and planned type of physical activity i.e. exercise, increases an individual's strength, flexibility, and endurance, which eventually improves postural control, the capacity to resist muscle fatigue, muscle recuperation time, and everyday performance.[16] Physical fitness and exercise have been recommended for lowering WRMSD risk and to improve muscular capabilities and efficiency.[17] Improved muscle strength enhances physical performance and balance, supports posture, and helps to prevent injuries.[18]

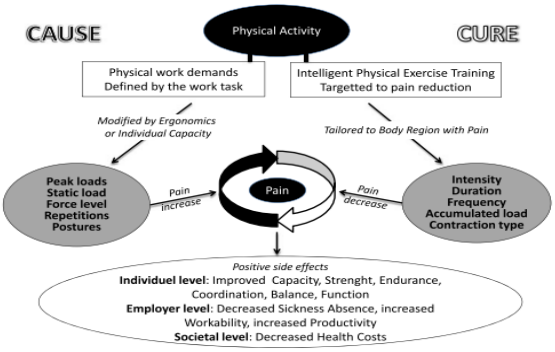

Figure.1 The model shows the counterbalancing effect of physical activity in terms of work and Intelligent Physical Exercise Training (IPET) on pain status and the additional side effects of IPET.[19]

Thus, the aim of the study was to find out the awareness among women regarding the MSDs and role of physical activity which will eventually help to spread awareness and prevent or reduce rate of MSDs among women.

MATERIALS AND METHODOLOGY

Data of 100 women were collected. This was a cross-sectional observational study and snowball sampling technique was used. A self-administered questionnaire was developed and spread through online

communication system with attached link. E-consent was taken prior to survey, followed by demographic details and questionnaire.

Participant's age was between 20-50 years and those who were able to understand Hindi and English took part in the survey.

The online self-administered questionnaire was developed by the investigator using previously published studies. The data collection was initiated on March 2021 and closed on April 2021. The questionnaire designed included the sociodemographic data as well as various questions to assess awareness of MSDs, awareness on role of physical activity in prevention of comorbidities and MSDs, about regular physical activity and its type, how many suffered from any musculoskeletal symptoms and taken physiotherapy for the same.

Statistical analysis: data was analyzed by using Microsoft excel 2019.

RESULT

The result showed the descriptive character of the study, from the 100 respondents 41 were housewives and 59 were working women. Mean age of participants was 38.94.

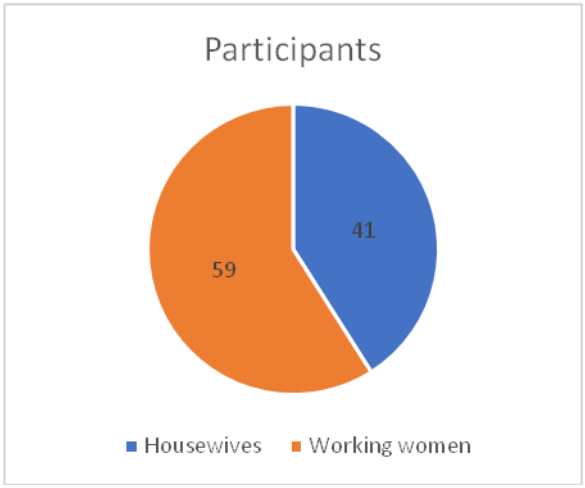

Fig.1 Participants distribution

Table 1. Questions wise analysis

Variables	Housewives N=41	Column1	Working Women N=59	Column2
	f	%	f	%
Have you ever heard about Musculoskeletal disorders?	19	46%	40	67%
Do you know that overweight individuals have a higher risk of some MSDs like back pain, knee pain etc?	36	87.80%	57	96%
Do you think regular physical activity can reduce the risk of comorbidities like type 2 diabetes, heart disease etc?	32	78%	55	93%
Do you know daily 30 minutes regular physical activity can prevent the Musculoskeletal disorders?	27	65%	56	94%
Are you doing regular 20-30minutes or more physical activity?	28	65%	50	84%
Do you think regular physical activity helps to improve your overall health, fitness, quality of life?	31	75%	56	94%
Have you felt any Musculoskeletal complaints in last one year?	20	48%	34	57%
Have you taken any physiotherapy treatment regarding your complaints?	11	26%	22	37%

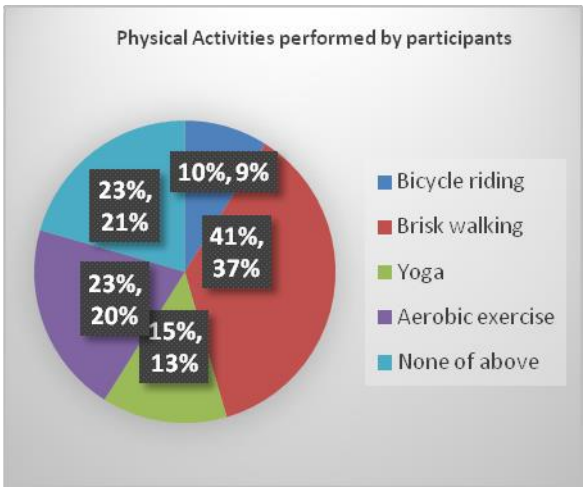

Figure.4 Physical activities performed by participants

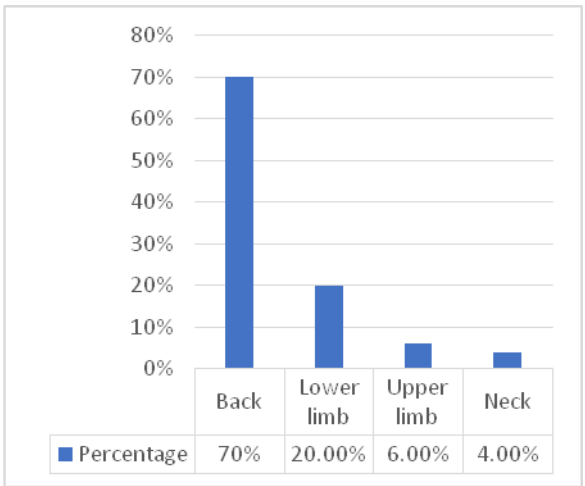

Figure.3 Affected body regions according to participants

DISCUSSION

Physical activity is often recommended for preventing several diseases, including MSDs, cardiovascular disease and other chronic condition.

Among the respondents, only 59% have heard about Musculoskeletal disorder (MSDs) before this, meanwhile the rest, 41% have never heard about the diseases. The present study evaluated that 46% housewives had knowledge about MSDs while in working women 67% had knowledge about MSDs. So, the study concluded that, in compare to housewives, working women had good knowledge about MSDs. Among all, 70% women think that back was the most affected part followed by lower limb 20%, upper limb 6% and neck 4%. 87.80% housewives and 96% working women think that obesity can lead to MSDs.

60% women think that poor ergonomics was the main factor that leads to the musculoskeletal disorder in women. Meanwhile, there were 51% women think that repetitive motion was the main factor.10% women were not aware about anything.

Majority of women (74%) mentioned that all the factors were necessary to avoid MSDs. Meanwhile other stated that reducing body weight (21%) and performing regular physical activity (20%) were most suitable factors. Nevertheless, 8% and 5% women think that good posture during work and stress reduction are also suitable factors respectively.

78% housewives and 93% working women think that physical activity can prevent comorbidities. As more countries incorporate Physical activity and exercise as part of primary and secondary prevention strategies in chronic diseases such as CVD, type 2 diabetes, stroke, cancer, and many others, which leads in reduction of their health care costs along with improvement in quality of life.[20] Because Exercise causes increased myocardial oxygen supply, decreased myocardial oxygen demand, increased myocardium electrical stability, and overall improved myocardial function. This improved myocardial function is associated with decrease in other variables such as heart rate, systolic blood pressure and blood catecholamine levels at rest and all sub-maximal exercise levels which eventually contribute to a better functioning cardiovascular system. [21]

Among 46%, 65% housewives knew that regular 30 minutes physical activity can prevent MSDs. While among 65% working women,94% knew that regular 30 minutes physical activity can prevent MSDs. Talpos-Niculescu C, Lungeanu D, Anghel M, Stratul SI, Bucur in 2009, did a study in dentists and concluded that Physical exercise has been shown to be an effective preventive intervention for back, neck and shoulder pains. Exercise is especially beneficial for dental care workers in the prevention and treatment of musculoskeletal disorders, stress and decreases the existing MSDs pain. [22]

65% housewives and 84% working women were doing regular 20-30 minutes physical activity. Among them 41% were doing Brisk walking, 23% aerobic exercise, 15% yoga, 10% bicycle riding and 23% were doing nothing.75% housewives and 94% working women think that physical activity can improve quality of life. A study done by Koneru S, Tanikonda R. in 2015 found that yoga was more effective than other modes of physical activities like aerobics, brisk walk, sports, etc., as 89.5% of yoga practitioners were free of musculoskeletal pain, in comparison with the dentists with other practices, only 78.3% were free of musculoskeletal pain. Yoga is found to be more effective than other modes of physical activities because of its more controlled nature and its positive effect on the psychological stress and strain.[23]

In last one year 48% housewives suffered from musculoskeletal symptoms and among them only 26% took physiotherapy for the same. While in working women 57% suffered from musculoskeletal symptoms and among them 37% took physiotherapy treatment.

The present study evaluated that woman had average knowledge about MSDs but had good awareness regarding the role of physical activity. Looking further into this analysis, result showed that awareness among housewives compared to working women is poor to fair and good amount of working women think that physical activity can prevent MSDs and are performing physical activity on daily basis as compared to housewives.

The study had several limitations. This study was limited to people who had a smartphone and could understand Hindi and English as we had used social media platforms, so may failed to reach people from lower socioeconomic classes and people with lower education level. The sample size was too small due to limited duration of study. The proportion of housewives and working women was not same. The future recommendation of the study is that it can be conducted in different age groups and different population with larger sample size.

CONCLUSION

The awareness of MSDs and role of Physical activity among women is very important as the prevalence of MSDs in women is increasing day by day. The purpose of this quantitative descriptive study was to explore the level of awareness of women on MSDs and role of physical activity and to identify the type of regular exercise performed. This study concluded that from 100 respondents, 59 individuals were having knowledge about MSDs. About role of Physical activity, working women were having more knowledge than housewives where as compared to working women, housewives were performing less regular physical activity.

Being highly active does not necessarily mean the types of activities are appropriate for lowering MSDs.

Therefore, to improve general fitness and to reduce the rate of MSDs every woman should follow a tailor-made exercise protocol according to their body type.

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Ethical Approval: Approved

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