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Original Research Article

Correlation of Physical Activity and Quality of Life in Middle Age Female Medical Professionals

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ABSTRACT

Background: Physical activity is one of the major lifestyle related health determinants. Doctors' self-involvement in physical activity may improve patient motivation, thus encouraging them for a physically active lifestyle.
AIMS: To co-relate physical activity and quality of life in middle age female medical professionals using International Physical Activity Questionnaire and SF-36 respectively.
Materials & Methods: 40 female health professionals between 40-60 years were included with no history of recent trauma or surgery. Those willing and fulfilling the selection criteria were then explained the nature and purpose of the study. Demographic details were taken along with the outcomes measures were taken using the self administered questionnaires. Level of significance was set at 5%.
Results: Statistical analysis was done using SPSS version 16. Variables were analyzed for normal distribution. Pearson's test of co-relation was applied between the outcome measures. Physical activity was found to have a strong positive co-relation with physical component summary of SF-36 (r=0.724) and a weak positive co-relation with mental component summary (r=0.302). Mean physical activity levels were calculated for 4 domains: work, domestic, leisure and transport.
Conclusion: Physical activity co-relates with physical component of quality of life in female doctors, highlighting the importance of physical activity and its benefits.

Keywords: Physical activity, quality of life, mental component, physical component, female doctors.

INTRODUCTION

Physical activity is typically defined as any bodily movement produced by skeletal muscles that result in energy expenditure above the basal level. [1] It has long been acknowledged as an important part of a healthy lifestyle, and recent scientific evidence has linked regular physical activity to a wide range of physical and mental health benefits. Women have a distinctive relationship with health in our society partly because of their reproductive capacities, but also because of their multiple roles. Due to the potential onset of negative health events, middle age is a vulnerable period which can affect women's health and well being, followed by a decrease in quality of life in physical and mental domains compared to men at the same age or younger women. [2] Quality of life is conceptually defined as an individual's perception of his/her stand in life within a socio-cultural context with regards to their goals, expectations, standards and concerns. [3] Middle age women are usually in their transition period towards menopause and

some have already achieved menopause, which highly influences their quality of life.

Physical activity is one of the major lifestyle related health determinants. Habitual daily participation in physical activity results in a plethora of health benefits, improving the overall functional and mental health. Promotion of physical activity and counseling about a healthy lifestyle to patients is one of the key tasks of health professionals, and female doctors are more likely to counsel regarding physical activity than their male counterparts. Regular PA increases QoL at different ages. Studies have investigated the association between PA and overall QoL, and the effects of PA on specific domains of QoL. According to the literature, primary care doctors are more active in health promotion than other professionals and women physicians are more likely to counsel regarding prevention than men. [4] Doctors' self involvement in physical activity can improve patient motivation, thus encouraging them for a physically active lifestyle. Evidence supports a positive association between PA and QoL, however in India; no study has been conducted to assess this area of women's health. Hence, the need of the study was to assess the physical activity patterns in middle age female medical professionals and co-relate it with their Quality of Life (QoL).

Aims and Objectives:

To analyze the physical activity in middle age female medical health professionals using International Physical Activity Questionnaire. To analyze the quality of life using SF-36 questionnaire. To co-relate their physical activity with physical component and mental component summary of quality of life.

MATERIALS AND METHODS

A convenience sample of 40 female doctors between 40-60 years were included with no history of recent trauma or surgery. Those with any recent musculoskeletal, neurological or cardiovascular impairment were excluded. Nature and purpose of the study was explained to the participants. Informed written consent was obtained. Health related-QoL was assessed using SF-36 Questionnaire and International Physical Activity Questionnaire (IPAQ) was used for physical activity.

SF-36 is a self administered questionnaire. It is a multipurpose, short-form health survey with only 36 questions. It yields an eight-scale profile of scores as well as physical and mental health summary measures. It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group. Three scales (Physical Functioning, Role-Physical, and Bodily Pain) correlate most highly with the physical component and contribute most to the scoring of the Physical Component Summary (PCS) measure. The mental component correlates most highly with the Mental Health, Role-Emotional, and Social Functioning scales, which also contribute most to the scoring of the Mental Component Summary (MCS) measure. Three of the scales (Vitality, General Health, and Social Functioning) have noteworthy correlations with both components. Reliability for PCS exceeds 0.90 whereas for MCS is 0.93. MCS has a sensitivity of 74% and specificity of 81% whereas PCS and Physical Functioning, Role Physical, and Bodily Pain scales are the most valid SF-36 scales for measuring physical health. [5]

IPAQ is a self administered questionnaire which categorizes physical activity into 4 major domains: Work, Domestic, Leisure, and Transport. [6] IPAQ asks participants to report activities performed for at least 10 minutes during the last 7 days. Respondents are asked to report time spent in physical activity performed across leisure time, work, domestic activities, and transport at each of 3 intensities: walking, moderate, and vigorous 3.3 METs, 4.0 METs, and 8.0 METs, respectively. [7] Level of significance was set at 5%.

RESULTS

Statistical analysis was done using SPSS Version.16. Variables were analyzed for normal distribution using Kolmogorov-Smirnov test. Pearson's co-relation was then applied and co-efficient *r* was determined.

Descriptive statistics of participants is shown in table 1. Mean physical activity levels were calculated across the 4 domain as shown in figure 1. Strong positive co-relation was found between physical activity and physical component summary (r=0.724) and weak positive co-relation was found between physical activity and mental component summary (r=0.302), as shown in figure 2 and 3 respectively.

Table 1: Demographics of participants

NO.	Variable	MEAN ± SD
1.	Age (Years)	47.63 ± 6.73
2.	BMI (Kg/M2)	24.91 ± 3.31
3.	SITTING Mets	1759.2 ± 586.5
4.	Working Experience (Years)	12 ± 2.3

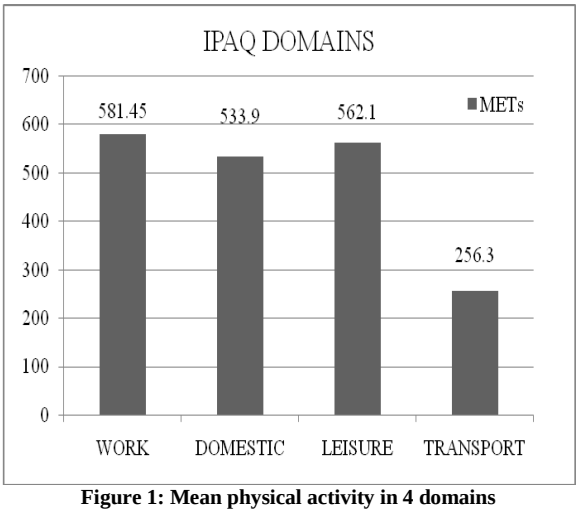

Figure 1: Mean physical activity in 4 domains

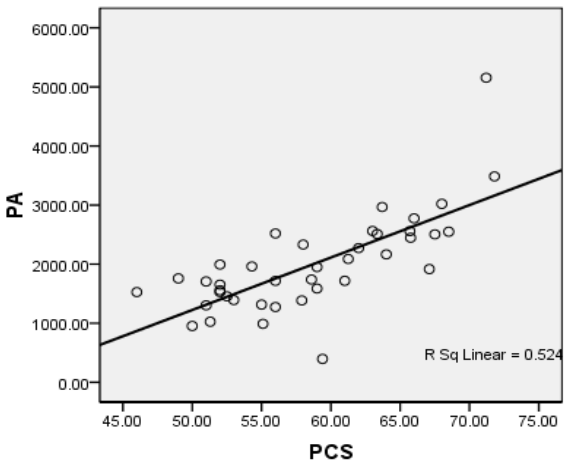

Figure 2: Co-relation of physical activity and physical component summary

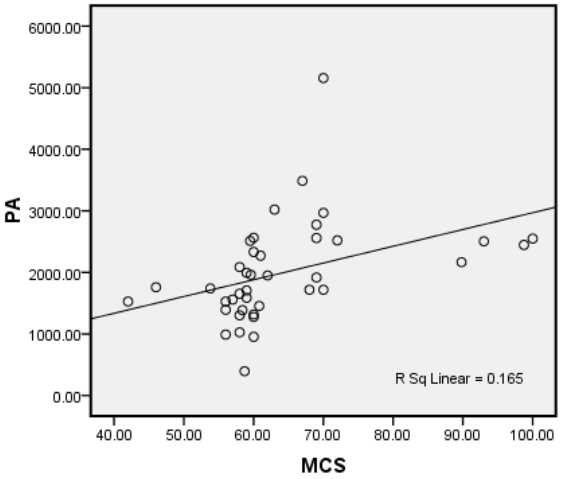

Figure 3: Co-relation of physical activity and mental component summary

DISCUSSION

The present study shows a strong positive co-relation between physical activity and physical component summary of quality of life whereas mental well being shows low positive co-relation. These findings are important in understanding the importance of physical activity in the well being of middle aged female medical professionals.

The findings of this study are much in line with previous studies done in western countries. Jurakic et al., assessing QoL with the SF-36 questionnaire, observed that leisure PA was associated with vitality and mental health domains among women, and with vitality and bodily pain among men. [8] Few studies have shown positive associations between leisure PA and general QoL. Silva et al found that active individuals had significantly higher scores in the physical, psychological and environmental domains. [9]

Middle aged females experience certain biological transitions, along with a decrease in physiological and psychological domains of quality of life. Physical activity is essential in the primary and secondary prevention of chronic health diseases and also in increasing overall wellbeing. It is a modifiable risk factor for various cardiovascular and a wide variety of other chronic diseases such as diabetes, hypertension, obesity, bone and joint

diseases and depression. Several biological mechanisms may be responsible. Routine PA has been shown to improve body composition, lipoprotein profiles, glucose homeostasis, and coronary blood flow and decrease blood pressure, blood coagulation and enhances endothelial function. [10] Each of this factor explains an improved physiological well being.

Suija et al conducted a cross sectional study among female Estonian family doctors, assessed their physical activity levels using IPAQ and a questionnaire about counseling of patients with chronic disease concerning their PA and a healthy lifestyle. They concluded that female doctors were physically active and encouraged promotion of health and PA. [4]

Overweight and obesity are prevalent among mid-age and older women, increasing their risk of a wide range of physical and mental health problems (such as hypertension, diabetes, tiredness and various bodily pains). [11] Participants in this study had a mean BMI of 24.91Kg/m^2 which is overweight and hence making them more prone to health issues. However, work related PA (581.5 METs) was found to be highest amongst all domains of physical activity, followed by leisure time PA (561.1 METs) which suggests good participation of female health professionals in physical activity.

Mental component summary showed low positive co-relation with quality of life in the current study. However, studies done previously have concluded strong associations between the two. Possible reasons of low co-relations can be due to less prevalence of depression or inefficient measures of depression in Indian population.

Limitations of the present study consist of the other factors which may influence the co-relation such as self efficacy and perception of fitness and health. PA measure was self reported, and hence there is a possible risk of overestimation and underestimation. However, IPAQ is known to have good psychometric properties and is most widely used questionnaire in large epidemiological studies, especially while laboratory methods are more expensive.

CONCLUSION

Those female medical professionals performing good amount of physical activity during the day are better on physical health and vice versa. Mental health has no co-relation with physical activity. Physical activity and quality of life are co-related and hence encouraging physical activity may have substantial benefits in female medical health professionals.

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Conflict of interest

All authors have declared there is not any potential conflict of interests concerning this article.

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